

TOWN OF PINE KNOLL SHORES

CAMA CORE LAND USE PLAN

EXECUTIVE SUMMARY



Adopted by the Pine Knoll Shores Board of Commissioners: September 25, 2008
Certified by the Coastal Resources Commission: _____

Prepared by:

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TABLE OF CONTENTS

	<u>PAGE</u>
1. PREFACE	1
2. INTRODUCTION	1
3. PINE KNOLL SHORES COMMUNITY VISION	2
4. KEY ISSUES/DOMINANT GROWTH-RELATED ISSUES	2
5. POPULATION SUMMARY	3
6. HOUSING SUMMARY	4
7. EMPLOYMENT AND ECONOMY SUMMARY	5
8. ENVIRONMENTAL CONDITIONS	5
1. White Oak River Basin	5
2. Subbasin 03-05-03	7
3. Water Treatment Facilities	9
4. Natural Hazards	10
5. Natural Resources	11
9. ANALYSIS OF LAND USE AND DEVELOPMENT	11
1. Existing Land Use	11
2. Land Use Conflicts	12
3. Development Trends	13
10. LAND USE/DEVELOPMENT GOALS AND IMPLEMENTING ACTIONS	15
1. Introduction	15
2. Impact of CAMA Land Use Plan Policies on Management Topics	15
3. Public Access	15
4. Land Use Compatibility	17
5. Infrastructure Carrying Capacity	22
6. Natural Hazard Areas	25
7. Water Quality	28
8. Local Areas of Concern	33

TABLES

Table 1	Pine Knoll Shores and Carteret County Population Growth by County and Municipality	3
Table 2	Pine Knoll Shores Permanent and Peak Seasonal Population Forecast, 2000-2025	4
Table 3	White Oak River Basin Population Distribution	6
Table 4	Pine Knoll Shores Registered Animal Operations	7
Table 5	Hydrologic Subdivisions in the White Oak River Basin	7
Table 6	Characteristics of Subbasin 03-05-03	8
Table 7	Use Support Assessment Summary Growing Area E-2	9
Table 8	Pine Knoll Shores Land Use Acreage within Flood Hazard Areas	10
Table 9	Pine Knoll Shores Existing Land Use Survey	12
Table 10	Pine Knoll Shores Zoning Classification of Undeveloped Properties	14

EXECUTIVE SUMMARY

1. PREFACE

While the preparation of a comprehensive plan is required by the Coastal Area Management Act, there are broader and equally important reasons to engage in the planning process. Basically, planning begins with understanding your community and its people and learning how to care for them. Local government plans and planning affect people's lives. Tough choices must be made about the natural, manmade, and financial resources in the community. The town's budget should be compared to the plan to ensure that public money will be spent in accordance with the community's goals and objectives.

The planning process also serves to educate us about ourselves, our attitudes towards others, and our willingness to share a sense of community. Planning is often promoted as a means of community decision-making through public participation. But planning also may involve conflict and friction because it may divide us into opposing groups. Some conflict in the planning process is good. It stimulates us to think and reminds us of the need to understand and tolerate, and even support, the opinions of others.

A town should not undertake the preparation of a land use plan without understanding that a plan should be:

1. Comprehensive in setting goals and objectives for all aspects of the community.
2. Part of a continuous planning process that is timely and responsive to the needs and desires of the community.
3. The legal basis for land use regulations and a guide for a capital improvements plan for town budgeting.

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

2. INTRODUCTION

The Fiscal Years 2004/2005 - 2008/2009 Core CAMA Land Use Plan is prepared in accordance with the requirements of the North Carolina Coastal Area Management Act (CAMA). Specifically, this document complies with Subchapter 7B, "CAMA Land Use Planning Requirements," of the North Carolina Administrative Code, as amended August 1, 2002.

The Subchapter 7B guidelines provide that each of the twenty coastal counties and the municipalities within those counties prepare and adopt a Core CAMA Land Use Plan (hereinafter referred to as the "Plan") that meets the planning requirements adopted by the

Coastal Resources Commission (CRC). If a county chooses not to prepare a plan, the guidelines specify that the CRC will prepare and adopt a CAMA Land Use Plan for that county and the municipalities in the county which choose not to prepare their own plan. Municipalities not preparing their own plan will be included in the plan for the county in which the municipality is located.

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

At the beginning of the preparation of this document, the Town of Pine Knoll Shores adopted a Citizen Participation Plan which is intended to ensure that all interested citizens have an opportunity to participate in the development of this plan through both oral and written comments.

Following adoption of the plan by the Pine Knoll Shores Board of Commissioners, it was submitted to the CRC for certification. Certification of the plan was achieved on _____, 2008.

3. PINE KNOLL SHORES COMMUNITY VISION

To the fullest extent possible, Pine Knoll Shores will strive to maintain a community dedicated to preserving its diverse forestlands, Roosevelt Natural Area, wetlands, marine life, and native wildlife while at the same time offering its citizens a quiet, respectable, predominantly single-family community. Residential areas will be strictly preserved and protected. Population growth should continue at a moderate growth rate. Commercial development will be limited and not allowed to infringe upon non-commercial land uses. Pine Knoll Shores will continue to be a community in which the best possible services are provided to its citizens at the most reasonable cost.

4. KEY ISSUES/DOMINANT GROWTH-RELATED ISSUES

It is very useful for a community to determine the key concerns and growth-related issues at the beginning of the planning process. In order to solicit input from Pine Knoll Shores citizens, an issues identification meeting was held on November 11, 2004. Approximately 30 Town residents attended this work session. The 1,600+ citizens of Pine Knoll Shores were notified of this meeting via normal open meeting procedures. At this meeting, an open floor discussion was held regarding issues that Town residents feel will have a significant impact on the future of Pine Knoll Shores. The list provided below is a ranking of the issues identified at this meeting. During the course of this meeting, all issues identified were listed. Subsequent to the discussion portion of the meeting, all attendees were asked to vote on what they felt were the most significant concerns or issues listed. There are several issues whose rank is tied, due to receiving the same number of votes.

RANK	ISSUE	SCORE
1	Maintain strict residential zoning restrictions	13
2	Develop a recreational facility (indoor - senior)/Address issue of providing youth recreational facilities (multi-use)	12
3	Phase in underground utilities	11*
3	Solve problems involved with water system (purchase and/or improvements)	11*
3	Develop long term plan for beach renourishment 20-30 years	11*
3	Maintain the canal	11*
4	Preserve the maritime forest	10*
4	Identify strategy for use and preservation of Roosevelt natural area	10*
5	Address stormwater management issues	9*
5	Maintain housing standards	9*
6	Address traffic issues along Highway 58	8*
6	Determine a proper use for Roosevelt tract (10 acre) to be gifted to the Town	8*
7	Recognize need for ongoing beach renourishment	7
8	Encourage redevelopment	6*
8	Develop additional access into the canal (ingress/egress) to Intracoastal Waterway	6*
8	Identify central storage area for recreational vehicles (boats, Rvs)	6*
9	Install a central sewer system	5*
9	Take status quo approach to traffic issue	5*
10	Oppose third right-of-way access proposed for the middle of Bogue Banks	4
11	Identify ways to make the Town more senior friendly	3
12	Develop improved Town signage at entrances	2*
12	Address the issue of demographic shift (housing occupancy)	2*
12	Develop recreational programs (Town-sponsored)	2*
13	Develop a storm (hurricane) shelter	1*
13	Recycle stormwater	1*
13	Provide adequate parking at beach access sites to comply with section 933 standards	1*
14	Identify potential sites for sewer system infrastructure	0*
15	Address sewer need for commercial operations along Highway 58	0*
16	Develop Town-wide bicycle paths	0*

*Indicates a tie score.

Additionally, a land use plan survey was mailed to 1,975 (617 in-Town; 1,358 absentee) property owners. A total of 959 (333 in-Town; 626 absentee) completed questionnaires were received.

5. POPULATION SUMMARY

Historical population growth and forecast of population growth are summarized in the following tables.

Table 1. Pine Knoll Shores and Carteret County Population Growth by County and Municipality

Municipality	1980	1990	2000	'80 to '90	'90 to '00	Overall '80 to '00
Pine Knoll Shores	646	1,360	1,524	110.5%	12.1%	131.6%
Carteret County	41,192	52,553	59,379	27.6%	13.0%	44.1%

Source: US Census Bureau.

Table 2. Pine Knoll Shores Permanent and Peak Seasonal Population Forecast, 2000-2025

	2000	2005	2010	2015	2020	2025
Permanent Population	1,524**	1,601**	1,657	1,696	1,724	1,741
Peak Seasonal Population*	11,130	11,898	12,707	13,330	13,970	14,598
Total	12,654	13,499	14,364	15,026	15,694	16,339

Sources:

*Holland Consulting Planners, Inc. (November 2004 and 2005), additional visitors to the expanded North Carolina Aquarium have also been included in these figures.

**NC Office of State Planning.

The following provides a summary of the significant demographic factors:

- ▶ Pine Knoll Shores is the second fastest growing municipality in Carteret County following the Town of Emerald Isle.
- ▶ The Pine Knoll Shores permanent population increased by 131.6% since 1980.
- ▶ It is estimated that the Town's peak seasonal population is approximately 12,654 persons.
- ▶ According to the 2000 US Census, 96.9% of Pine Knoll Shores residents have a high school degree, while 48.1% reported having a bachelor's degree or higher.
- ▶ The minority population in Pine Knoll Shores is less than one percent (0.9%).
- ▶ Between the years of 1990 and 2000, the retired age population (65+) increased by 11.5%.

6. HOUSING SUMMARY

- ▶ The total number of dwelling units that are permanently occupied by either renters or owner-occupants decreased by 4.1% between 1990 and 2000. This also means the vacant housing stock increased by 4.1%.
- ▶ The median year for year structure built within Pine Knoll Shores is 1989.
- ▶ Approximately 67.6% of the Town's housing stock was constructed between 1980 to 1994.
- ▶ According to Pine Knoll Shores building permit activity reports, 59 single-family residential structures were constructed between 2000 and 2003.

- ▶ Residential structures within Pine Knoll Shores on average have 5.9 rooms per unit.
- ▶ According to the 2000 US Census, 63.0% of the Town's housing stock is comprised of single-family homes.

7. EMPLOYMENT AND ECONOMY SUMMARY

- ▶ The per capita income for Pine Knoll Shores residents is \$34,618, 2000 U.S. Census.
- ▶ The 2000 US Census reported that 53.8% of the Town's households had an annual income of \$50,000 or greater.
- ▶ The largest employer of Pine Knoll Shores' residents falls under the category of Education, Health, and Social Services.
- ▶ The highest paying jobs in Carteret County are businesses related to Professional, Scientific, Management, Administrative, and Waste Management Services.
- ▶ The average commuting time for Pine Knoll Shores residents is 27.7 minutes.

8. ENVIRONMENTAL CONDITIONS

1. White Oak River Basin

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

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

As existing and future land uses are considered within Pine Knoll Shores, these goals should be kept in mind. Within the White Oak River Basin, Pine Knoll Shores is located entirely within subbasin 03-05-03. It should be noted that there are currently two designated outstanding resource waters located within or immediately adjacent to the Pine Knoll Shores planning jurisdiction.

The White Oak River Basin lies entirely within the southern coastal plain. The basin includes four separate river systems: the New River and its tributaries in the southwestern section; the White Oak River and its tributaries; the Newport River and its tributaries; and the North River in the eastern section. The basin also includes Bogue and Core Sounds. Pine Knoll Shores' jurisdiction is bordered to the north by Bogue Sound. The White Oak River Basin encompasses all or portions of four counties and sixteen municipalities. Table 3 provides population information for these areas within the White Oak River Basin. This information was provided by the NC Division of Water Quality from the update to the White Oak River Basinwide Water Quality Plan which is not yet available for distribution.

Table 3. White Oak River Basin Population Distribution

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

Source: NC Department of Water Quality DRAFT White Oak River Basinwide Water Quality Plan (not available for distribution).

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

Table 4. Pine Knoll Shores Registered Animal Operations

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

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

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

Source: NC Division of Water Quality DRAFT White Oak River Basinwide Water Quality Plan (not available for distribution).

2. Subbasin 03-05-03 (Hydrologic Unit 03020106)

Most federal government agencies, including the US Geological Survey (USGS) and the US Natural Resources Conservation Service (NRCS), use a system of defining watersheds that is different from that used by the Division of Water Quality (DWQ) and many other state agencies in North Carolina. Under the federal system, the White Oak River Basin is made up of two hydrologic areas referred to as hydrologic units. One of these units includes the entire White Oak River Basin, except the New River watershed area, which is assigned to the other unit. Each hydrologic unit is defined by an 8-digit number. DWQ has a two-tiered system in which the state is subdivided into 17 river basins with each basin further subdivided into subbasins. Table 5 compares the two systems. The White Oak River Basin is subdivided by DWQ into five subbasins.

Table 5. Hydrologic Subdivisions in the White Oak River Basin

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

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

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

Town of Beaufort and the Beaufort Inlet. Most of this subbasin is comprised of the estuarine waters of Bogue and Core sounds. The only source of surface freshwater throughout the subbasin is the Newport River.

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

Table 6. Characteristics of Subbasin 03-05-03

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

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

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

Table 7. Use Support Assessment Summary Growing Area E-2

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

Source: NC Division of Water Quality DRAFT White Oak River Basin Water Quality Management Plan (not available for distribution).

3. Water Treatment Facilities

Communities along Bogue Banks have been concerned with wastewater treatment and a long term strategy for dealing with wastewater for many years . According to the Carteret County Department of Environmental Health (DEH), it is anticipated that Pine Knoll Shores will continue to rely on private septic tank systems and package treatment plants. Reliance on these systems has slowed growth and redevelopment of large multi-family and hotel complexes due to the significant expense associated with package treatment facilities. At this time, the Town of Pine Knoll Shores has made a decision to not support the installation of a central sewer system. This decision was made based on the premise that not providing central sewer will ultimately help control growth. There are currently 12 package plants located within the jurisdiction of Pine Knoll Shores. These systems vary in age and require weekly maintenance. All facilities have operators who are responsible for weekly maintenance and upkeep of the systems. Additionally, the county health department inspects the systems annually to ensure that there are no problems or deficiencies that need to be addressed. As these facilities age, the health department requires that upgrades and/or replacement systems be put in place.

There are a large number of private septic tank systems located throughout Pine Knoll Shores. Although the soil survey reports that soils within Pine Knoll Shores are poorly suited for septic tank systems, the existing systems appear to be in good working order. According to the Carteret County DEH, there are no significant problems with private septic tank systems within Pine Knoll Shores.

Carteret County is currently working on a comprehensive database that will locate and document problems experienced with septic systems throughout the county, including Pine

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

4. Natural Hazards

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

In order to further define how significant an impact a major storm event may have on the Town of Pine Knoll Shores, the following table provides the acreage within the AE and VE flood zones by land use type. A detailed discussion regarding flood hazard areas within Pine Knoll Shores, including definitions of flood zone designations, is provided on page 25 and 27 of the CAMA Core Land Use Plan. These two flood zones are considered to be high hazard areas, where there is a one percent annual chance of a flooding event. The primary distinction between these two zones is that properties within the VE zone are also vulnerable to coastal wave action. All properties within these two zones are required to carry federal flood insurance. Additionally, development within these areas must comply with the Town's Flood Damage Prevention Ordinance, which has provisions for construction and finished floor elevation to increase the safety of a structure if a flooding event occurs. Table 8 provides the Town's acreage that falls within the AE and VE flood zones by land use. According to this table, 142.2 acres or 11.0% of Pine Knoll Shores' 454.8 residential land use acres fall within a flood hazard area. This includes both single- and multi-family housing units.

Table 8. Pine Knoll Shores Land Use Acreage within Flood Hazard Areas

Land Use	Acreage by Land Use	% of Total Town Acreage
Association Owned Property	9.6	0.7%
Canal	12.8	1.0%
Commercial/Hotel	11.6	0.9%
Common Area	65.2	5.0%
Multi-Family Residential	9.9	0.8%

Table 8 (continued)

Land Use	Acreage by Land Use	% of Total Town Acreage
Marina	2.6	0.2%
Municipally Owned	40.1	3.1%
Office & Professional	0.1	0.0%
Institutional	34.0	2.6%
Public Beach Access	3.1	0.2%
Recreational	243.4	18.7%
Single-Family Residential	132.3	10.2%
Utility	5.3	0.4%
Vacant	40.4	3.1%
Total	610.2	47.0%

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

5. Natural Resources

Pine Knoll Shores is home to many natural resources including significant natural heritage areas, wetlands, public trust areas, and state defined protected lands. These areas have been discussed in detail earlier in the plan. This discussion begins on page 33 of the Pine Knoll Shores CAMA Core Land Use Plan and includes maps showing the locations of all natural resources and areas of environmental concern within the Pine Knoll Shores jurisdiction.

9. **ANALYSIS OF LAND USE AND DEVELOPMENT**

1. Existing Land Use

In order to address future development within Pine Knoll Shores, it is necessary to establish a snapshot of what is currently developed within the Town's planning jurisdiction. This is achieved by conducting a detailed land use survey, which allows for a review of existing land use patterns. This review will assist in identifying land use patterns, conflicts, and trends that exist within the Town's planning jurisdiction. The process and data associated with it will provide a solid foundation for decisions about future land use and policy development.

A detailed land use survey of Pine Knoll Shores was conducted for the Town's entire planning jurisdiction. This survey was completed through the use of aerial photography and on-site windshield surveys. The existing land use map was then submitted to the Land Use Planning Committee for review to address any errors. Land use within Pine Knoll Shores has been divided into the following land use categories: association owned property, canal, commercial/hotel, common area, multi-family, marina, municipally owned, office & professional, institutional, public beach access, recreational, single-family residential, utility, and vacant. Table 9 summarizes the land use acreage resulting from the existing land use survey. According to the land use survey, approximately 35% of the acreage within Pine Knoll

Shores is residential. Single-family housing takes up the most acreage followed by recreational. A majority of this acreage is located within the Roosevelt Natural Area.

Table 9. Pine Knoll Shores Existing Land Use Survey

Land Use	Acreage by Land Use	% of Total Town Acreage
Association Owned Property	16.6	1.3%
Canal	12.3	0.9%
Commercial/Hotel	24.1	1.9%
Common Area	117.9	9.1%
Multi-Family	21.8	1.7%
Marina	2.8	0.2%
Municipally Owned	56.2	4.3%
Office & Professional	2.1	0.2%
Institutional	51.3	3.9%
Public Beach Access	3.8	0.3%
Recreational	403.9	31.1%
Single-Family Residential	433.0	33.3%
Utility	13.9	1.1%
Vacant	139.9	10.8%
Total*	1,299.5	100.0%

*This figure does not include right-of-ways.

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

2. Land Use Conflicts

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

a. *Encroachment of Residential and Urban Type Uses into Forested Areas*

Pine Knoll Shores has done an excellent job over the years of preserving the maritime forest and maintaining the natural landscape that exists throughout the Town's jurisdiction. Over time, however, portions of the forest have given way to development. The Town's proactive approach to protecting wooded areas will assist with the effort of preserving natural areas. It is recognized that portions of the forest will continue to be cleared in order to accommodate future development. This issue will be addressed in the policy development portion of the plan.

b. Residential Development within Flood Hazard Areas

The vulnerability of Pine Knoll Shores to coastal flooding and cyclonic tropical storms has been discussed several times within the context of this plan. The Town recognizes that development within flood hazard areas is going to occur due to the Town being located almost entirely within the floodplain. The Town's strategy to address this issue will be to continue enforcement of land use controls that increase the safety of residential and non-residential structures that are built within defined flood zones. Additionally, the Town has recently adopted a FEMA-approved hazard mitigation plan that details the Town's vulnerability to all natural hazards. This document also outlines specific goals, objectives, and implementing actions that will be carried out to increase the safety of Town citizens and property in the event of a natural disaster.

c. High Density Development in Areas with Soils Having Severe Septic Tank Limitations

There is currently no central sewer system serving the municipalities along Bogue Banks. Sewage treatment within Pine Knoll Shores is primarily handled either through individual septic tank systems or package treatment plants. Use of these facilities is a concern for the Town, and has been identified as a key issue within this planning process. This issue has been an impediment to new construction and redevelopment within the Town's jurisdiction. This issue will be discussed further in the Community Facilities/Services portion of the plan.

3. Development Trends

The Town of Pine Knoll Shores has developed very rapidly over the last 30 years. From the Town's origin, Pine Knoll Shores has been developed as a primarily residential area to accommodate both permanent and seasonal residents. The Town has implemented strict land use controls in an effort to maintain this residential character.

According to the existing land use survey, approximately 304, or 14%, of the Town's total parcel count remains vacant. All but ten of the 304 parcels have already been platted for single-family residential development. The vacant property within Pine Knoll Shores is scattered throughout the Town's jurisdiction; however, a majority of the vacant parcels fall within the central portion of Town, south of Oakleaf Drive, which consists of single-family homes. It is anticipated that a majority of the vacant land within Pine Knoll Shores will be developed as single-family residential homes. There are several larger vacant parcels that are located along Pine Knoll Boulevard that could potentially support a future development. Two of these properties are currently municipally-owned parcels. There has been discussion of converting one of these properties into a boat/recreational vehicle storage area that would be operated by the Town.

In order to provide a forecast of how vacant land will be developed throughout the Town's jurisdiction, an overlay analysis was performed based on the existing land use survey and the Town's zoning map. Based on this analysis, the zoning district of each undeveloped parcel has been identified. Table 10 provides a summary of how all vacant parcels will be developed, if this development follows existing zoning patterns.

Table 10. Pine Knoll Shores Zoning Classification of Undeveloped Properties

Zoning District	Parcels	% of Total Vacant Parcels	Acreage by Land Use	% of Total Vacant Acreage
MF1, MF2	56	18.4%	29.3	20.9%
OP	1	0.3%	9.3	6.7%
R1, R2, R3, R4	245	80.6%	100.9	72.1%
REC2, REC3	2	0.7%	0.4	0.3%
Total	304	100.0%	139.9	100.0%

Source: Holland Consulting Planners, Inc.

Each of the zoning classifications listed in the table above include several different zoning districts. The following summarizes which zoning districts have been included in the table, as well as the intended use of each zoning district as defined in the Town's zoning ordinance:

- ▶ Multi-Family District (MF1, MF2) - the principal use of land is for multi-family dwellings.
- ▶ Office & Professional (OP) - the principal use of land is for office and professional service facilities to serve the needs of the community.
- ▶ Residential Districts (R1, R2, R3, R4) - the principal use of land is for dwellings.
- ▶ Recreation Districts (REC2, REC3) - the principal use of land is for recreation, both public and private.

According to this information, 295 acres, or 96% of the Town's undeveloped land is zoned for either single- or multi-family development. A majority of this land, 86% of the vacant parcels, is zoned to be developed as single-family homes. It is difficult to judge how rapidly this development will take place. The Pine Knoll Shores planning and inspections office has issued an average of 17 single-family residential building permits per year between the years of 1997 and 2004. There were also building permits issued for the construction of 42 multi-family units. It is anticipated that development of this undeveloped property will occur across the Town's jurisdiction. It is not expected that rapid development will occur in specific portions of the Town's jurisdiction.

10. LAND USE/DEVELOPMENT GOALS AND IMPLEMENTING ACTIONS

1. Introduction

The Coastal Resource Commission (CRC) developed six management topics to be addressed in CAMA Land Use Plans: Public Access, Land Use Compatibility, Infrastructure Carrying Capacity (including transportation), Natural Hazard Areas, Water Quality, and Local Areas of Concern. These six management topics were created to ensure that CAMA Land Use Plans support the goals of CAMA, define the CRC's expectations for the land use planning process, and give the CRC a substantive basis for review and certification of CAMA Land Use Plans. Each management topic includes three components: a management goal, a statement of the CRC's planning objective, and requirements for the CAMA Land Use Plan. These policies apply to the entire planning jurisdiction. The local concerns which should be addressed in this plan are identified on pages 2-3. These concerns and aspirations were consulted to develop the goals and objectives included in this plan. Most of the policies and implementing actions are continuing activities. Specific timelines may not be applicable in most situations. The policies and implementing actions frequently utilize the following words: should, continue, encourage, enhance, identify, implement, maintain, prevent, promote, protect, provide, strengthen, support, and/or work. The intent of these words is defined in Appendix V of the CAMA Core Land Use Plan.

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

This document is intended to be supportive of the CAMA regulations for protection of AEC's (15A NCAC 7H) and of the Town of Pine Knoll Shores Vision Statement on page 2. The Vision Statement was developed based on the key issues identified on page 3. No negative impacts are anticipated by the implementation of the goals, objectives, and policies that are included in this plan. All policies are consistent with applicable State and Federal requirements when State and Federal requirements apply. Where policies exceed state and federal requirements it will be noted in the policy.

3. Public Access

a. Management Goal

The Town of Pine Knoll Shores will provide, as required, public access to the beaches, estuarine shorelines, estuarine waters, and the public trust waters bordering its primary corporate limits.

b. Planning Objective

The Town of Pine Knoll Shores will develop comprehensive policies that provide beach and public trust water access opportunities for the public along the shoreline and estuarine areas within the planning jurisdiction. These plans shall be consistent with the subdivisions and residential nature of the Town.

c. Land Use Plan Requirements

The following are the Town's policies/implementing actions for waterfront access. All policies are continuing activities.

Policies:

- P.1 The Town supports recreational-related developments that protect and preserve the natural environment while promoting the Town as a vacation destination while consistent with the residential nature of the town. It supports the private and public development of waterfront access through private funds and federal/state grant monies.
- P.2 The Town supports providing shoreline access for persons with disabilities, where possible.
- P.3 The Town supports state/federal funding of piers for crabbing, fishing, and sightseeing, as well as other facilities to serve the public at beach and estuarine access sites.
- P.4 The Town supports the development of estuarine access areas which comply, to the maximum extent possible, with all state and federal regulatory requirements to ensure adequate shoreline access. Areas that have traditionally been used by the public should be given special attention. One particular project of local interest the establishment of an access area to Bogue Sound adjacent to Town Hall that will offer maritime forest and estuarine access for citizens and visitors. The Town supports the use of local public funds and state grant money for this effort.
- P.5 The Town of Pine Knoll Shores supports the exploration of the requirements for additional facilities as identified in the 2007 Recreational Advisory Committee survey.
- P.6 The Town supports the development of an environmentally sound, low impact use for the Roosevelt Natural Area.
- P.7 The Town of Pine Knoll Shores will seek to meet all requirements set forth by the US Army Corps of Engineers Section 933 Project guidelines with respect to public beach access.
- P.8 The Town supports no net loss of existing marinas or boating access.

Implementing Actions:

- I.1 The Town will prepare a parks and recreation plan and seek funding for the preparation of the plan. This update will address recreational needs as identified by the Recreational Advisory Committee. **Schedule: Fiscal Year 2009-2010.**
- I.2 The Town has received funding under the North Carolina CAMA Shoreline Access funding program (15A NCAC 7M, Section .0300, Shorefront Access Policies). These funds will, if possible, be utilized to assist in acquiring and constructing the project discussed in P.4, above. **Schedule: Continuing Activity.**
- I.3 The Town will pursue private sources of funding for the establishment of additional conservation areas throughout its jurisdiction, including donation of land. **Schedule: Continuing Activity.**
- I.4 The Town will work with citizens, state permitting agencies, and the NC Division of Coastal Management to identify and plan for a suitable use within the Roosevelt Natural Area. This planning should be focused on establishing a use that will have minimal impacts on the natural environment, and will serve to maintain the quality of adjacent Outstanding Resource Waters (ORW). An example of a suitable use would be the renovation and expansion of the trail system which currently extends from the NC State Aquarium property. **Schedule: Fiscal Years 2009-2010.**
- I.5 The Town will provide parking for all public beach access sites as required by the US Army Corps of Engineers and will petition the NCDOT to provide pedestrian crosswalks. **Schedule: Fiscal Years 2008-2009/2009-2010.**
- I.6 The Town will consider establishing a marina zoning district on sites where marinas and boat access sites exist in order to have no net loss of existing marinas. **Schedule: Fiscal Year 2008-2009.**

4. Land Use Compatibility

a. Management Goal

The Town of Pine Knoll Shores will ensure that development and use of resources or preservation of land will minimize direct and secondary environmental impacts, avoid risks to public health, safety, and welfare, and will be consistent with the capability of the land based on considerations of interactions of natural and manmade features.

b. Planning Objectives

- i. The Town of Pine Knoll Shores will adopt and apply local development policies that balance protection of natural resources and fragile areas with continued growth, development, and redevelopment.
- ii. The Town of Pine Knoll Shores' policies will provide clear direction to assist local decision making and consistency findings for zoning, divisions of land, and public and private projects.

c. Land Use Plan Requirements

The following are the Town of Pine Knoll Shores policies/implementing actions for land use compatibility.

Policies - Residential:

- P.9 The Town of Pine Knoll Shores discourages the re-zoning of existing residentially-developed or zoned areas to non-residential and multi-family classifications in an effort to maintain the overall residential character of the Town of Pine Knoll Shores. Such re-zoning and amendments in classifications to the future land use map should be carefully balanced with a demonstrated need for such proposed development that will be the best overall land development policy for the Town. This policy should be focused on carrying out the policies established in this plan, as well as the Town's Vision statement outlined on page 2.
- P.10 The Town discourages the construction of excessively large structures and will monitor building permit activity in an effort to control this type of development. The Town's zoning ordinance has been amended to establish maximum impervious lot cover requirements.
- P.11 The Town of Pine Knoll Shores supports quality development reflecting the spectrum of housing needs ranging from single-family homes to multi-family (where indicated on the future land use map) and planned unit developments.
- P.12 The Town of Pine Knoll Shores supports regulating growth to coincide with the provision of public facilities and services. This policy should especially apply to the proper provision of wastewater treatment facilities, and their ability to operate in a manner that will minimize impacts on the open waters of Bogue Sound, the Pine Knoll Shores canal system, and the Town's groundwater.
- P.13 The Town of Pine Knoll Shores supports the continued establishment and maintenance of buffers along major thoroughfares.

- P.14 The Town of Pine Knoll Shores supports providing adequate conservation/open space buffers between areas designated for residential development as indicated on the future land use map and any adjacent non-residential land use, including commercial, office and/or institutional, and utility areas.
- P.15 The Town of Pine Knoll Shores supports all covenants established by all Homeowners Associations (HOA) throughout its planning jurisdiction. Proposals for development or redevelopment should not only comply with Town land development policies and ordinances, but should also abide by all restrictions established under a given properties respective HOA restrictive covenants.
- P.16 The Town of Pine Knoll Shores supports allowing home occupations in residential districts as evidenced in Chapter XXI, page 169.3 of the Pine Knoll Shores Code.

Implementing Actions - Residential:

- I.7 All re-zoning and subdivision approvals will consider the future land use and land suitability maps and analyses which are included in this plan. **Schedule: Continuing Activity.**
- I.8 The Town of Pine Knoll Shores will permit residential development to occur in response to market needs provided that the following criteria are met:
- (1) Due respect is offered to all aspects of the environment.
 - (2) If deficient community facilities and services are identified, the Town of Pine Knoll Shores should adequately meet demands.
 - (3) Additional residential development should concurrently involve planning for improvements to community facilities as additional needs are identified.
 - (4) Residential development is consistent with other Town policies and the land use map as contained in this plan update.

This implementing action will be enforced through the Town of Pine Knoll Shores zoning and subdivision ordinances. **Schedule: Continuing Activity.**

- I.9 The Town of Pine Knoll Shores will consider revisions to the zoning ordinance for non-residential sites to ensure adequate buffering and landscaping to separate residential and incompatible non-residential uses, and adequate regulation of off-site lighting, hours of operation, and vehicular access and parking locations. Non-residential development should be bound to those areas specified on the future land use map included in the CAMA Core Land Use Plan. **Schedule: Fiscal Years 2008-2009.**

- I.10 The Town of Pine Knoll Shores will regulate through its zoning and subdivision ordinance the development of conflicting land uses in areas where non-residential development is permitted. **Schedule: Continuing Activity.**

Policies - Commercial:

- P.17 The Town of Pine Knoll Shores supports commercial development consistent with the Town of Pine Knoll Shores' future land use map and current zoning ordinance. It should be noted; however, that the Town would like to maintain a primarily residential community, and the infringement of commercial development will be held to specific locales through strict enforcement of the Town's land development code.
- P.18 The Town of Pine Knoll Shores opposes the establishment of private or public solid waste collection or holding sites within the Town of Pine Knoll Shores' planning jurisdiction. Solid waste collection is contracted out and taken to the Tri-County Landfill. Solid waste is picked up curbside on a weekly basis. Recycling is collected curbside every other Thursday.
- P.19 The Town of Pine Knoll Shores prohibits the construction of any additional public or private open water or upland marina facilities. Modification of existing marinas will be permitted, assuming the geographical extent of the existing facility is not expanded. This policy exceeds guidelines established under 15 NCAC 7H. While the Town prohibits construction of new marinas, it supports the maintenance and no net loss of existing marinas.

Implementing Actions - Commercial:

- I.11 The Town of Pine Knoll Shores will enforce its zoning regulations and rely on state permitting agencies to ensure that all commercial development within or adjacent to Areas of Environmental Concern is carried out in accordance with all local, state, and federal regulations. **Schedule: Continuing Activity.**
- I.12 The Town of Pine Knoll Shores will review its zoning and subdivision ordinances to ensure compliance with residential and non-residential policies. **Schedule: Fiscal Years 2007-2008/2008-2009.**

Policies - Conservation:

- P.20 Except as otherwise permitted in this plan, residential, commercial, and office/institutional development should not be supported in natural heritage areas, conservation areas, or coastal wetlands. Residential and commercial development which meets 15A NCAC 7H use standards will be allowed in estuarine shoreline, estuarine water, and public trust areas. In all other areas,

development will be allowed that is consistent with applicable local, state, and federal regulations.

- P.21 The Town of Pine Knoll Shores will support larger lots in conservation classified areas as designated on the future land use map through enforcement of the Town of Pine Knoll Shores subdivision and zoning ordinances in zoned areas.
- P.22 The Town of Pine Knoll Shores aims to maintain its character as an eco-friendly residential community. Commercial development should be permitted only in areas already designated for this use through the Town of Pine Knoll Shores' zoning ordinance and Future Land Use Map.

Implementing Actions - Conservation:

- I.13 Protect the Town of Pine Knoll Shores' fragile areas from inappropriate, unplanned, or poorly planned development through the following:
- (1) By enforcing the Town of Pine Knoll Shores Zoning Ordinance and implementing the future land use map, limit land uses in the vicinity of historic sites, natural heritage areas, and designated conservation areas to compatible land uses. **Schedule: Continuing Activity.**
 - (2) The Town of Pine Knoll Shores will coordinate all housing code enforcement/redevelopment projects/public works projects with the NC Division of Archives and History to ensure the preservation and identification of significant historic structures and archaeological sites. **Schedule: Continuing Activity.**
- I.14 The Town of Pine Knoll Shores will review its zoning and subdivision ordinances to ensure compliance with all conservation policies. **Schedule: Fiscal Years 2007-2008/2008-2009.**

Policies - Stormwater Control:

- P.23 The Town of Pine Knoll Shores supports reducing soil erosion, runoff, and sedimentation to minimize the adverse effects on surface and subsurface water quality. This policy is especially important in areas adjacent to the Outstanding Resource Waters located along the Roosevelt Natural Area, as well as the waters within the Town's canal system.
- P.24 The Town of Pine Knoll Shores supports the enforcement of all controls and regulations, specifically design standards, tie-down requirements, construction and installation standards, elevation requirements, flood-proofing, CAMA regulations, and FEMA regulations, deemed necessary by the Town Board of Commissioners to mitigate the risks of lives and property caused by severe

storms and hurricanes, specific policy recommendations and implementing actions supporting this may be found in the Town's locally adopted Hazard Mitigation Plan.

Implementing Actions - Stormwater Control:

- I.15 As additional issues arise related to stormwater control, including the potential implementation of National Pollutant Discharge Elimination System (NPDES) Phase II stormwater requirements, the Town will review its stormwater management ordinance to ensure that all necessary steps are being taken to minimize the impacts of stormwater runoff on both adjacent properties and water quality. **Schedule: Annually**
- I.16 Pine Knoll Shores will take measures to ensure compliance with all North Carolina Coastal Stormwater Rules. **Schedule: Continuing Activity.**
- I.17 The Town of Pine Knoll Shores will review its stormwater control ordinance and include updates regarding regulations for water detention and/or retention facilities in new developments as new state and federal policy require. **Schedule: Annually**
- I.18 The Town of Pine Knoll Shores supports ongoing planning and capital improvement efforts to address the drainage problem associated with flooding from tropical storm events. The Town will continue to work toward a comprehensive solution to current storm drainage issues that exist within the Town's planning jurisdiction. This action specifically applies to the two "Areas of Stormwater Concern" detailed on Map 14 (page 71) of the CAMA Core Land Use Plan. **Schedule: Fiscal Year 2008-2009/2009-2010.**
- I.19 The Town of Pine Knoll Shores will continue to seek grant funding from state and federal agencies for assistance in funding capital improvement projects that will aid the Town in alleviating flooding and storm drainage problems with exist throughout the Town's planning jurisdiction. **Schedule: Continuing Activity.**

5. Infrastructure Carrying Capacity

a. *Management Goal*

The Town of Pine Knoll Shores will ensure that public infrastructure systems are appropriately sized, located, and managed so the quality and productivity of AECs and other fragile areas are protected or restored, as deemed necessary. It is acknowledged that to achieve the infrastructure carrying capacity goals, policies, and implementing actions, some utility lines may have to extend through some environmentally sensitive areas.

b. Planning Objective

The Town of Pine Knoll Shores will establish level of service policies and criteria for infrastructure consistent with the projections of future land needs, while keeping in mind the sensitivity of areas surrounding the Town's jurisdiction.

c. Land Use Plan Requirements

Please refer to Map 12 (page 65) of the CAMA Core Land Use Plan for delineation of the existing infrastructure facilities. The following are the Town of Pine Knoll Shores' policies for infrastructure carrying capacity. All policies are continuing activities.

Policies:

- P.25 The Town of Pine Knoll Shores supports providing adequate community services and facilities which meet the needs of the Town's citizens and businesses.
- P.26 The Town of Pine Knoll Shores will work to ensure that sufficient water service is provided to promote growth, to alleviate public health problems, and to provide fire protection for the Town.
- P.27 The Town of Pine Knoll Shores supports the extension of water services from existing systems and encourages the use of central systems for new developments whether residential, commercial, or office/institutional in nature. It also supports the continued public provision of solid waste disposal, law enforcement, and educational services, including upgrades to the web-site, to all citizens of the Town.
- P.28 The Town of Pine Knoll Shores will rely on its existing land use and development ordinances to regulate development and may amend or modify regulations to encourage or require the provision of central water service to lots or parcels proposed in new developments.
- P.29 The Town of Pine Knoll Shores supports the installation and use of properly permitted septic tank systems and package treatment plants, with oversight and enforcement from the Carteret County Health Department, North Carolina Department of Environment and Natural Resources (NCDENR), and local development regulations regarding lot sizes, waste disposal system placement, system type, and maintenance. The Town recognizes how important the proper installation and maintenance of these systems is to the continued protection of environmentally sensitive areas.
- P.30 The Town of Pine Knoll Shores supports the provision of public recreational facilities and areas and will pursue funds and donations for open space and recreational facilities.

- P.31 The Town of Pine Knoll Shores supports continued efforts to improve the provision of utilities to all Town residents, both water and waste water. Although the Town does not own or operate any wastewater treatment facilities, other than those serving municipal operations, the Town supports identifying a solution to the mounting concerns related to wastewater treatment facilities.
- P.32 The Town of Pine Knoll Shores supports the transition of all overhead utility lines to underground lines.
- P.33 The Town of Pine Knoll Shores supports interconnected street systems for residential and non-residential development.
- P.34 The Town of Pine Knoll Shores supports limited access from development along all roadways to provide safe ingress and egress.
- P.35 The Town of Pine Knoll Shores supports maintaining an effective signage and addressing system for all right-of-ways including private drives and access streets.
- P.36 The Town of Pine Knoll Shores supports state and federal funding for maintenance/dredging of the Beaufort Inlet. Additionally, Pine Knoll Shores supports the requirement to place all beach quality sand from dredging projects on the beaches along Bogue Banks. The Town will continue to work with the Carteret County Shore Protection office to ensure that this alternative remains a priority.
- P.37 The Town of Pine Knoll Shores opposes the construction of a third bridge accessing Bogue Banks from Morehead City. The plans for this third bridge have the thoroughfare entering the Island in the vicinity of Salter Path and Indian Beach. This will have substantial adverse impacts on the Town's existing transportation and parking problems.

Implementing Actions:

- I.20 The Town of Pine Knoll Shores will consult the future land use map when considering new public facilities and private development. ***Schedule: Continuing Activity.***
- I.21 The Town of Pine Knoll Shores will rely on the NC Division of Environment and Natural Resources and the Carteret County Health Department to oversee the proper operation, management, and maintenance of all wastewater treatment facilities (private septic tanks and package treatment plants) within the Town. ***Schedule: Continuing Activity.***

- I.22 The Town of Pine Knoll Shores may consider adopting an operating and capital financing plan for the development of water system upgrades in preparation for future demand. ***Schedule: To Be Determined.***
- I.23 The Town of Pine Knoll Shores will provide emergency management personnel and facilities to serve the projected population growth. ***Schedule: Continuing Activity.***
- I.24 The Town of Pine Knoll Shores will coordinate the development of recreational facilities with all applicable Homeowners' Associations in order to maximize the potential quality, access, and use of these facilities. ***Schedule: Continuing Activity.***
- I.25 The Town of Pine Knoll Shores will research all opportunities for funding options to phase in underground utilities throughout its planning jurisdiction. This effort will focus on grant state and federal grant funding, as well as cooperation with private developers and all utility providers. ***Schedule: Continuing Activity.***
- I.26 The Town of Pine Knoll Shores will review and update its subdivision ordinance to ensure compliance with policies P.28 through P.41. ***Schedule: Fiscal Year 2008-2009.***
- I.27 The Town of Pine Knoll Shores will continue to consider the adoption of street right-of-ways for Town maintenance. Adoption of existing and proposed streets will be determined on a case-by-case basis, and will be based on whether the respective street right-of-way meets the design specifications of the Town of Pine Knoll Shores. ***Schedule: Continuing Activity.***
- I.28 The Town of Pine Knoll Shores will continue to rely on the North Carolina Department of Transportation for the maintenance of NC Highway 58 (Salter Path Road) and all state roads. ***Schedule: Continuing Activity.***

6. Natural Hazard Areas

a. *Management Goal*

The Town of Pine Knoll Shores will conserve and maintain shorelines, floodplains, and other coastal features for their natural storm protection functions and their natural resources giving recognition to public health, safety, and welfare issues.

b. Planning Objective

The Town of Pine Knoll Shores will develop policies that minimize threats to life, property, and natural resources resulting from development located in or adjacent to hazard areas, such as those subject to erosion, high winds, storm surge, flooding, or sea level rise.

c. Land Use Plan Requirements

The following are the Town of Pine Knoll Shores' policies/implementing actions for natural hazard areas. All policies are continuing activities.

Policies:

- P.38 The Town of Pine Knoll Shores supports the installation of properly engineered and permitted bulkheads, assuming this development is in compliance with all 15A NCAC 7H Guidelines.
- P.39 The Town of Pine Knoll Shores supports the US Army Corps of Engineers' regulations and the applicable guidelines of the Coastal Area Management Act and the use of local land use ordinances to regulate development within or immediately adjacent to freshwater swamps, marshes, and 404 wetlands.
- P.40 The Town of Pine Knoll Shores supports, but does not fund, relocation of structures endangered by erosion, if the relocated structure will be in compliance with all applicable policies and regulations.
- P.41 The Town of Pine Knoll Shores supports hazard mitigation planning. Refer to Appendix IV of the CAMA Core Land Use Plan for specific policies and implementing actions related to hazard mitigation. Any updates to the Land Use Plan or the Hazard Mitigation Plan will be cross-referenced to ensure consistency.
- P.42 The Town of Pine Knoll Shores supports the land use densities that are specified on pages 122-126 of the CAMA Core Land Use Plan. Through enforcement of the zoning ordinance, these densities will minimize damage from natural hazards and support the hazard mitigation plan.
- P.43 The Town of Pine Knoll Shores recognizes the significance of protecting the dune line along oceanfront portions of Pine Knoll Shores' planning jurisdiction. The Town of Pine Knoll Shores supports continued efforts to protect these dunes through the establishment of a proactive dune stabilization and protection program.

- P.44 The Town of Pine Knoll Shores supports the efforts of the Carteret County Shore Protection Office to establish a long term comprehensive approach to addressing beach renourishment throughout oceanfront portions of the Town's jurisdiction.
- P.45 The Town supports and relies on the Town's Emergency Operations Plan and the Carteret County Emergency Operations Plan for evacuation procedures and policies necessary as a result of natural disasters.

Implementing Actions:

- I.29 The Town of Pine Knoll Shores will continue to enforce its Floodplain Ordinance and participate in the National Flood Insurance Program. It will rely on the North Carolina Department of Environment and Natural Resources, Division of Coastal Management to monitor and regulate development in areas up to five feet above mean high water susceptible to sea level rise and wetland loss. Subdivision regulations will be enforced – requiring elevation monuments to be referenced so that floodplain elevations can be more easily determined. ***Schedule: Continuing Activity.***
- I.30 The Town of Pine Knoll Shores will monitor development proposals for compliance with Section 404 of the Clean Water Act and will continue to enforce local land use ordinances to regulate development within or adjacent to freshwater swamps, marshes, and 404 wetlands. ***Schedule: Continuing Activity.***
- I.31 In the event of a natural disaster, the Town of Pine Knoll Shores permits redevelopment of previously developed areas, provided redevelopment is in compliance with all applicable policies, regulations, and ordinances. Redevelopment, including infrastructure, should be designed to withstand natural hazards. ***Schedule: Continuing Activity.***
- I.32 The Town of Pine Knoll Shores will enforce the density controls in the zoning ordinance and subdivision ordinance in potential redevelopment areas to control growth intensity. ***Schedule: Continuing Activity.***
- I.33 In response to possible sea level rise, the Town of Pine Knoll Shores will review all local building and land use related ordinances and consider establishing setback standards, density controls, bulkhead restrictions, buffer vegetation protection requirements, and building designs which will facilitate the movement of structures. ***Schedule: Continuing Activity.***

I.34 The Town of Pine Knoll Shores will utilize the future land use map for development in accordance with applicable statutes as a guideline. This map is coordinated with the land suitability map and existing infrastructure maps. ***Schedule: Continuing Activity.***

I.35 The Town of Pine Knoll Shores will consider the development of a dune stabilization program through installation of properly installed sand fences or fence enclosures around the primary dune line along oceanfront portions of the Town. This effort will also involve the planting of sea oats and Bitter Panicum to increase the stability of the dune line. The Town has established a working group within the Board of Commissioners to determine the requirements for continued beach renourishment and dune stabilization. ***Schedule: Fiscal Year 2007-2008.***

7. Water Quality

a. *Management Goal*

The Town of Pine Knoll Shores will maintain, protect, and where possible enhance water quality in all coastal wetlands, rivers, streams, estuaries, and within the Town's canal system. This should include a means of addressing the complex problems of planning for increased development and economic growth while protecting and/or restoring the quality and intended uses of the basin's surface waters.

b. *Planning Objective*

The Town of Pine Knoll Shores will adopt policies for surface waters within the Town to help ensure that water quality is maintained if not impaired and improved if impaired.

c. *Land Use Plan Requirements*

The following provides the Town of Pine Knoll Shores' policies/implementing actions on water quality.

Policies:

P.46 The Town of Pine Knoll Shores supports the guidelines of the Coastal Area Management Act and the efforts and programs of the North Carolina Department of Environment and Natural Resources, Division of Coastal Management and the Coastal Resources Commission to protect the coastal wetlands, estuarine waters, estuarine shorelines, and public trust waters of the Town.

- P.47 The Town of Pine Knoll Shores supports conserving its surficial groundwater resources. The Town specifically supports the enforcement of Capacity Use Rules tied to the Castle Hayne Aquifer in an effort to ensure groundwater quantity and quality throughout the planning period and beyond.
- P.48 The Town of Pine Knoll Shores supports commercial and recreational fishing in its waters and will cooperate with other local governments and state and federal agencies to control pollution of these waters to improve conditions so that commercial and recreational fisheries will not be depleted. It also supports the preservation of nursery and habitat areas.
- P.49 The Town of Pine Knoll Shores opposes the disposal of any toxic wastes, as defined by the US Environmental Protection Agency's Listing of Hazardous Substances and Priority Pollutants (developed pursuant to the Clean Water Act of 1977), within its planning jurisdiction, or in waters adjacent to Town including the waters of the Atlantic Ocean.
- P.50 The Town of Pine Knoll Shores recognizes the value of water quality maintenance to the protection of fragile areas and to the provision of clean water for recreational purposes and supports the control of stormwater runoff to aid in the preservation of water quality. The Town of Pine Knoll Shores will support existing state regulations relating to stormwater runoff resulting from development (Stormwater Disposal Policy 15 NCAC 2H.001-.1003). Additionally, the Town supports all efforts of the NPDES Phase II stormwater rule as established by the Environmental Protection Agency, and enforced by the NCDENR.
- P.51 The Town of Pine Knoll Shores supports regulation of underground storage tanks in order to protect its groundwater resources and implementation of the Town's wellhead protection plan.
- P.52 The Town of Pine Knoll Shores supports the policy that all State of North Carolina projects should be designed to limit to the extent possible stormwater runoff into coastal waters. This will be addressed further through Phase II implementation plans.
- P.53 The Town of Pine Knoll Shores supports implementation of the White Oak River Basinwide Water Quality Management Plan.
- P.54 The Town of Pine Knoll Shores supports protection of those waters known to be of the highest quality or supporting biological communities of special importance, this especially applies to the Outstanding Resource Waters adjacent to the Roosevelt Natural Area and those within the Town's canal system. The Town has passed ordinances that address stormwater runoff from single-family and multi-family development sites.

- P.55 The Town of Pine Knoll Shores supports management of problem pollutants, particularly biological oxygen demand and nutrients, in order to correct existing water quality problems and to ensure protection of those waters currently supporting their uses. This effort should focus on residential development adjacent to the Town's canal system.
- P.56 The Town of Pine Knoll Shores opposes the installation of package treatment plants and septic tanks or discharge of waste in any areas classified as coastal wetlands, freshwater wetlands (404), or natural heritage areas. This policy does not apply to constructed wetlands. All decisions regarding the construction of these facilities should have the oversight of the Carteret County Health Department and the NCDENR.
- P.57 The Town of Pine Knoll Shores supports the following actions by the General Assembly and the Governor:
- (1) Sufficient state funding should be appropriated to initiate a program of incentives and grants to address pollution of our rivers from both point sources and nonpoint sources.
 - (2) An ongoing source of state funding should be developed to provide continuous support for an incentives grant program.
 - (3) The decision-making process for the award of incentives and grants should involve river basin organizations representing local governments and other interest groups in the review of all applications for state funding.
- P.58 The Town of Pine Knoll Shores does not support the location of floating homes within its jurisdiction. This policy exceeds state requirements.
- P.59 The Town of Pine Knoll Shores supports the following goals of the NC Coastal Habitat Protection Program (CHPP):
- (1) Document the ecological role and function of aquatic habitats for coastal fisheries.
 - (2) Provide status and trends information on the quality and quantity of coastal fish habitat.
 - (3) Describe and document threats to coastal fish habitat, including threats from both human activities and natural events.
 - (4) Describe the current rules concerning each habitat.
 - (5) Identify management needs.
 - (6) Develop options for management action using the above information.
- P.60 The Town of Pine Knoll Shores supports the efforts of the Carteret County Health Department to develop and maintain a system to identify and track the maintenance of all wastewater treatment facilities throughout the County. This

will have positive benefits not only for Pine Knoll Shores, but all communities along Bogue Banks.

- P.61 Any underground storage tank (UST) systems installed within 500 feet of a public water supply well or within 500 feet of any surface water classified as HQW, ORW, WS-I, WS-II, or SA must be secondarily contained.
- P.62 The Town of Pine Knoll Shores supports the removal of any abandoned or out-of-use USTs within the planning area.
- P.63 The Division of Water Quality has determined that current coastal stormwater rules have not adequately addressed water quality impacts to public trust waters and that local governments that strictly defer to state and federal rules to address water quality issues have impaired water quality issues. Their findings concluded that:
- (1) Areas that have impervious surfaces of 10% or greater contribute to local stream degradation;
 - (2) Biological diversity has been shown to drop when areas of impervious surface increases beyond 10-15%;
 - (3) Stream stability is affected when impervious surface approaches 10% in an area;
 - (4) Estuaries generally degrade when areas have 10% impervious surfaces;
 - (5) Sensitive fish species loss increases with 12% impervious surface.

The Town of Pine Knoll Shores supports efforts to improve water quality and will modify ordinances if required by the Division of Water Quality.

Implementing Actions:

- I.31 The Town of Pine Knoll Shores will comply with CAMA and NC Division of Environmental Management stormwater runoff regulations, and by coordinating local development activities involving chemical storage or underground storage tank installation/abandonment with the Town Emergency Management personnel and the Groundwater Section of the North Carolina Division of Environmental Management. The Town of Pine Knoll Shores will plan for an adequate long-range water supply. In the planning process, the Town will cooperate with all regional counties to protect water resources. **Schedule: Continuing Activity.**
- I.32 The Town of Pine Knoll Shores will enforce its zoning and subdivision regulations and its ordinances which address stormwater runoff to aid in protecting sensitive shoreline areas. The Town will also rely on state and federal agencies to promote and protect Bogue Sound, as well as other nursery and habitat areas adjacent to the Town. **Schedule: Continuing Activity.**

- I.33 The Town of Pine Knoll Shores will rely on the technical requirements and state program approval for underground storage tanks (40 CFR, Parts 280 and 281), and any subsequent state regulations concerning underground storage tanks adopted during the planning period. **Schedule: Continuing Activity.**
- I.34 The Town of Pine Knoll Shores will continuously enforce, through the development and zoning permit process, all current regulations of the NC State Building Code and North Carolina Division of Health Services relating to building construction and septic tank installation/replacement in areas with soils restrictions. **Schedule: Continuing Activity.**
- I.35 The Town of Pine Knoll Shores will implement the following actions through local ordinances to improve water quality (Note: these actions are especially significant in areas adjacent to the Roosevelt Natural Area and the Town's canal system):
- Use watershed-based land use planning
 - Minimize impervious cover in site design
 - Limit erosion during construction
 - Maintain coastal growth measures
 - Restoration of impaired waters
 - Reduction of nutrients in the Town's waters. **Schedule: Review local ordinances annually.**
- I.36 Preservation of wetlands is important to the protection/improvement of water quality in the Town of Pine Knoll Shores. The following will be implemented through zoning and/or subdivision regulations as required:
- (1) Coordinate all development review with the appropriate office of the US Army Corps of Engineers and the Soil Conservation Service. **Schedule: Continuing Activity.**
 - (2) Require that wetland areas be surveyed and delineated on all preliminary and final subdivision plats. **Schedule: Continuing Activity.**
 - (3) Consider cluster development in order to protect sensitive natural areas. A cluster development is defined as a development design technique that concentrates buildings in specific areas on a site to allow the remaining land to be used for recreation, common open space, and preservation of environmentally sensitive areas. **Schedule: Continuing Activity.**

- I.37 The Town of Pine Knoll Shores recognizes the impact that pet and animal waste can have on water quality. The Town has and enforces a pet waste pickup ordinance. **Schedule: Continuing Activity.**

8. Local Areas of Concern

a. *Management Goal*

The Town of Pine Knoll Shores will integrate local concerns with the overall CAMA goals and objectives.

b. *Planning Objective*

Local concerns extend well beyond CAMA concerns and should reflect a broad range of land use related issues.

c. *Land Use Plan Requirements*

The Town of Pine Knoll Shores will support the following policies/implementing actions that address areas of local concern.

Policies - Cultural, Historic, and Scenic Areas:

- P.64 The Town of Pine Knoll Shores will preserve and protect its valuable natural resources. Special attention will be given to the Roosevelt Natural Area, and adjacent Outstanding Resource Waters.
- P.65 The Town of Pine Knoll Shores will protect its waterfront/shoreline areas, estuarine shorelines and waterbodies, Town wide canal system, and valuable scenic areas.
- P.66 The Town of Pine Knoll Shores supports the local North Carolina Aquarium in their efforts to provide a regional education and cultural destination.

Implementing Actions - Cultural, Historic, and Scenic Areas:

- I.38 The Town of Pine Knoll Shores will continue to enforce its existing land development ordinances which were drafted with an aim of medium density residential development. Enforcement of this code will help minimize the effects of stormwater runoff as future development/redevelopment occurs. **Schedule: Continuing Activity.**
- I.39 The Town of Pine Knoll Shores will prepare a public recreational plan to address the growing needs of a predominantly year-round residential community. **Schedule: Fiscal Year 2008-2009.**

- I.40 The Town of Pine Knoll Shores will emphasize the protection of environmentally sensitive areas in the update of its public recreational plan (refer to Section V.B., Natural Systems Analysis). **Schedule: Fiscal Year 2009-2010.**

Policies - Economic Development:

- P.67 The Town of Pine Knoll Shores will maintain medium density residential development (4 dwelling units/acre in single family residential areas, and 8 dwelling units or less per acre in multi family residential areas) in order to maintain the desirable quiet residential character of the Town.
- P.68 The Town of Pine Knoll Shores supports tourism, including eco-tourism, as an important asset to overall economic development of Bogue Banks in general. The Town is primarily a residential community and supports/relies on commercial establishments in Atlantic Beach and Emerald Isle.
- P.69 The Town of Pine Knoll Shores encourages the use of advanced wastewater treatment technologies which will reduce the amount of land required for drain and repair fields. These systems should help reduce pollutants in stormwater runoff, which have historically contributed to water quality issues in waters adjacent to Town.
- P.70 The Town of Pine Knoll Shores, in conjunction with the Carteret County Health Department and NCDENR, requires the use of package treatment wastewater systems for effective economic development of multi-family, condotel, and motel/hotel development.
- P.71 The Town of Pine Knoll Shores does not oppose non-residential development, which is consistent with Town policies and ordinances. The Town does, however, want to focus this development in areas designated for commercial/office space development on the Town's future land use map.
- P.72 The Town of Pine Knoll Shores supports the economic development efforts of the Carteret County Tourism Development Authority.

Implementing Actions - Economic Development:

- I.41 The Town of Pine Knoll Shores will pursue funding through state and federal programs that are considered supportive of local economic development efforts:
- (1) The Town of Pine Knoll Shores is generally receptive to state and federal programs, particularly those which provide improvements to the Town. The Town will continue to fully support such programs, especially the NC Department of Transportation road and bridge improvement programs,

which are very important to the Town and its regional accessibility.
Schedule: Continuing Activity.

- (2) Examples of other state and federal programs that are important and supported by Pine Knoll Shores include: dredging and channel maintenance by the US Army Corps of Engineers, federal and state projects that provide efficient and safe boat access for sport fishing, public beach and coastal waterfront access grant funds, and the recently completed US Army Corps of Engineers Section 933 Beach Renourishment Project. **Schedule: Continuing Activity.**

- I.42 The Town of Pine Knoll Shores will continue to support the activities of the NC Division of Travel and Tourism; specifically, the monitoring of tourism-related industry, efforts to promote tourism-related commercial activity, and efforts to enhance and provide shoreline resources. **Schedule: Continuing Activity.**

Policies - General Health and Human Services Needs:

- P.73 The Town of Pine Knoll Shores opposes any low level military training flights that are not in compliance with the minimum safe altitudes for aircraft operations as described in the Federal Aviation Regulations, Part 71.
- P.74 The Town of Pine Knoll Shores opposes the location of new outlying landing fields within the regional vicinity of Pine Knoll Shores.
- P.75 The Town of Pine Knoll Shores supports a comprehensive recreational program to provide a broad range of recreation facilities for its citizens.
- P.76 The Town of Pine Knoll Shores will continue to implement its locally adopted Hazard Mitigation Plan in an effort to improve public safety in the event of a natural disaster.
- P.77 The Town of Pine Knoll Shores supports the provision of superior health care facilities within Carteret County, as well as Bogue Banks. Additionally, the Town supports the development of facilities and services targeted at the aging population, to include areas within the Town's jurisdiction.
- P.78 The Town of Pine Knoll Shores will continue to provide mutual aid in the form of Fire/EMS service with adjacent communities, should this need arise. The Town is aware it operates the most comprehensive and modernized fire/EMS facility along Bogue Banks, and will continue to utilize this resource to further improve public safety throughout Pine Knoll Shores and neighboring jurisdictions. The Town has recently signed an updated county-wide cooperative agreement.

Implementing Actions - General Health and Human Services Needs:

- I.43 Floodplain regulation is a concern in the Town of Pine Knoll Shores. To accomplish protection of public health and service needs, Pine Knoll Shores will continue to enforce the flood hazard reduction provisions of the Town Pine Knoll Shores Land Development Ordinances. ***Schedule: Continuing Activity.***
- I.44 The Town of Pine Knoll Shores will continue to rely on the support of the Coastal Regional Solid Waste Management Authority for solid waste collection. The Town will also continue to utilize privatized curb side waste removal services. ***Schedule: Continuing Activity in each Fiscal Year.***
- I.45 The Town of Pine Knoll Shores will continue to promote the recycling of all recyclable materials. This effort will be handled by the Town's private waste collection service. ***Schedule: Continuing Activity in each Fiscal Year.***
- I.46 The Town of Pine Knoll Shores will research options for development, design, and financing of indoor, multi-use recreation facility. ***Schedule: Fiscal Year 2011-2012.***