

Town of Topsail Beach, NC

2022 Land Use Plan



Draft

ACKNOWLEDGEMENTS

Town of Topsail Beach

820 S. Anderson Blvd.

Topsail Beach, NC, 28445

Town Board of Commissioners

Steven Smith, Mayor

Morton Blanchard, Mayor Pro-Tem

Joe Bell

Frank Braxton

John Gunter

Tim Zizack

Planning Board

Cathi Litcher, Chairperson

Randy Leeseberg, Vice-Chairperson

Carrie Hewitt

William Mickey

W. James Ormond

Town Staff

Doug Shipley, Town Manager

Christina Burke, Assistant Town Manager

Stephanie Moore, Town Planner

Steve Coggins, Town Attorney

Technical Assistance

Cape Fear Council of Governments

Wes MacLeod, AICP, ASLA

Sam Shore, MPA, CFM

Table of Contents

ACKNOWLEDGEMENTS	I
TABLE OF CONTENTS	II
CHAPTER 1: INTRODUCTION	1-1
INTRODUCTION TO THE LAND USE PLAN PROCESS	1-1
THE FUNCTION AND UTILITY OF THE LAND USE PLAN	1-1
THE CAMA PERMIT PROCESS	1-2
<i>What Qualifies as a CAMA Regulated Development Project?</i>	1-2
<i>What is an Area of Environmental Concern?</i>	1-2
<i>What are the types of CAMA Permits?</i>	1-3
PUBLIC INVOLVEMENT AND COMMUNITY SURVEY RESULTS	1-4
<i>Community Survey Results</i>	1-5
<i>Public Input Meeting Results</i>	1-8
<i>Community Concerns and Aspirations</i>	1-10
VISION STATEMENT	1-10
HOW TO USE THIS PLAN	1-11
CHAPTER 2: COMMUNITY PROFILE	2-1
INTRODUCTION	2-1
POPULATION CHARACTERISTICS AND TRENDS	2-1
<i>Permanent/Year-Round Population</i>	2-1
<i>Population By Age</i>	2-3
<i>Current Seasonal Population Estimates</i>	2-4
<i>Seasonal Estimate by Housing & Vacation Unit</i>	2-5
<i>Day-Trip Visitors</i>	2-6
<i>Population Projections</i>	2-6
HOUSING CHARACTERISTICS AND TRENDS	2-7
<i>Housing Units by Type</i>	2-8
<i>Housing Tenure</i>	2-8
<i>Housing Unit Trends</i>	2-9
<i>Housing Value</i>	2-10
ECONOMIC INDICATORS	2-11
<i>Income</i>	2-11
<i>Employment</i>	2-13
SUMMARY	2-14

CHAPTER 3: NATURAL SYSTEMS ANALYSIS.....	3-1
AREAS OF ENVIRONMENTAL CONCERN	3-1
ESTUARINE AND OCEAN SYSTEM.....	3-2
<i>Estuarine Water</i>	3-2
<i>Estuarine Shoreline</i>	3-2
<i>Coastal Wetlands</i>	3-2
<i>Public Trust Areas</i>	3-3
OCEAN HAZARD SYSTEM	3-4
<i>Ocean Erodible Area</i>	3-4
<i>Inlet Hazard Area</i>	3-4
<i>Unvegetated Beach Area</i>	3-4
SOIL CHARACTERISTICS.....	3-5
HAZARDS	3-5
<i>Flood Hazard Areas</i>	3-5
<i>FEMA Flood Insurance</i>	3-7
<i>Coastal Barrier Resources System</i>	3-8
<i>Hurricanes</i>	3-8
<i>Storm Surge Areas</i>	3-9
<i>Nor'easters</i>	3-10
<i>Tornadoes/Waterspouts</i>	3-10
<i>Urban Fires</i>	3-11
WATER QUALITY	3-11
<i>Shellfishing and Primary Nursery Areas</i>	3-12
<i>Non-Coastal Wetlands</i>	3-14
<i>Water Supply and Wellhead Protection Areas</i>	3-16
ENVIRONMENTALLY FRAGILE AREAS	3-16
<i>Natural Heritage Areas</i>	3-16
<i>Areas Containing Endangered Species</i>	3-16
GOALS, OBJECTIVES, AND POLICIES	3-17
<i>Introduction</i>	3-17
<i>Natural Hazard Areas</i>	3-17
<i>Water Quality and Natural Environment</i>	3-19
 CHAPTER 4: ANALYSIS OF COMMUNITY FACILITIES	 4-1
WATER SUPPLY SYSTEM STATUS AND TRENDS	4-1
<i>Water Supply System</i>	4-1
<i>Water Demand Status and Trends</i>	4-1
WASTEWATER SYSTEM STATUS	4-2
STORMWATER SYSTEM.....	4-2
TRANSPORTATION SYSTEMS.....	4-3
<i>Surf City Bridge</i>	4-3
<i>Traffic Counts</i>	4-3
<i>Non-Motorized Transportation</i>	4-4

EMERGENCY SERVICES	4-4
RECREATIONAL OPPORTUNITIES, PUBLIC ACCESS FACILITIES, AND BOATING ACCESS FACILITIES	4-4
<i>Parks and Recreation</i>	4-4
<i>Existing Public Access Sites</i>	4-5
GOALS, OBJECTIVES, AND POLICIES	4-7
<i>Introduction</i>	4-7
<i>Infrastructure Carrying Capacity</i>	4-7
<i>Public Access and Recreation</i>	4-10
CHAPTER 5: LAND USE AND GROWTH MANAGEMENT	5-1
EXISTING LAND USE ANALYSIS	5-1
<i>Source of Existing Land Use Analysis and Map</i>	5-1
<i>Land Uses Identified in the Town</i>	5-1
<i>Existing Land Use</i>	5-1
BUILD-OUT ANALYSIS	5-2
<i>Identification of Land Use Conflicts</i>	5-3
FUTURE LAND USE	5-3
<i>Future Land Use Classification Guidelines</i>	5-4
<i>Implementation</i>	5-4
<i>How to Use the Future Land Use Map and Guidelines</i>	5-4
GOALS, OBJECTIVES, AND POLICIES	5-7
<i>Introduction</i>	5-7
<i>Land Use Compatibility</i>	5-7
CHAPTER 6: TOOLS FOR MANAGING DEVELOPMENT.....	6-1
EXISTING DEVELOPMENT MANAGEMENT PROGRAM	6-1
<i>Topsail Beach's Land Development Regulations</i>	6-1
ACTION PLAN AND IMPLEMENTATION SCHEDULE.....	6-2
APPENDIX A: DEFINITIONS AND ACRONYMS.....	A-1
DEFINITIONS OF ACTION AND DESCRIPTIVE WORDS USED IN POLICIES.....	A-1

LIST OF TABLES AND FIGURES

TABLE 2.1 POPULATION TRENDS 1990-2020.....	2-2
TABLE 2.2 NC MUNICIPAL BEACH POPULATION TRENDS.....	2-3
TABLE 2.3 PERMANENT POPULATION BY MEDIAN AGE.....	2-4
TABLE 2.4 PEAK SEASONAL OVERNIGHT POPULATION ESTIMATE (2020).....	2-5
TABLE 2.5 DAY TRIP VISITORS	2-6
TABLE 2.6 30-YEAR POPULATION PROJECTION	2-7
TABLE 2.7 HOUSING UNITS BY TYPE	2-8
TABLE 2.8 HOUSING TENURE	2-9
TABLE 2.9 OWNER OCCUPIED HOUSING VALUE	2-10
TABLE 2.10 HOUSEHOLD INCOME.....	2-12
TABLE 2.11 COMMUTING PATTERNS	2-13
TABLE 2.12 MEANS OF TRANSPORTATION TO WORK	2-14
TABLE 2.11 DEMOGRAPHIC CHARACTERISTICS OF SELECTED NORTH CAROLINA BEACH COMMUNITIES.....	2-15
TABLE 3.1 UNITS WITHIN A MAPPED FLOOD ZONE	3-5
TABLE 3.2 JURISDICTIONAL EXPOSURE TO FLOOD HAZARD	3-6
TABLE 3.3 UNITS WITHIN A MAPPED FLOOD ZONE – PRELIMINARY MAPS	3-6
TABLE 3.4 JURISDICTIONAL EXPOSURE TO FLOOD HAZARD – PRELIMINARY MAPS	3-6
TABLE 3.5 FLOOD INSURANCE POLICIES AND LOSS STATISTICS.....	3-7
TABLE 3.6 HURRICANES AND THE SAFFIR-SIMPSON SCALE.....	3-9
TABLE 3.7 OPERATIONAL ENHANCED FUJITA TORNADO SCALE.....	3-10
TABLE 3.8 TYPES OF NON-COASTAL WETLANDS IN SURF CITY.....	3-15
TABLE 4.1 PUBLIC ACCESS LOCATIONS	4-5
TABLE 5.1 EXISTING LAND USE	5-2
TABLE 5.2 VACANT LAND IN TOPSAIL BEACH BY ZONING DISTRICT.....	5-2
TABLE 6.1 SCHEDULE FOR IMPLEMENTING RECOMMENDED ACTIONS	6-2
FIGURE 2.1 PERMANENT POPULATION BY AGE GROUP – TOPSAIL BEACH.....	2-4
FIGURE 2.2 YEAR HOUSING STRUCTURE BUILT – TOPSAIL BEACH	2-9
FIGURE 2.3 NEW SINGLE FAMILY/DUPLEX CONSTRUCTION PERMITS (2011 – 2020) – TOPSAIL BEACH.....	2-10
FIGURE 2.4 MEDIAN VALUE OF OCCUPIED HOUSING UNITS – NC COASTAL COMMUNITIES.....	2-11
FIGURE 2.5 MEDIAN HOUSEHOLD INCOME – NC COASTAL COMMUNITIES	2-12
FIGURE 2.6 MEAN TRAVEL TIME TO WORK (MINUTES)	2-13
FIGURE 3.1 TOPSAIL BEACH AREA SHELLFISH CLOSURES	3-13
FIGURE 4.1 AVERAGE DAILY WATER USE IN MILLION GALLONS PER DAY (MGD)	4-2
FIGURE 4.2 SURF CITY BRIDGE.....	4-3

Chapter 1: Introduction

INTRODUCTION TO THE LAND USE PLAN PROCESS

The Town of Topsail Beach, like most coastal communities in southeastern North Carolina and northeastern South Carolina, has seen growth and development in its jurisdiction over the last thirty years. This increase in development has been primarily attributed to increases in tourism and increases in the retiree population relocating to coastal areas. The desire to live in and visit coastal areas has inevitably led to certain types of development and land uses that place stress on those very characteristics that make the coast a desirable place to be. Land use planning can play an integral part in avoiding or mitigating some of the negative side effects of development by anticipating potential problems and establishing management goals and policies that align with the desires of the citizenry.

The U.S. Congress initiated the first structured form of coastal land use planning in the country with the passage of the Coastal Zone Management Act (CZMA) in 1972. CZMA encouraged coastal states to preserve their coasts by establishing programs to manage and protect coastal resources. North Carolina passed its Coastal Area Management Act, known as CAMA, in 1974. CAMA established the Coastal Resources Commission (CRC) to guide growth and development in the 20 coastal counties. CAMA also provided a program framework for regulating development activity in coastal areas and required local land use planning in the 20 coastal counties.

THE FUNCTION AND UTILITY OF THE LAND USE PLAN

There are four key functions of a land use plan. First, a land use plan provides a source of information for establishing public policy and making growth and development decisions. The planning process helps provide knowledge and understanding of the local area's population, demographics, economy, natural environment, community capacity for growth, and overall development trends. Second, a plan's policies provide guidance for future decision-making on public and capital investment, as well as zoning and other development regulations. The third function of a plan is to provide a preview or predictor of future government action. The public, local government staff, and developers are better informed and able to understand and predict how a government will make decisions if a plan is in place and its policies are followed. The fourth function of a plan and the ongoing planning process is to provide the general public, the Planning Board, staff, and elected officials the opportunity to address and discuss issues important to the local area and to shape policies and regulations to best meet the goals of the community.

Topsail Beach's Land Use Plan provides guidance to local decision-makers seeking to achieve the community's long-term vision. This process allows public officials, staff, and other stakeholders to be proactive rather than reactive in maintaining Topsail Beach's status as a highly desirable coastal community for residents and visitors alike compared to its peers. This plan builds on the previous land use plans adopted by Topsail Beach, most recently updated in 2015. It encompasses all geographic areas in the community; considering issues of future land use, 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 and beyond.

THE CAMA PERMIT PROCESS

The Coastal Area Management Act (CAMA) requires permits for any development in specially designated areas called Areas of Environmental Concern (AEC). In Topsail Beach, AECs are generally those areas that are in close proximity to water (ocean, river, creeks, etc.) or marsh (wetlands). A CAMA permit must be acquired if a development project meets all of the following conditions:

- The project is located within one of the 20 coastal counties of North Carolina;
- The project is considered "development" under CAMA;
- The project is within, or affects, an Area of Environmental Concern established by the Coastal Resources Commission (CRC);
- The project does not qualify for an exemption.

WHAT QUALIFIES AS A CAMA REGULATED DEVELOPMENT PROJECT?

Besides construction of residential and commercial buildings in an Area of Environmental Concern, "development" also generally includes activities such as dredging or filling coastal wetlands or waters, and construction of marinas, piers, docks, bulkheads, oceanfront structures and roads. The Coastal Area Management Act (NCGS 113A-103(5)(a)) defines a development project 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".

WHAT IS AN AREA OF ENVIRONMENTAL CONCERN (AEC)?

According to the Division of Coastal Management's (DCM) CAMA Handbook for Development in Coastal North Carolina, protecting and managing Areas of Environmental Concern is the basis for the CAMA permitting program. An AEC is generally an area of natural significance, which requires special management because it may be easily destroyed by erosion, flooding, or human activity; or it may have environmental, social, economic, or aesthetic value that make it a valuable resource. The CRC designates particular areas as AECs to protect them from unmanaged development, which may cause irreversible damage to property, public health, or the environment. AECs cover almost all 'navigable' coastal waters and about 3 percent of the land in the 20 coastal counties. As mentioned earlier, in Topsail Beach the AECs are generally those areas that are in close proximity to water (ocean, river, creeks, etc.) or marsh (wetlands).

The Coastal Resources Commission has established the following categories of AECs:

- The Estuarine and Ocean System (coastal wetlands, public trust and estuary waters, and estuarine shoreline);
- The Ocean Hazard System (ocean erodible setback area, un-vegetated beach area, and inlet hazard area);
- Public Water Supplies (small surface water supply watershed and public water supply well-fields); and

- Natural and Cultural Resource Areas (coastal complex natural areas, coastal areas that sustain remnant species, unique coastal geologic formations, significant coastal archaeological resources and significant coastal historical archeological resources).

A development project is likely in an AEC if it 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 (e.g. within 60'-120');
- near an inlet;
- within 30 feet of the normal high water level of areas designated as inland fishing waters by the N.C. Marine Fisheries Commission and the N.C. Wildlife Resources Commission;
- near a public water supply; or
- within 575 feet of Outstanding Resource Waters defined by the Environmental Management Commission.

For more information on the CAMA Handbook for Development in Coastal North Carolina and for mitigating steps required during development, please visit the Division of Coastal Management website.

WHAT ARE THE TYPES OF CAMA PERMITS?

There are currently three types of development permits: major permits, general permits, and minor permits. The Division of Coastal Management (DCM) makes permit decisions after considering agency and public comments, and after determining whether a proposed project meets CRC rules and is consistent with the policies of the local government's land use plan.

The CAMA permit system is divided into major and minor permits based on the potential impacts and size of a development project.

Major permits are necessary for activities that require other state or federal permits (such as stormwater and sedimentation control), for projects that cover more than 20 acres, or for construction covering more than 60,000 square feet. Applications for major permits are reviewed by 10 state and 4 federal agencies before a decision is made.

Minor permits are required for projects, such as single-family houses, that do not require major permits or general permits. Permits are reviewed, issued and administered to CRC standards by local governments under contract with the Division of Coastal Management.

General permits are used for routine projects that usually have little or no threat to the environment.

Some development may be authorized by an exemption certificate. Section 103(5)(b) of the Coastal Area Management Act exempts the following activities from permitting 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 N.C. Utilities Commission rules;
- agricultural or forestry production that doesn't involve the excavation or filling of estuarine or navigable waters or coastal marshland (Note: these activities are not exempt from permitting requirements under the state's Dredge and Fill Law);
- agricultural or forestry ditches less than 6 feet wide and 4 feet deep;
- emergency maintenance and repairs when life and property are in danger; or
- the construction of an accessory building usually found with an existing structure, if no filling of estuarine or navigable waters or coastal marshland is involved.

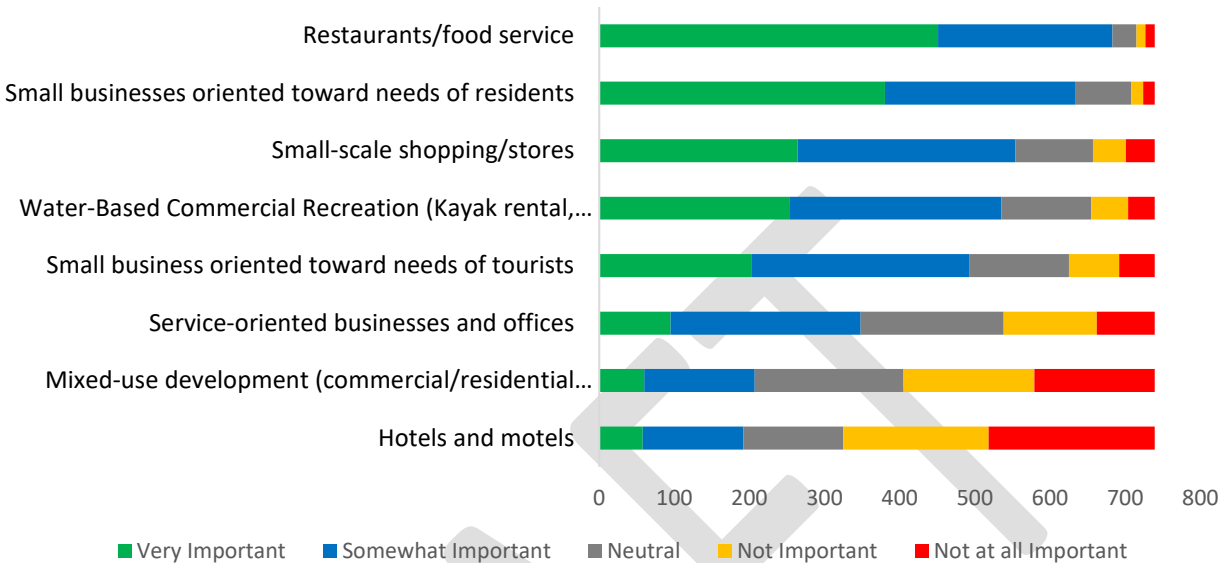
PUBLIC INVOLVEMENT AND COMMUNITY SURVEY RESULTS

Formulating policies based on community consensus covering a wide range of issues relies on adequate public involvement. In addition to providing the public an opportunity to provide their input regarding the future of the community, a land use plan is intended to inform the public on the importance of planning, the role their town government plays in managing development, the possible impacts of changes in land use, and the utility of preserving natural resources.

The most significant source of public input came as a result of the community survey. Roughly 740 respondents completed the survey, approximately 80% of whom were property owners or residents. The survey was available primarily online but was also available in hard copy format. The survey was designed to determine the most significant priorities for Topsail Beach and to reaffirm public opinion regarding growth management and development.

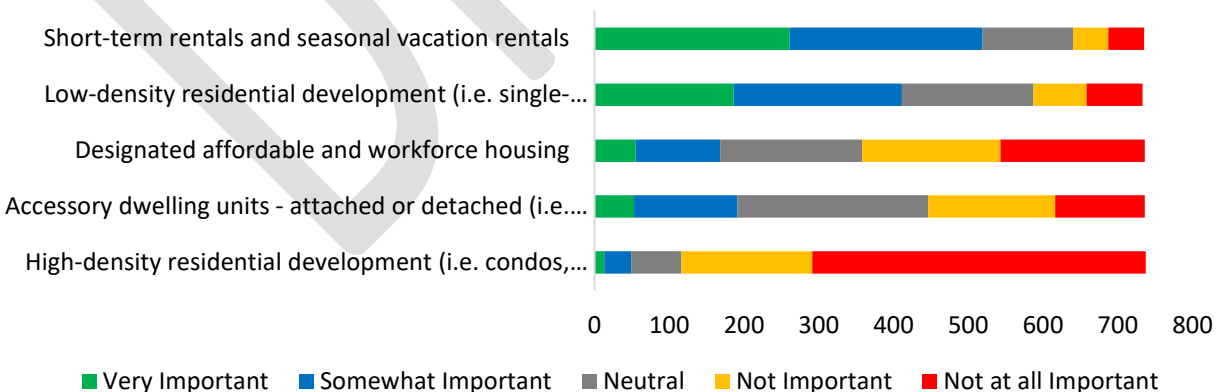
COMMUNITY SURVEY RESULTS

Question 1: How important are the following business and commercial activities to the future of Topsail Beach?

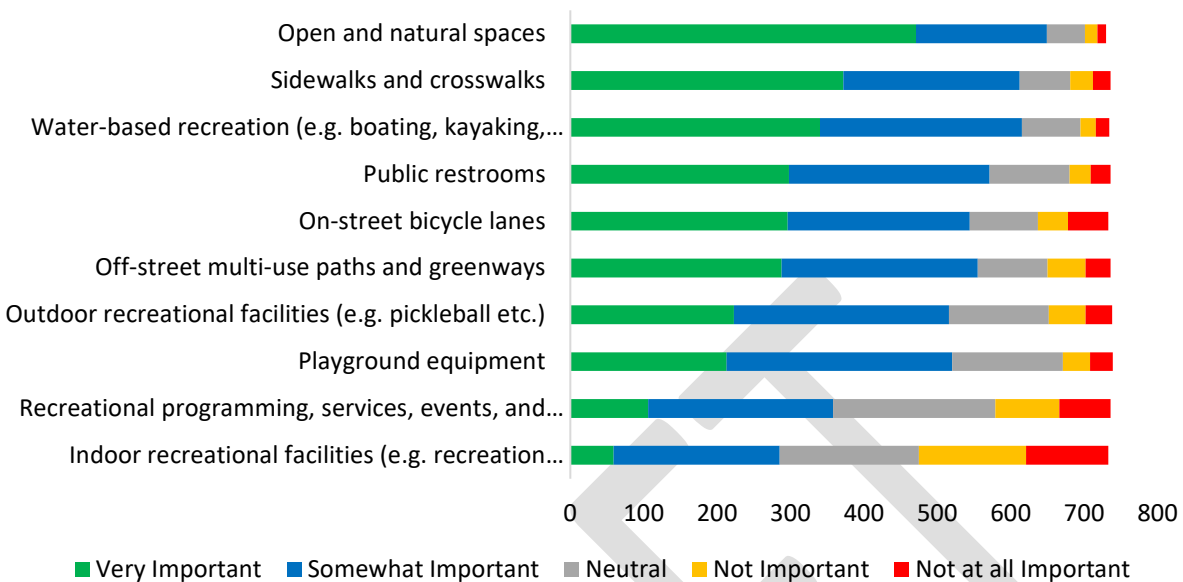


When asked how important certain business and commercial activities are to the future of Topsail Beach, the majority of respondents identified restaurants, small business oriented towards residents' needs, and small-scale shopping as the most important. The least important option in the eyes of respondents was hotels/motels.

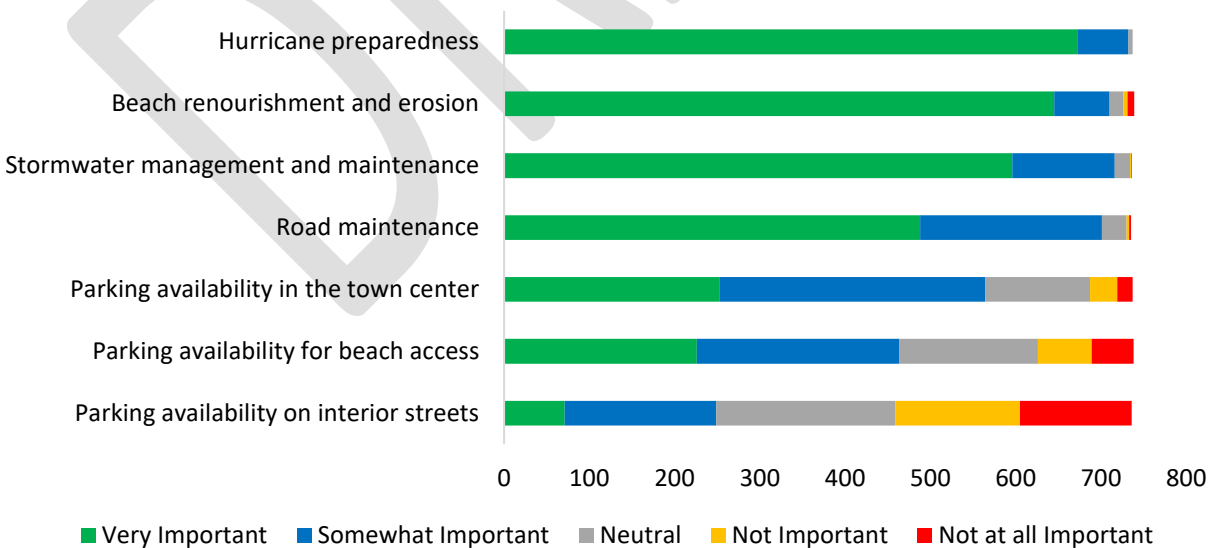
Question 2: How important are the following residential development and housing types to the future of Topsail Beach?



When asked how important certain types of residential development are to the future of Topsail Beach, the majority of respondents chose short-term/seasonal vacation and low-density housing as the most important. The least important option in the eyes of respondents was high-density development such as condos and townhomes.

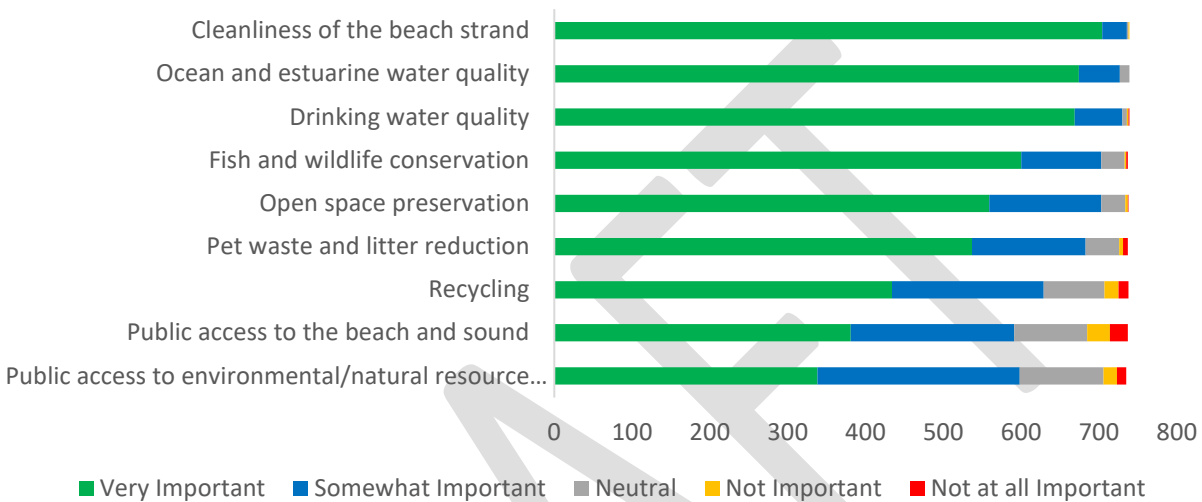
Question 3: How important are the following recreational activities to the future of Topsail Beach?

The three most important recreational activities to the future of the Town as identified by survey respondents are open and natural spaces, sidewalks for pedestrians, as well as water-based recreation. Overall, respondents do not find it as important to have recreational programming or indoor recreational facilities.

Question 4: How important are the following transportation and infrastructure issues to the future of Topsail Beach?

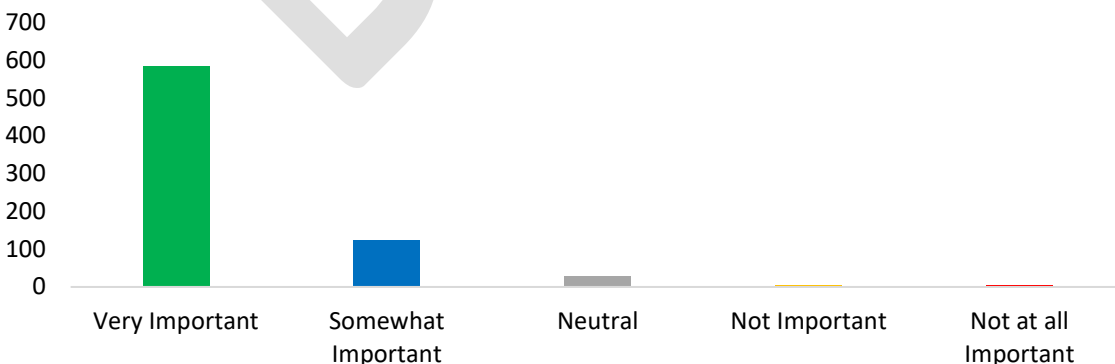
The survey asked respondents to select the most important transportation and infrastructure issues facing Topsail Beach. Overall, results showed that the most important issues include hurricane preparedness, beach renourishment/erosion, and stormwater management/maintenance. Parking availability on interior streets was ranked as being the least important.

Question 5: How important are the following environmental and natural resource issues to the future of Topsail Beach?



When asked how important certain environmental and natural resource issues are to the future of Topsail Beach, respondents ranked cleanliness of the beach strand, ocean water quality, and drinking water quality as the most important. While the lowest-ranked option was public access to environmental and natural resource sites, every option for this question was identified as being important by most respondents. These responses validate an emphasis on preserving, enhancing, and providing access to environmental and natural resources in and around the Town.

Question 6: How important do you think land use policies and development guidelines are in managing growth and development patterns in Topsail Beach?



Survey respondents were asked about the importance of development regulations. Nearly 80% of individuals felt that such regulations are very important to establishing desirable development patterns in Topsail Beach, supporting the value of planning efforts in the Town.

Question 7: Which statement best describes your relationship to the Town of Topsail Beach?

Approximately 80% of survey respondents identified themselves as property owners, business owners, and permanent residents. The remainder of those that responded included seasonal visitors and future residents.

Question 8: What is your favorite thing about Topsail Beach?

The survey asked respondents to identify their favorite thing about Topsail Beach in an open-ended question. The respondents indicated that their favorite things about the Town included its small-town atmosphere and beautiful beach.

Question 9: If you could improve one thing about Topsail Beach, what would it be?

Respondents were asked if they could improve one thing about Topsail Beach, what would it be? Popular responses included improving bicycle and pedestrian infrastructure, adding options for dining out and grocery shopping, and limiting future development.

Question 10: Please provide any other comments you may have.

Respondents were asked to provide any additional comments. Common themes included support for maintaining the small-town character of the community, as well as comments for and against paid parking. Additionally, respondents expressed a desire to see reutilization of vacant commercial structures in the Town center.

PUBLIC INPUT MEETING RESULTS

Public Input Meeting was held on March 15, 2022, with approximately 20 citizens and public officials in attendance. The meeting was held to gather input about the public's concerns and aspirations for the future of Topsail Beach. The participants were asked to identify relevant topics within three categories: assets, issues, and desires. These concepts were listed on posters which were posted on the walls around the meeting space. Next, participants received 9 stickers that were to be used to identify the three most important topics within each category.

The results of the facilitated discussion and prioritization process are provided below. The responses are sorted by the vote tally each received, starting with the responses receiving the highest number of votes.

Assets

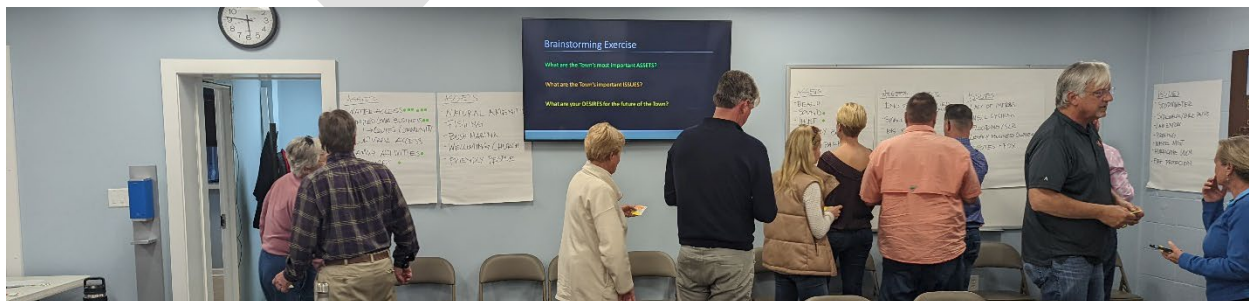
- Water access – 9
- Assembly building – 6
- Limited commercial business/quiet community – 6
- Town management – 6
- BIS fund – 5
- Beach – 4
- Sound – 2
- Inlet – 2
- Natural amenities – 2
- Bush Marina – 2
- Family activities – 2
- Contained growth – 1
- Town park – 1
- Welcoming church – 1
- Friendly people – 1
- End of road - limited access – 0
- Small-town feel – 0
- Fishing – 0

Issues

- Flooding/sea level rise – 12
- Legacy business owners – 9
- Stormwater – 7
- Sidewalks/bike paths – 6
- Parking – 4
- Waste management – 3
- Coyotes & foxes – 3
- Hurricane vulnerability – 2
- Law enforcement – 1
- Lack of infrastructure – 1
- Well systems – 1
- Fire protection – 0

Desires

- More restaurants – 9
- Small grocery store – 8
- Downtown beautification – 5
- Maintain beach – 4
- Curbside recycle – 4
- Enforce zoning – 4
- No run down buildings – 4
- Maintenance of current path – 3
- Maintain inlet – 3
- Bike lane to Surf City – 3
- Organized parking – 2
- Food trucks – 1
- Recycling at beach accesses – 1
- Ship store w/more supplies – 1
- Improve marina – 0
- Walking path – 0
- No development at the end of the island – 0



COMMUNITY CONCERNS AND ASPIRATIONS

In compliance with the 15A NCAC 7B requirements, the community concerns and aspirations are outlined below. Topsail Beach's top five public input priorities were developed from the results of the public input meeting and community survey. It should be noted that these priorities are goals and intentions of the respondents and are to serve merely as a resource. These priorities are by no means a mandate for future funding or policy change. The priorities are listed in order of significance.

Top 5 Public Input Priorities

1. Preserve the beach and sound for their recreational value and natural beauty, which provide Topsail Beach with its identity.
2. Encourage investment into the maintaining and enhancing the central business district, particularly through additional small-scale shops and food service options.
3. Maintain the Town's small-town character, generally consisting of low density single-family residential development.
4. Ensure the future resilience of the Town through coastal storm damage reduction and beach protection efforts.
5. Enhance bicycle and pedestrian facilities to provide safe options for non-motorized transportation and recreation.

VISION STATEMENT

The Vision Statement of Topsail Beach is intended to be a general and brief statement about the Town's main preferences for future growth. The Vision Statement should be based on a consensus of the views of community citizens and community representatives.

To maximize the utility and scope of the Vision Statement of Topsail Beach, community priority issues, local citizen input, and the preferences of the local government were all considered during the statement creation process. The vision statement is a variation on a previous statement from Topsail Beach's 2005 Land Use Plan, reflecting the Town's dedication to maintaining the community that residents and visitors alike have come to value.

The Town of Topsail Beach shall remain a peaceful, family-friendly community to live, work, and visit while maintaining its natural island beauty.

HOW TO USE THIS PLAN

Topsail Beach's 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 Town Board of Commissioners, 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 non-regulatory in nature and will be addressed through the Town's capital planning 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 and actions of elected and appointed officials and the Town's administrative staff.

For the Town Board of Commissioners, the 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 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 help guide decisions on future ordinances and zoning decisions. Moreover, North Carolina General Statute 160D-604 requires the Planning Board to provide a recommendation on any zoning regulation amendment to Town Board of Commissioners. These recommendations must consider consistency with adopted plans. General Statute 160D-605 requires the Town Board of Commissioners to adopt a statement analyzing consistency with adopted plans when voting to approve or deny a change to zoning regulations. General Statute 160D-501 also requires the adoption and reasonable maintenance of a comprehensive plan or land use plan as a condition of adopting and applying zoning regulations. Amendments to this plan will be initiated and approved by the Town Board of Commissioners/Planning Board and plan amendments will require CRC's approval in accordance with its guidelines for land use plan amendments.

In addition to guiding development and zoning decisions, the Town Board of Commissioners should use the Land Use Plan's policies and recommended actions when making decisions on the Town's capital planning and its annual operating budgets. Other Town boards and committees will also use the 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 and map amendments, special use permits, variance requests, or the approval of site plans.

Another important use of the Land Use Plan is for consistency determinations by the Division of Coastal Management (DCM) for major permits issued pursuant to CAMA regulations. Other state and federal agencies will use the plan to determine the consistency of their projects and programs with the policies contained in this plan.

Lastly, 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 may 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 better understand the capabilities and limitations of their property or may assist community members in supporting or opposing projects within the community.

CHAPTER 2: COMMUNITY PROFILE

INTRODUCTION

This section of the Land Use Plan examines the community characteristics and related demographic and economic trends that should be considered when developing policies and long-term growth strategies.

In the following discussion, Topsail Beach is compared with North Carolina, Pender County, and other coastal communities to better interpret the information. These trends include the population, housing, and economic characteristics of Topsail Beach. This information will help inform Town officials and allow them to make growth management decisions based on knowledge of the Town's past, present, and future.

Permanent and seasonal population estimates can be used to help estimate development pressures that may impact coastal resources. Pressures from growth in population and development can also impact community infrastructure such as roads, drinking water, stormwater, etc. This information may be used as a resource by Town staff and officials to make informed growth management decisions.

Note: Data and statistics in the following section come from a number of sources. Figures from beyond 2020 are estimations and projections. Statistics from 2020 are sourced from the US Census Bureau/American Community Survey and the North Carolina Office of State Budget and Management (NCOSBM). The NCOSBM provides annual population figures for each municipality in the state. This number can often differ from those identified from the American Community Survey. Other statistics, facts, and figures related to age, housing, income, and employment are sourced from the US Census Bureau American Community Survey. Additional information is sourced from the Town of Topsail Beach and the Cape Fear Council of Governments where necessary.

POPULATION CHARACTERISTICS AND TRENDS

Permanent/Year-round Population

Coastal municipalities experience fluctuations in their population throughout a given year due to an influx of visitors and tourists during peak seasons such as summer. The impacts attributed to the changes in seasonal population can be difficult to determine due to the range of factors that must be considered in estimating the peak population. Since peak population can be difficult to estimate, the year-round population figures established by the state demographer and the US Census Bureau must be considered due to a lack of accurate and consistent methodology between municipalities to procure a seasonal population estimate. NOTE: The terms year-round population and permanent population are used interchangeably throughout the chapter.

In Topsail Beach, the permanent population has fluctuated each decade since 1990 (See Table 2.1). However, the trend is towards growth as the number of permanent residents has increased by a third since 1990. The populations of Topsail Beach and Pender County are expected to continue to increase as more people are attracted to the area and its unique coastal resources.

Table 2.1: Population Trends 1990 – 2020

Source: US Census Bureau Decennial Census

Year	Topsail Beach			Pender County		
	Total Pop.	Absolute Increase/Decrease	Percent Change	Total Pop.	Absolute Increase/Decrease	Percent Change
1990	346	-	-	28,855	-	-
2000	471	125	36.13%	41,082	12,227	42.37%
2010	368	-103	-21.87%	52,217	11,135	27.10%
2020	461	93	25.27%	60,203	7,986	15.29%
1990-2020	-	115	33.24%	-	31,348	108.64%

Overall, most of the coastal beach municipalities in NC have a growing year-round population (See Table 2.2). While some municipalities diverge from this trend, others have seen significant growth during this period. For example, Sunset Beach experienced significant growth largely due to additional residents gained through annexation. However, permanent population figures for coastal municipalities do not accurately convey development pressures as many housing units are built for seasonal, not year-round, use.

Table 2.2: NC Municipal Beach Population Trends

Source: US Census Bureau Decennial Census

Municipality	1990 Population	2000 Population	2010 Population	2020 Population	Percent Change 1990-2020	Percent Change 2010 - 2020
Atlantic Beach	1,938	1,781	1,495	1,364	-29.62%	-8.76%
Bald Head Island	78	173	158	268	243.59%	69.62%
Carolina Beach	3,630	4,701	5,706	6,564	80.83%	15.04%
Caswell Beach	175	370	398	395	125.71%	-0.75%
Duck	N/A	N/A	369	742	N/A	101.08%
Emerald Isle	2,434	3,488	3,655	3,847	58.05%	5.25%
Holden Beach	626	787	575	921	47.12%	60.17%
Indian Beach	153	95	112	223	45.75%	99.11%
Kill Devil Hills	4,238	5,897	6,683	7,656	80.65%	14.56%
Kitty Hawk	1,937	2,991	3,272	3,689	90.45%	12.74%
Kure Beach	716	1,507	2,012	2,191	206.01%	8.90%
Nags Head	1,838	2,700	2,757	3,168	72.36%	14.91%
North Topsail Beach	947	843	743	1,005	6.12%	35.26%
Oak Island	4,693	6,571	6,783	8,396	78.90%	23.78%
Ocean Isle Beach	548	426	550	867	58.21%	57.64%
Pine Knoll Shores	1,360	1,524	1,339	1,388	2.06%	3.66%
Southern Shores	1,447	2,201	2,714	3,090	113.55%	13.85%
Sunset Beach	311	1,824	3,572	4,175	1,242.44%	16.88%
Surf City	970	1,393	1,853	3,867	298.66%	108.69%
Topsail Beach	346	471	368	461	33.24%	25.27%
Wrightsville Beach	2,937	2,593	2,477	2,473	-15.80%	-0.16%
Pender County (2020)			60,203			
North Carolina (2020)			10,439,388			

Population by Age

From 2000 to 2019, the median age of residents in Topsail Beach has increased by roughly 6% (See Table 2.3). These trends indicate the majority of people living in Topsail Beach are of a mature demographic likely through in-migration by older individuals. Additionally, the 2019 median age of Topsail Beach, 58.8, is higher than Pender County and other communities on Topsail Island. In particular, Surf City's increasing proportion of mainland residents has caused the Town's median age to decrease.

Table 2.3: Permanent Population by Median Age

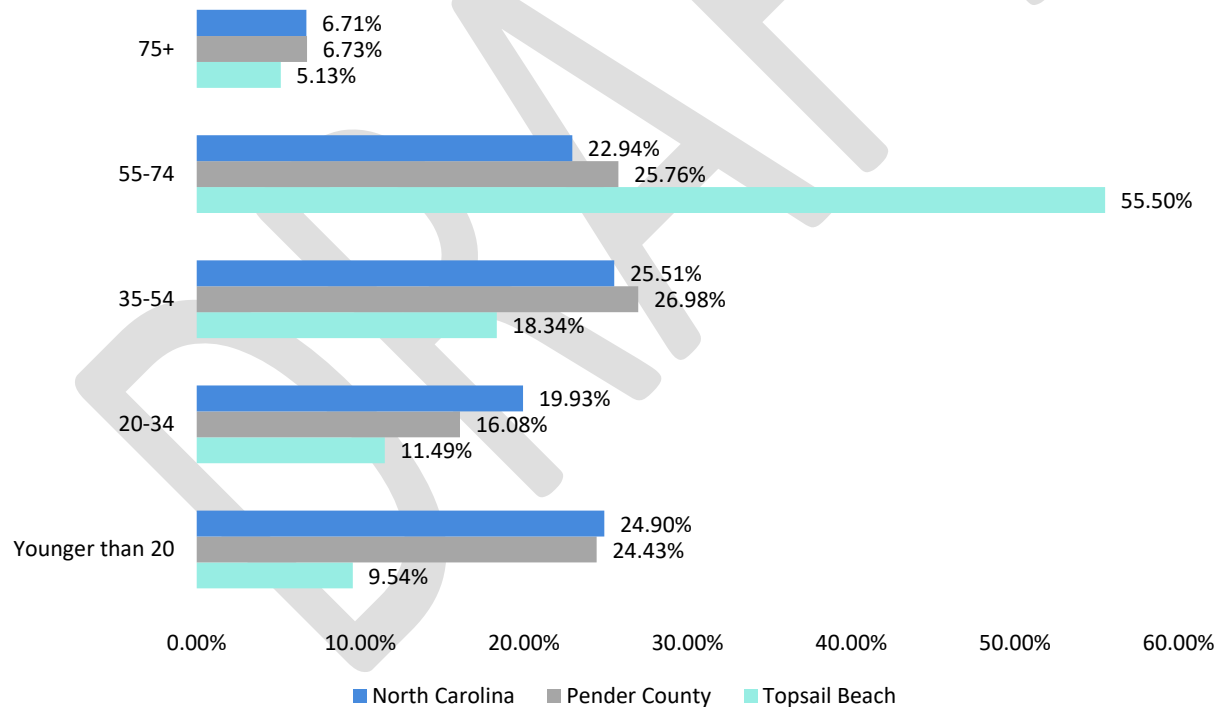
Source: U.S. Census Bureau 2000 Decennial Census and 2019 American Community Survey

	Median Age (2000)	Median Age (2019)	Percent Change
Topsail Beach	55.6	58.8	5.8%
Surf City	48.1	37.3	-22.5%
North Topsail Beach	45.1	57.2	26.8%
Pender County	38.8	42.7	10.1%

The permanent population of Topsail Beach consists mostly of individuals aged 55 and older. Accordingly, residents aged 55-74 account for the largest age group in Topsail Beach (See Figure 2.1) as is similar for many coastal communities in North Carolina. This age group makes up more than half of Topsail Beach's permanent residents. Roughly 20 percent of the population of Topsail Beach is aged 34 and below. This is much lower than Pender County but represents a relatively high proportion of the population when compared to more seasonal beach communities without access to a metropolitan area such as Wilmington or Jacksonville. Younger residents may choose to live in other areas for reasons including school, work, and housing costs.

Figure 2.1: Permanent Population by Age Group – Topsail Beach

Source: U.S. Census Bureau 2019 American Community Survey



Current Seasonal Population Estimates

When planning for infrastructure, housing, commerce, and recreation, it is important to consider the impact of vacationers, visitors, and temporary residents visiting the community on a seasonal basis. Typically, the seasonal population has the greatest impact on services and resources from Memorial Day to Labor Day.

Persons who reside in the Town limits for the majority of the year, or refer to it as their primary residence, make up the permanent population. In contrast, persons who temporarily vacation or visit for at least one night in the Town during the peak season comprise the seasonal population. The permanent population plus the seasonal population (including day-trippers) make up the peak population. The seasonal overnight population accounts for only the permanent and seasonal population and not day-trip visitors. Seasonal population estimates are difficult to calculate 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. While there is no standard method for tabulating seasonal population for a given jurisdiction, there are a few methods that can be used to estimate the population.

Seasonal Estimate by Housing & Vacation Unit

According to Census Bureau data, there were 1,119 vacant units in the Town in 2020. To establish the seasonal overnight population, average household size or persons per unit must be incorporated. One common technique calculates the seasonal overnight estimate on the number of housing units by determining what a typical occupancy rate might be and how many people occupy a housing unit on average. For the purposes of this analysis, vacant housing is treated similarly to seasonal and recreational housing in terms of the assumptions made about the number of persons per unit. The peak seasonal overnight estimate is derived by assuming 95% occupancy of the vacant housing units. Again, this estimate should not be viewed as exact. Calculating seasonal population figures is an imperfect science at best. The peak overnight seasonal population is more likely to be experienced on peak season holidays such as Memorial Day, July 4th, and Labor Day.

Table 2.4: Peak Seasonal Overnight Population Estimate (2020)

Source: U.S. Census Bureau 2020 Decennial Census and Cape Fear Council of Governments

Housing Units	Persons per Unit	Total
Permanently Occupied Housing (240)	1.92 + 2 guest per Unit	941**
Seasonal/Vacant Housing (1,119)	8	8,504
Hotel Units (197)	2	394
Total		9,839

*For the estimate, the following assumptions were used to calculate the total number of persons: 2 guests per permanent housing unit on average; 95 percent occupancy rate for seasonal/vacant housing; and 100 percent occupancy for hotel units.

**The permanent population and seasonal increase is based upon the Census Bureau population of 461 + 2 additional visiting persons per housing unit.

It is estimated that during the summer season, the peak seasonal overnight population in the Town of Topsail Beach can reach 9,839 people (See Table 2.4). This is more than 20 times higher than the permanent population of the Town. This number reflects popular holiday weekends such as Memorial Day, July 4th, as well as Labor Day. On weekdays as well as weekends with less visitors, the seasonal overnight population is likely to be closer to 75% of the peak estimate. Based on this assumption, the seasonal overnight population may be closer to 7,379 more frequently. These estimates are important for the analysis to gauge the greatest potential impacts on Town services. This information can be used to plan for situations that may exceed the capacity for various Town services such as water, waste collections, law enforcement, or general Town services. In addition, it is important to account for day-trip visitors as well which will be discussed in the following section.

Day-Trip Visitors

Another consideration when gauging seasonal population impact on community infrastructure is the effect of day-trippers. Unlike estimates of overnight visitors, day-trippers travel for brief stays in the community, typically for recreation. Day-trippers impact parking availability, traffic congestion, community services, and local businesses, especially during peak visitation seasons. Importantly, these visitors may also provide an additional revenue boost for local business establishments and can be a vital factor for attracting future businesses to serve both residents and visitors. While there is no standard method for calculating day-trippers, one of the best indicators for the number of day-trip visitors is the number of parking spaces available. It is assumed, on a typical peak day during the summer, the majority of vehicles visiting the Town for day-trip purposes are mostly full, at four persons per vehicle. Using data from the Town, the number of day-trippers is estimated as follows:

[1.5 shifts of parking x 275 permanent public parking spaces x 4 persons per vehicle = 1,650 day trip visitors per day]

One issue with estimating the peak number of visitors is the risk of double counting people as many daily visitors have possibly been accounted for in the assumptions used to estimate the seasonal population estimate. However, we do know that daytime visitors will need a place to park. There are 275 public parking spaces on Topsail Beach. Assuming there is an average of four people per car and there is an average of 1.5 cars occupying each parking space over the course of a day, it is estimated that an additional 1,650 daily visitors that travel by automobile may visit on any given summer weekend or peak season holiday (See Table 2.5).

Table 2.5: Day Trip Visitors

Source: Town of Topsail Beach, Cape Fear Council of Governments

Parking Spaces	Persons Per/Vehicle	Shifts of Parking	Total
275	4	1.5	1,650

Based on these figures, it is estimated that approximately 11,489 people visit, reside, or stay overnight within Town limits on a peak summer day.

Population Projections

Much like seasonal and peak population estimates, population projections can vary widely due to intervening factors such as the strength of the economy, availability of jobs, and housing prices. Population projections identify potential challenges and needs that may confront the community in the near future. Topsail Beach is located in Pender County, which was in the top quartile for growth among North Carolina counties over the course of the 2010s.

The state demographer's population growth estimate for Pender County indicates population increase will occur solely from migration into the county, while natural growth from births will be offset by the natural population decline from deaths. It is also assumed that this trend of all in-migration growth and zero natural population growth will be the same for Topsail Beach.

The Division of Coastal Management (DCM) recommends the use of the ratio approach to develop population projections for municipalities. The population projection for Topsail Beach can be determined by utilizing the NC Office of State Budget and Management (NCOSBM) population projections for Pender County. In 2020, Topsail Beach accounted for 0.77% of the population of Pender

County. The Division of Coastal Management requires that population projections be calculated for a 30-year horizon. However, for infrastructure planning and other calculations based upon these projections, it is wise to use only a twenty-year projection. The NCOSBM provides estimates through 2050.

Table 2.6: 30-Year Population Projection

Source: NCOSBM, U.S. Census Bureau 2020 Decennial Census, and Cape Fear Council of Governments

Year	2020	2025	2030	2035	2040	2045	2050
Topsail Beach	461	500	537	573	610	646	683
Pender County	60,203	64,950	69,689	74,426	79,163	83,900	88,638
Share (2020)	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%

The ratio method assumes that Topsail Beach will always account for 0.77% of the population of Pender County. Therefore, by using the equation below, the population projection for the Town can be calculated for any given year.

$$\text{Population of Topsail Beach} = 0.77\% \times \text{Population of Pender County}$$

In the year 2050:

$$683 \text{ (2050 pop.)} = 0.77\% \text{ (pop. ratio)} \times 88,638 \text{ (Pender Co. pop.)}$$

In 2035, the permanent population of Topsail Beach is projected to be 573 people. This is an increase of more than 110 residents or nearly 25%. In 2050, the permanent population is expected to be 683 people (See Table 2.6). Assuming this projection is accurate, the permanent population will increase by nearly 50% over the next thirty years. It is important to note that such a substantial increase would likely result from seasonal housing unit conversion to permanent/year-round use.

From 2010 to 2020, 93 new permanent residents were added to the Town's population (See Table 2.1) which equates to the addition of around 9 new permanent residents a year. If the population projections were calculated based upon the addition of 9 new residents a year, then the permanent population in 2050 would be 731. Utilizing either population projection method, it is expected that the population will increase by roughly 250 residents over the next 30 years.

HOUSING CHARACTERISTICS AND TRENDS

Understanding the current housing stock and how it has grown can help community members, elected officials, and planners get an overall picture of the range of housing opportunities available or needed in the Town. Other housing attributes such as the building year of the structure, owner versus renter occupation, and value, provide insight into the nature of the existing housing stock.

Housing Units by Type

From 2000 to 2019, the number of housing units in Topsail Beach increased by approximately 15% or 177 units (See Table 2.7). According to Census data, 205 new single-family units were constructed between 2000 and 2019. The number of multi-family units decreased over the same period, potentially due to the replacement of duplexes with single-family homes in addition to the redevelopment of the land formerly home to the Topsail Motel and Florida Apartments. The Town of Topsail Beach will continue to be predominantly occupied by single-family housing units. Compared with Pender County, Topsail Beach experienced a lower growth rate in total housing units from 2000 to 2019 due to the proportion of developable land remaining in each geography.

Table 2.7: Housing Units by Type

Source: U.S. Census Bureau 2000 Decennial Census and 2019 American Community Survey

Housing Units	Topsail Beach			Pender County		
	2000	2019	Percent Change	2000	2019	Percent Change
Total Housing Units	1,135	1,312	15.59%	20,798	29,030	39.6%
Single-Family Units	997	1,202	20.56%	12,491	20,778	66.3%
Multi-Family Units (2 or More Units)	135	106	-21.48%	942	1,564	66.0%
Other	3	4	33.33%	7,365	6,688	-9.2%

Housing Tenure

In 2020, nearly 20% of the housing units in Topsail Beach were occupied on a year-round basis. The occupancy rate of the Town is much lower compared to Pender County which has an occupancy rate of almost 75% as of 2020. The Town's occupancy rate is consistent with other coastal communities that have a large portion of seasonal/vacation homes.

In 2000, vacant/seasonal housing in Topsail Beach accounted for almost 78% of units and rose slightly to around 82% in 2020. This indicates a small decrease in the share of permanently occupied housing units (See Table 2.8). However, it is likely that the percentage of vacant housing units will slowly decrease due to a steady increase in permanent residents as well the conversion of seasonal units to full-time use through an increase in the number of retirement-age individuals and teleworkers able to take advantage of living at the beach full time. The share of housing units dedicated to seasonal use will continue to be greater than the share of units occupied year-round for the foreseeable future.

Table 2.8: Housing Tenure

Source: U.S. Census Bureau 2000 and 2020 Decennial Census

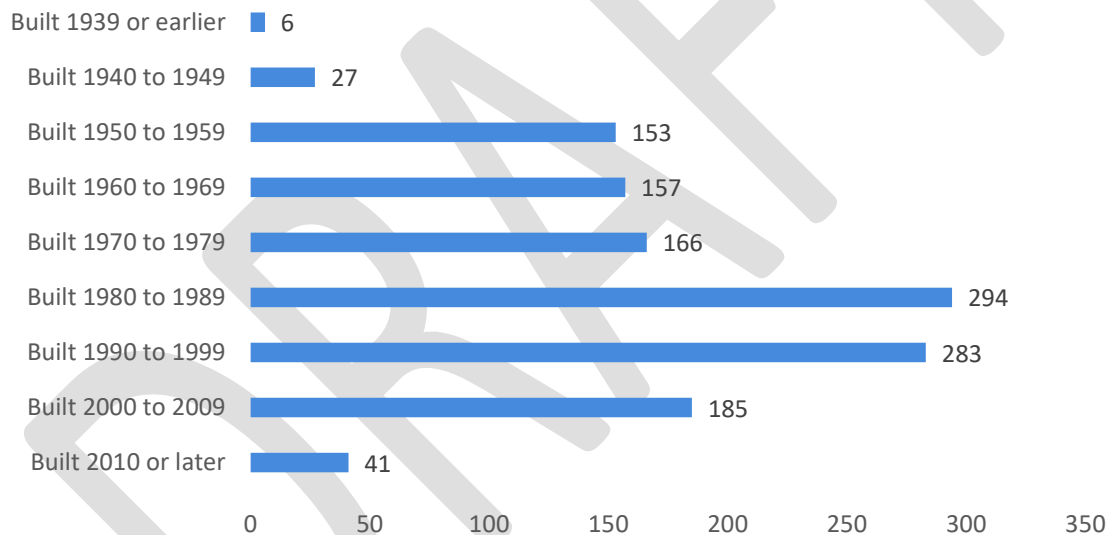
Housing Units	Topsail Beach			Pender County		
	2000	2020	% Change	2000	2020	% Change
Total Housing Units	1,135	1,359	19.74%	20,798	29,030	39.58%
Occupied	252	240	-4.76%	16,054	21,740	35.42%
Seasonal/Vacant	883	1,119	26.73%	4,744	7,290	53.67%

Housing Unit Trends

Topsail Beach experienced the greatest overall increase in housing units in the 1980s and 1990s compared to other periods (See Figure 2.2). During those periods, Topsail Beach saw 577 housing units built.

Figure 2.2: Year Housing Structure Built – Topsail Beach

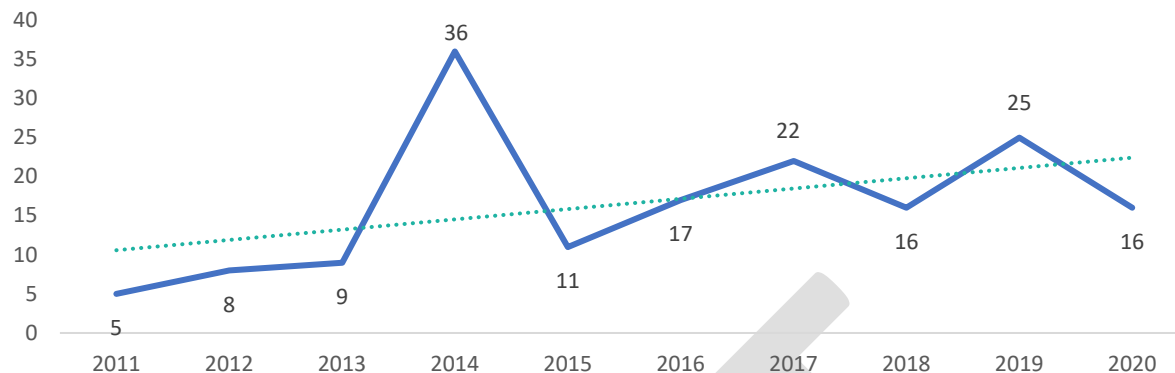
Source: U.S. Census Bureau 2019 American Community Survey



Records suggest a decrease in the rate of development of Topsail Beach after 2009 as there were only 41 housing units built from 2010 to 2019. This may be the result of the economic downturn at the beginning of the decade in addition to a decreasing supply of developable land. However, this data is also likely incomplete due to a lag between the construction of a housing unit and the appearance of that unit in Census data.

Figure 2.3: New Single Family/Duplex Construction Permits (2011 – 2020) – Topsail Beach

Source: Topsail Beach Community Development Department



In terms of trends in the previous decade, the number of permits issued for new single-family and duplex construction was lowest in 2011 when only five permits were issued. Since then, there has been an overall increase in the number of permits issued per year (See Figure 2.3). During this period there was an average of 17 new construction permits issued each year. From 2011 to 2020 there were no multi-family or commercial new construction building permits issued.

Housing Value

According to US Census Bureau data from 2019, more than 85% of occupied housing units in Topsail Beach are owner-occupied. The median value of owner-occupied housing in Topsail Beach is \$552,300 (See Figure 2.4). More than half of the owner-occupied housing is valued between \$500,000 and \$999,999, with approximately 5% more valued at a million dollars or above (See Table 2.9). The value of Topsail Beach's owner-occupied housing is approximately double that of the other municipalities on Topsail Island. Additionally, only 6.7% of owner-occupied housing in Pender County is valued at \$500,000 or more.

Table 2.9: Owner-Occupied Housing Value

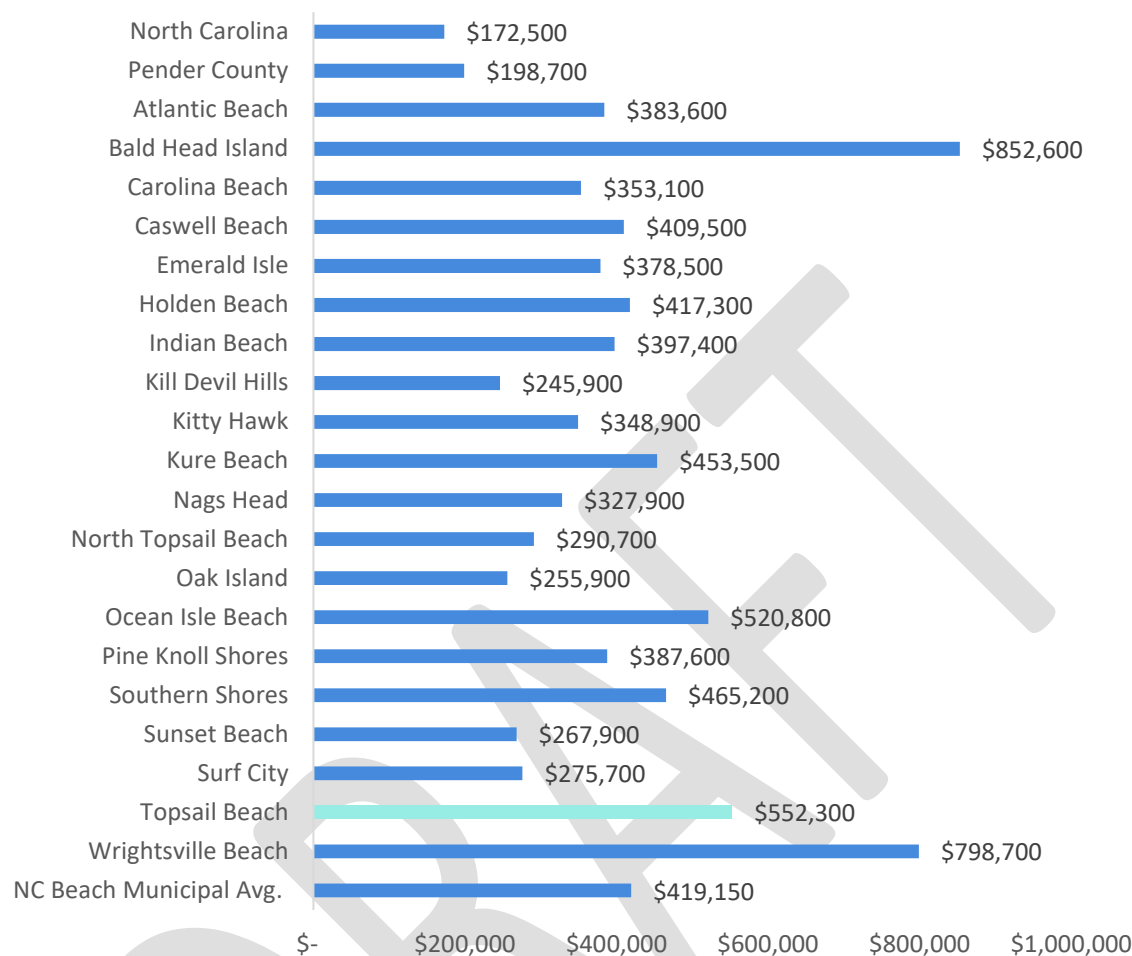
Source: U.S. Census Bureau 2019 American Community Survey

Housing Value	Topsail Beach		Surf City		North Topsail Beach	
	2019	Percent Total	2019	Percent Total	2019	Percent Total
Less than \$50,000	0	0.00%	67	7.14%	6	1.95%
\$50,000 to \$99,999	0	0.00%	30	3.19%	22	7.17%
\$100,000 to \$149,000	4	2.31%	42	4.47%	16	5.21%
\$150,000 to \$199,999	10	5.78%	55	5.86%	44	14.33%
\$200,000 to \$299,999	8	4.62%	368	39.19%	75	24.43%
\$300,000 to \$499,999	53	30.64%	273	29.07%	76	24.76%
\$500,000 to \$999,999	90	52.02%	95	10.12%	56	18.24%
\$1,000,000 or more	8	4.62%	9	0.96%	12	3.91%
Total	173	100.00%	939	100.00%	307	100.00%

Compared with North Carolina's other coastal municipalities, owner-occupied housing values are the third highest in Topsail Beach. The only coastal municipalities with a higher median value for owner occupied housing are Bald Head Island and Wrightsville Beach.

Figure 2.4: Median Value of Occupied Housing Units – NC Coastal Communities

Source: U.S. Census Bureau 2019 American Community Survey



ECONOMIC INDICATORS

Income

In the Town of Topsail Beach, the median household income for occupied households is around 35% higher than Pender County. More than half of households have a combined income above \$75,000 (See Table 2.10). Comparatively, Pender County has just 38% of its households within this category. In addition, the median family income of Topsail Beach is \$29,871 higher than in Pender County and the per capita income is \$32,565 higher than Pender County.

Table 2.10: Household Income

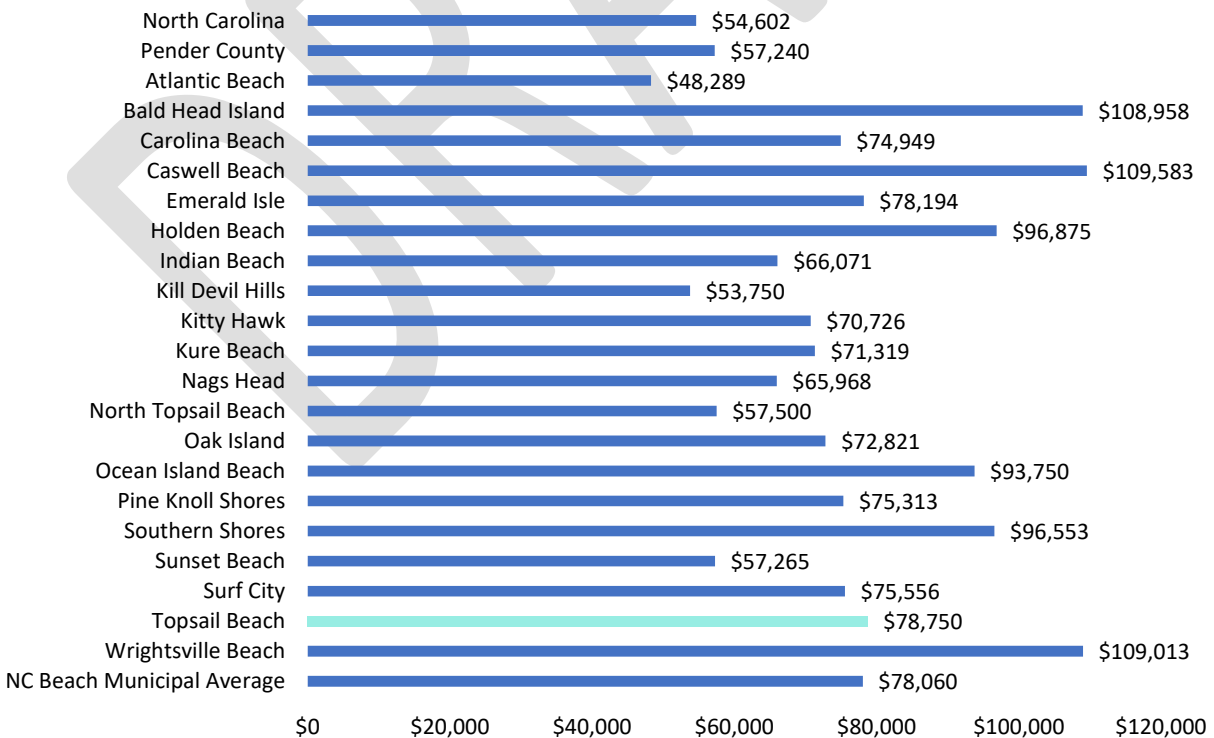
Source: U.S. Census Bureau 2019 American Community Survey

Income Range	Topsail Beach		Pender County	
	Number	Percent	Number	Percent
Less than \$10,000	15	7.43%	1,547	7.12%
\$10,000 to \$14,999	5	2.48%	1,207	5.55%
\$15,000 to \$24,999	14	6.93%	1,876	8.63%
\$25,000 to \$34,999	12	5.94%	2,158	9.93%
\$35,000 to \$49,999	12	5.94%	2,892	13.30%
\$50,000 to \$74,999	40	19.80%	3,759	17.29%
\$75,000 to \$99,999	13	6.44%	2,771	12.75%
\$100,000 to \$149,999	32	15.84%	3,182	14.64%
\$150,000 or more	59	29.21%	2,348	10.80%
Total	202	100.00%	21,740	100.00%
Median Household Income	\$78,750		\$57,240	
Median Family Income	\$106,607		\$76,736	
Per capita income	\$66,853		\$34,288	

Among coastal municipalities in North Carolina, Topsail Beach's median household income is the seventh highest (See Figure 2.5). The Town's median household income of \$78,750 is approximately 44% higher than that of the state overall. This indicates the presence of discretionary income that can support a limited number of retail and commercial enterprises and allow for leisure activities.

Figure 2.5: Median Household Income – NC Coastal Communities

Source: U.S. Census Bureau 2019 American Community Survey

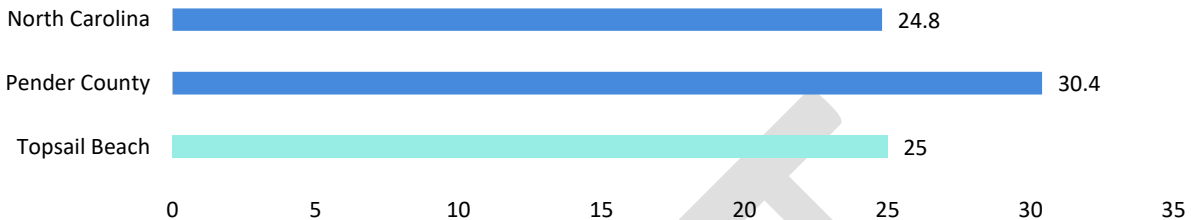


Employment

Topsail Beach workers travel 25 minutes to reach their place of employment on average, which is in line with statewide figures and lower than Pender County as a whole (See Figure 2.6).

Figure 2.6: Mean Travel Time to Work (Minutes)

Source: U.S. Census Bureau 2019 American Community Survey



The majority of Topsail Beach's labor force is employed inside of the County. According to Census data, four out of five Town residents who are employed do not travel to another county for their job compared to two in five Pender County workers and seven in ten North Carolina workers (See Table 2.11). Additionally, less than 20% of workers in Topsail Beach work in another county and only 2.5% work out of state.

Table 2.11: Commuting Patterns

Source: U.S. Census Bureau 2019 American Community Survey

Place of Work	Topsail Beach	Pender County	North Carolina
	% of Total	% of Total	% of Total
Worked in county of residence	80.7	40.2	71.1
Worked outside county of residence	16.8	58.8	26.3
Worked outside state of residence	2.5	0.9	2.6

Similar to the county and state overall, the majority of workers in Topsail Beach drove alone to their place of employment in 2019 (See Table 2.12). Where Topsail Beach does differ from the state and county is in the number of people who work from home, which is 27.9% of the Town's workforce compared with only 7% in Pender County and 5.8% across North Carolina. It should be noted that commuting patterns were likely impacted by the 2019 novel coronavirus outbreak, which did not have noticeable impacts on the United States until 2020. The reaction to the virus included a transition to working from home, though the long-term implications of this transition on commuting patterns remain unknown.

Table 2.12: Means of Transportation to Work

Source: U.S. Census Bureau 2019 American Community Survey

Transportation Mode	Topsail Beach	Pender County	North Carolina
Drove Alone	50.3%	81.2%	80.9%
Car Pooled	18.8%	9.9%	9.2%
Public Transportation	0.0%	0.5%	1.0%
Walked	1.5%	0.7%	1.8%
Bicycle	0.5%	0.1%	0.2%
Other Means	1.0%	0.7%	1.1%
Worked at Home	27.9%	7.0%	5.8%

SUMMARY

Based on the statistics contained within this chapter, and the comparative data provided in Table 2.13, the Town of Topsail Beach is clearly a vibrant and desirable coastal community. As with Pender County, the Town will continue to experience population growth over the next thirty years as the coast of North Carolina continues to be a huge draw for retirees and those seeking the lifestyle offered by the area. This data will be used for planning purposes such as guiding development and determining future infrastructure needs. This data can be used for planning purposes to help meet future service and infrastructure needs in the Town.

- In Topsail Beach, the permanent population increased from 346 to 461 residents from 1990 to 2020. This is an increase of around 25%.
- The median age in Topsail Beach is 58.8 years old.
- It is estimated that approximately 11,489 people visit, reside, or stay overnight within Town limits on a peak summer day.
- In 2050, the permanent population of Topsail Beach is projected to be between 683 and 731 people. This is an increase of approximately 250 people or 55%.
- As of 2019, approximately 18% of the housing units in Topsail Beach were occupied year-round.
- More than a quarter of Topsail Beach residents who were employed worked from home as of 2019.
- Topsail Beach has the 3rd highest owner-occupied home values compared to other coastal towns.

Table 2.13: Demographic Characteristics of Selected North Carolina Beach Communities

Source: U.S. Census Bureau 2019 American Community Survey and NCOSBM

Municipality	Median Age	% Housing Units Occupied All Year	% in Labor Force, Ages 16 years & Older	Median Household Income	Median Family Income	Per Capita Income	Percent Total Housing in 1-unit Detached	Median Value of Owner Occupied Housing
North Carolina	38.7	85.7%	62.4%	\$54,602	\$68,435	\$30,783	65.1%	\$172,500
Pender County	42.7	74.9%	80.7%	\$57,240	\$72,418	\$29,266	74.9%	\$198,700
Atlantic Beach	56.6	19.3%	53.5%	\$48,289	\$81,181	\$45,147	35.7%	\$383,600
Bald Head Island	69.0	11.7%	29.1%	\$108,958	\$115,625	\$121,449	92.7%	\$852,600
Carolina Beach	47.4	47.9%	65.2%	\$74,949	\$98,696	\$42,185	40.3%	\$353,100
Caswell Beach	64.9	30.7%	39.2%	\$109,583	\$123,750	\$69,190	50.8%	\$409,500
Emerald Isle	55.2	25.7%	53.6%	\$78,194	\$91,358	\$53,089	56.5%	\$378,500
Holden Beach	57.6	17.9%	47.4%	\$96,875	\$105,893	\$60,977	85.8%	\$417,300
Indian Beach	64.8	5.3%	38.1%	\$66,071	\$69,375	\$47,375	7.1%	\$397,400
Kill Devil Hills	41.7	47.9%	71.9%	\$53,750	\$64,208	\$30,885	78.1%	\$245,900
Kitty Hawk	49.2	44.1%	69.9%	\$70,726	\$75,980	\$39,607	70.2%	\$348,900
Kure Beach	57.8	41.9%	51.0%	\$71,319	\$96,141	\$52,563	68.1%	\$453,500
Nags Head	49.6	26.9%	66.0%	\$65,968	\$86,806	\$37,785	86.5%	\$327,900
North Topsail Beach	57.2	19.0%	50.4%	\$57,500	\$62,917	\$53,522	45.7%	\$290,700
Oak Island	59.8	38.9%	50.1%	\$72,821	\$85,607	\$44,029	80.5%	\$255,900
Ocean Isle Beach	64.9	10.6%	37.8%	\$93,750	\$102,083	\$66,360	70.5%	\$520,800
Pine Knoll Shores	63.9	31.8%	38.4%	\$75,313	\$90,347	\$50,762	54.2%	\$387,600
Southern Shores	58.2	51.7%	50.1%	\$96,553	\$111,914	\$60,117	97.7%	\$465,200
Sunset Beach	65.2	37.9%	25.1%	\$57,265	\$73,194	\$39,628	57.4%	\$267,900
Surf City	37.3	31.6%	63.4%	\$75,556	\$84,868	\$37,098	63.2%	\$275,700
Topsail Beach	58.8	15.4%	56.8%	\$78,750	\$106,607	\$66,853	83.2%	\$552,300
Wrightsville Beach	43.7	40.8%	63.1%	\$109,013	\$145,673	\$76,496	42.8%	\$798,700
NC Beach Municipal Average	55.7	31.1%	50.9%	\$77,488	\$92,392	\$54,325	62.9%	\$415,840
Topsail Beach Rank	8th Highest	4th Lowest	7th Highest	7th Highest	5th Highest	4th Highest	5th Highest	3rd Highest

CHAPTER 3: NATURAL SYSTEMS ANALYSIS

Protecting and enhancing the natural systems of Topsail Beach are critical to residents' and visitors' quality of life. Natural features also play a key role in supporting the established local economy. Previous land use plans demonstrate a strong commitment to preserving the Town's beautiful and abundant natural resources. Accordingly, any residential, commercial, or other development activities permitted by the Town shall be compatible with current regulations, development patterns, Areas of Environmental Concern (AEC), and wetlands requirements. This section of the Land Use Plan describes and analyzes the natural features and environmental conditions within the Town of Topsail Beach and its immediate vicinity.

One of the basic purposes of North Carolina's Coastal Area Management Act (CAMA) is to establish provisions capable of the 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; local governments, however, are granted significant flexibility when developing policies and taking actions to protect them. As a result, an important component of the Land Use Plan is to identify those AECs present within the Town.

AREAS OF ENVIRONMENTAL CONCERN

The State Guidelines for Areas 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 – local governments are required to give special attention to these areas when developing land use plans. 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 for protection from uncontrolled development that causes irreversible damage to property, public health, or the environment.

To limit detrimental impacts on AECs, CAMA established 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. Division of Coastal Management (DCM) personnel are the staff representatives of the CRC.

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 Topsail Beach, public water supplies and natural and cultural resource areas. The two categories found within the Town's jurisdiction are Estuarine and Ocean Systems and Ocean Hazard Systems. As a result, only these two categories of AECs will be discussed in this chapter.

Estuarine and Ocean System

The estuarine and ocean system AEC is a broad category including the following components:

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

ESTUARINE WATER

Estuarine waters include all waters of the Atlantic Ocean within 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 (*NCGS 113A-113(b)(2)*). The Intracoastal Waterway and portions of associated streams are designated as coastal fishing waters. Estuaries are extremely productive natural systems that are vital to marine life, coastal tourism, and recreation.

Estuarine waters in and adjacent to the planning jurisdiction of Topsail 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, and 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 (e.g. simple access structures, structures to prevent erosion, boat docks, marinas, wharves and mooring piling) may be allowed within this AEC.

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 (*15A NCAC 7H.0209*). For non-Outstanding Resource Waters (ORW), the estuarine shoreline is defined as 75 feet landward from mean high water line (MHWL). For ORW waters, the distance is 575 feet. Although there are no ORW waters within Topsail Beach, there are some identified to the southwest around Lea-Hutaff Island. 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.

The Town of Topsail Beach has estuarine shoreline system AECs within its planning jurisdiction adjacent to the Intracoastal Waterway.

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 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 Topsail Beach residents and visitors. These values include:

- **Water Storage:** wetlands are able to store heavy rain, surface runoff, and flood waters, thereby reducing downstream flooding.
- **Shoreline Stabilization:** ground cover and roots of wetland plants help hold soil 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 Needlerush, Glasswort, Salt Grass, Sea Lavender, Bulrush, Saw Grass, Cat-tail, Salt Meadow Grass, and Salt Reed Grass. 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, Topsail Beach has coastal wetlands of the brackish saltwater variety. There are approximately 1,750 acres of coastal wetlands within the Town's planning jurisdiction, though these are nearly entirely located between Topsail Island and the mainland. Coastal wetlands are considered to be unsuitable for all non-water dependent development activities and other land uses that alter their natural functions. See Map 3.4 for additional information.

PUBLIC TRUST AREAS

Public trust areas include coastal waters and the submerged tidal lands below the mean high water line (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, public trust waters in or adjacent to the Town of Topsail Beach's planning jurisdiction include the Intracoastal Waterway 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. All development, structures, and land uses that interfere with the public's right to the 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 and may be appropriate within the Town's jurisdiction.

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 includes three components:

- Ocean erodible area;
- Inlet hazard area; and
- Unvegetated beach area.

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 (15A NCAC 07H.0304). The seaward boundary of this area is the mean low water line.

The ocean erodible area is defined on a lot-by-lot basis due to the significant variation in the first line of stable natural vegetation. The extent of the AEC is determined by multiplying the long-term annual erosion rate by 60 (15A NCAC 7H.0304). The first line of stable natural vegetation and/or the static vegetation line are utilized to determine the required CAMA oceanfront setback for structures.

DCM has found that erosion rates vary along the oceanfront in Topsail Beach, ranging from 20.8 feet of accretion per year to 0.7 feet of erosion per year, with the most significant rates of erosion along a segment of the beach south of the downtown business district. The most southern portion of the Town was found to be experiencing the highest levels of accretion.

INLET HAZARD AREA

Inlet hazard areas are locations that are especially vulnerable to erosion, flooding and other adverse effects of sand, wind, and water because of their proximity to dynamic ocean inlets. There is an inlet hazard area at the south end of Topsail Island.

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. There are no identified unvegetated beach areas within the Town of Topsail Beach.

SOIL CHARACTERISTICS

Much of the soil found on within the Town's corporate limits on Topsail Island is Newhan-Corolla-Urban land complex, consisting of moderately to excessively drained sands with varying slopes. The most prevalent soil type within Topsail Beach is Carteret Fine Sand, though it is generally found in areas unlikely to be developed such as the wetlands and islands in and around the Intracoastal Waterway. This soil type consists of very poorly drained sands with minimal slope.

HAZARDS

The Town of Topsail Beach is located at the southern end of Topsail Island in Pender County. The Town is susceptible to a variety of natural and manmade hazards such as flooding, hurricanes, nor'easters, severe thunderstorms, tornadoes, and urban fires. These hazards are summarized in the following sections.

Flood Hazard Areas

The 100-year flood plain is the accepted benchmark for defining flood hazard areas. Practically all of the Town lies within the 100-year flood plain [See Special Flood Hazard Areas Map 3.1]. The flood plain in Topsail Beach is mapped including:

- **AE zones:** Special flood hazard areas inundated by the 100-year flood (one percent chance of a hundred year flood event); base flood elevations are determined;
- **VE zones:** Special flood hazard areas inundated by the 100-year flood (one percent chance of a hundred year flood event); coastal floods with velocity hazards (wave action); base flood elevations are determined.

Most of the Town's oceanfront lots/structures are at least partially within VE zones, in addition to some second-row homes and the southern end of the island (See Table 3.1). A larger number of properties in the Town are in the AE zone. There are limited areas of Topsail Beach that are not considered part of the 100-year floodplain but are still identified as having elevated flood risk. These areas are considered within the 500-year floodplain. Nearly all residential, non-residential commercial, and governmental units within the Town are in a mapped flood area. In the case of condominiums or other shared buildings, multiple units may occupy one structure.

Table 3.1: Units within a Mapped Flood Zone

Source: Cape Fear Council of Governments GIS; Pender County GIS; NC Flood Maps.

Mapped Flood Areas	Units
500-year Floodplain	2
AE	952
VE	486
Total	1,440

The Town is required to periodically adopt updated flood maps prepared by the federal government to maintain membership in the National Flood Insurance Program. These updated maps may modify the elevation and design standards for new, repaired, and improved structures within the Town's planning jurisdiction. The data for Topsail Beach's currently effective maps was last updated in 2007.

Table 3.2: Jurisdictional Exposure to Flood Hazard

Source: Cape Fear Council of Governments GIS; Pender County GIS, NC Flood Maps.

Units in Mapped Flood Areas	Total Units	Percentage of Total Units in Mapped Flood Areas
1,440	1,441	99.93%

There are preliminary flood maps for the entire community based on new data; however, they are pending adoption due to ongoing appeals at the federal level. This data is illustrated in Map 3.2.

Table 3.3: Units within a Mapped Flood Zone – Preliminary Maps

Source: Cape Fear Council of Governments GIS; Pender County GIS, NC Flood Maps.

Mapped Flood Areas	Units
500-year Floodplain	5
AE	1,127
VE	307
Total	1,439

Based on data available from Pender County and the State of North Carolina, the adoption of the proposed new flood maps would have some impact on individual property owners within the Town. However, a similar proportion of existing units would be within a mapped flood area as under the currently adopted versions. More units would be in the 500-year floodplain or an AE zone, while fewer would be within a VE zone. Changes in flood elevation within flood zones may also impact property owners within the Town.

Table 3.4: Jurisdictional Exposure to Flood Hazard – Preliminary Maps

Source: Cape Fear Council of Governments GIS; Pender County GIS, NC Flood Maps.

Units in Mapped Flood Areas	Total Units	Percentage of Total Units in Mapped Flood Areas
1,439	1,441	99.86%

Updates to flood maps reflect a change in, or changing understanding of, the flood risk for a given portion of the community. These updates have an impact on residents and property owners by impacting construction standards – and often flood insurance rates. For instance, pockets of land along Anderson Boulevard are proposed to be moved to a less restrictive zone. In contrast, some areas, including an area near the Intracoastal Waterway generally between Scott Avenue and Florida Avenue, are proposed to be held to higher construction standards based on changes in perceived risk.

FEMA Flood Insurance

Flood insurance coverage is required for purchasers of property within the 100-year floodplain to obtain a federally backed mortgage. According to the Federal Emergency Management Agency (FEMA), there are approximately five million National Flood Insurance Program (NFIP) policies in force across the United States. Flood insurance is available in more than 20,000 participating communities nationwide including Topsail Beach, where 1,009 policies are in force valued at \$280,678,100. Since 1978, there have been 2,492 documented losses with payments approaching \$26,000,000. See Table 3.5 for additional details. There are fewer policies than there are units listed in Tables 3.1 through 3.4 in part because multiple units may be within the same structure (e.g. condos) and would be covered under one policy. Additionally, not every structure is insured under the NFIP.

FEMA has recently changed the NFIP methodology in an attempt to more appropriately price insurance policies. Called Risk Rating 2.0, this effort considers a broader range of data than current insurance pricing. According to preliminary information gathered by FEMA, more than 25% of policyholders in North Carolina are expected to experience a decrease in premiums while the remainder experience an increase. Approximately 65% of North Carolina NFIP policyholders are projected to experience a premium increase of less than \$10 per month.

Table 3.5: Flood Insurance Policies and Loss Statistics (As of May 5, 2022)

Source: NC Department of Public Safety

	Policies In-Force	Insurance In-Force	Total Losses	Total Payment
Topsail Beach	1,009	\$280,678,100	2,492	\$25,850,215
North Topsail Beach	1,278	\$269,319,900	1,584	\$21,820,787
Surf City	1,993	\$517,578,300	2,374	\$20,570,225
Pender County	2,373	\$703,038,300	1,454	\$71,963,881
North Carolina	130,289,373	\$35,540,134,800	105,220	\$1,991,658,433

One way to help minimize these losses and lower flood insurance premiums is to participate in the 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 five percent. A Class 1 community receives a 45 percent premium discount, while a Class 9 community gets a five 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. Nationwide, there are more than 1,500 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. Topsail Beach is currently a Class 7 community, representing a 15% discount in flood insurance.

Coastal Barrier Resources System

A portion of the Coastal Barrier Resources System (CBRS) is located on the south end of Topsail Beach. The CBRS is composed of coastal land that has been designated for enhanced protection by the federal government due to the value of the property as a buffer between coastal hazards and locations inland. These areas were designated under the Coastal Barrier Resources Act (CBRA), which has led to the nickname “COBRA zones.” Within the CBRS, only properties built prior to 1982 are eligible for coverage under the NFIP and local governments are restricted from expending funds to provide infrastructure and services to such locations. See Maps 3.1 and 3.2 for more information.

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. When winds exceed 74 miles per hour, it becomes a hurricane.

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 denoting highest severity. See Table 3.6 for additional information. 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.

In the past few years, the Town of Topsail Beach has been impacted by several hurricanes including Matthew, Michael, Florence, and Isaias. Each storm had the potential to cause catastrophic damage from wind and flooding. However, while property near the ocean is often thought of as having the most hurricane-related risks, the most substantial damage from recent storms has occurred to inland communities some fifty miles from the coast.

Table 3.6: Hurricanes and the Saffir-Simpson Scale

Source: National Hurricane Center

Error! Hyperlink reference not valid. <https://www.nhc.noaa.gov/aboutsshws.php>

Category	Wind Speed (mph)	Types of Damage
1	74-95	Very dangerous winds will produce some damage: Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large branches of trees will snap and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
2	96-110	Extremely dangerous winds will cause extensive damage: Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.
3	111-130	Devastating damage will occur: Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
4	131-155	Catastrophic damage will occur: Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5	>155	Catastrophic damage will occur: A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

According to the National Weather Service, storm surge-induced flooding has killed more people in the United States in hurricanes than all other hurricane-related threats combined since 1900. Despite attempts to quantify potential storm surge impacts by hurricane category, threats vary greatly based on local geographic factors as discussed in the following section.

Storm Surge Areas

Areas in the 100-year floodplain are 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.

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. Areas of the Town most likely to be impacted by storm surge are located in the VE Flood Zone as shown on Maps 3.1 and 3.2.

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 cause coastal flooding, wind damage, and severe beach erosion. A number of nor'easters have impacted North Carolina in recent decades. These storm events have been known to cause erosion along the beach within the Town.

Tornadoes/Waterspouts

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. 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). The Enhanced Fujita Scale replaced the now-obsolete Fujita scale as the United States' tornado rating system in 2007. The scale was revised to reflect better examinations of tornado damage surveys, so as to align wind speeds more closely with associated storm damage. "EF" categories associated with the Enhanced Fujita Scale are listed in Table 3.7.

Tornadic waterspouts are tornadoes that form over water, or move from land to water. They have the same characteristics as a land tornado. They are associated with severe thunderstorms, and are often accompanied by high winds and seas, large hail, and frequent dangerous lightning. If a waterspout moves onshore, the National Weather Service issues a tornado warning, as some of them can cause significant damage and injuries to people.

Table 3.7: Operational Enhanced Fujita Tornado Scale

Source: NOAA, Enhanced F Scale for Tornado Damage: <http://www.spc.noaa.gov/faq/tornado/ef-scale.html>

EF-Scale	Winds (mph)
EF 0	65-85
EF 1	86-110
EF 2	111-135
EF 3	136-165
EF 4	166-200
EF 5	>200

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 Topsail Beach is not much different than other Towns. However, the likelihood of an urban fire spreading rapidly is high given the limited setbacks and the large number of structures with wooden patio style sundecks, which can act as fuel to spread urban fires. Other combustible items such as landscaping materials, stairs, lattices, HVAC 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.

WATER QUALITY

The relative condition of surface water and its ability to support marine life and recreational activities are important contributing factors to quality of life for Town residents and visitors. Development has a direct impact on surface water quality as any increase in impervious surface can increase the amount of runoff that terminates in adjacent waterbodies. According to the U.S. Environmental Protection Agency, the tourism industry loses close to \$1 billion dollars nationally each year, mainly through losses in fishing and boating activities, as a result of water bodies that have been affected by nutrient pollution and harmful algal blooms. In 2020, the overall tourism economic impact in Pender County – largely attributed to coastal recreational tourism supported by pristine natural habitat and clean waters – was nearly \$132 million dollars and resulted in a state and local tax savings per resident of approximately \$200 dollars according to a study prepared for Visit North Carolina by Tourism Economics.

Surface waters should contain a balanced amount of nutrients and have normal fluctuations in salinity and temperature. They 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 affect 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, the NC Department of Environment Quality's (NCDEQ) Division of Water Resources (DWR) assigns classifications to water bodies. The primary classifications are:

- **SC:** All tidal salt waters protected for secondary recreation such as fishing, boating, and other activities involving minimal skin contact; fish and noncommercial shellfish consumption; aquatic life propagation and survival; and wildlife.
- **SB:** Tidal salt waters protected for all SC uses in addition to primary recreation. Primary recreational activities include swimming, skin diving, water skiing, and similar uses involving human body contact with water where such activities take place in an organized manner or on a frequent basis.
- **SA:** Tidal salt waters that are used for commercial shellfishing or marketing purposes and are also protected for all Class SC and Class SB uses. All SA waters are also High Quality Waters (HQW) by supplemental classification.

Additional water quality classifications include:

- **High Quality Waters (HQW):** Supplemental classification intended to protect waters which are rated excellent based on biological and physical/chemical characteristics through Division monitoring or special studies, primary nursery areas designated by the Marine Fisheries Commission, and other functional nursery areas designated by the Marine Fisheries Commission.
- **Outstanding Resource Waters (ORW):** All outstanding resource waters are a subset of High Quality Waters. This supplemental classification is intended to protect unique and special waters having excellent water quality and being of exceptional state or national ecological or recreational significance. No ORW are located in Topsail Beach's jurisdiction.
- **Swamp Waters (SW):** Supplemental classification intended to recognize those waters which have low velocities and other natural characteristics which are different from adjacent streams.
- **Nutrient Sensitive Waters (NSW):** Supplemental classification intended for waters needing additional nutrient management due to being subject to excessive growth of microscopic or macroscopic vegetation.

See Map 3.3 displaying the surface water classifications in and around the Town of Topsail Beach.

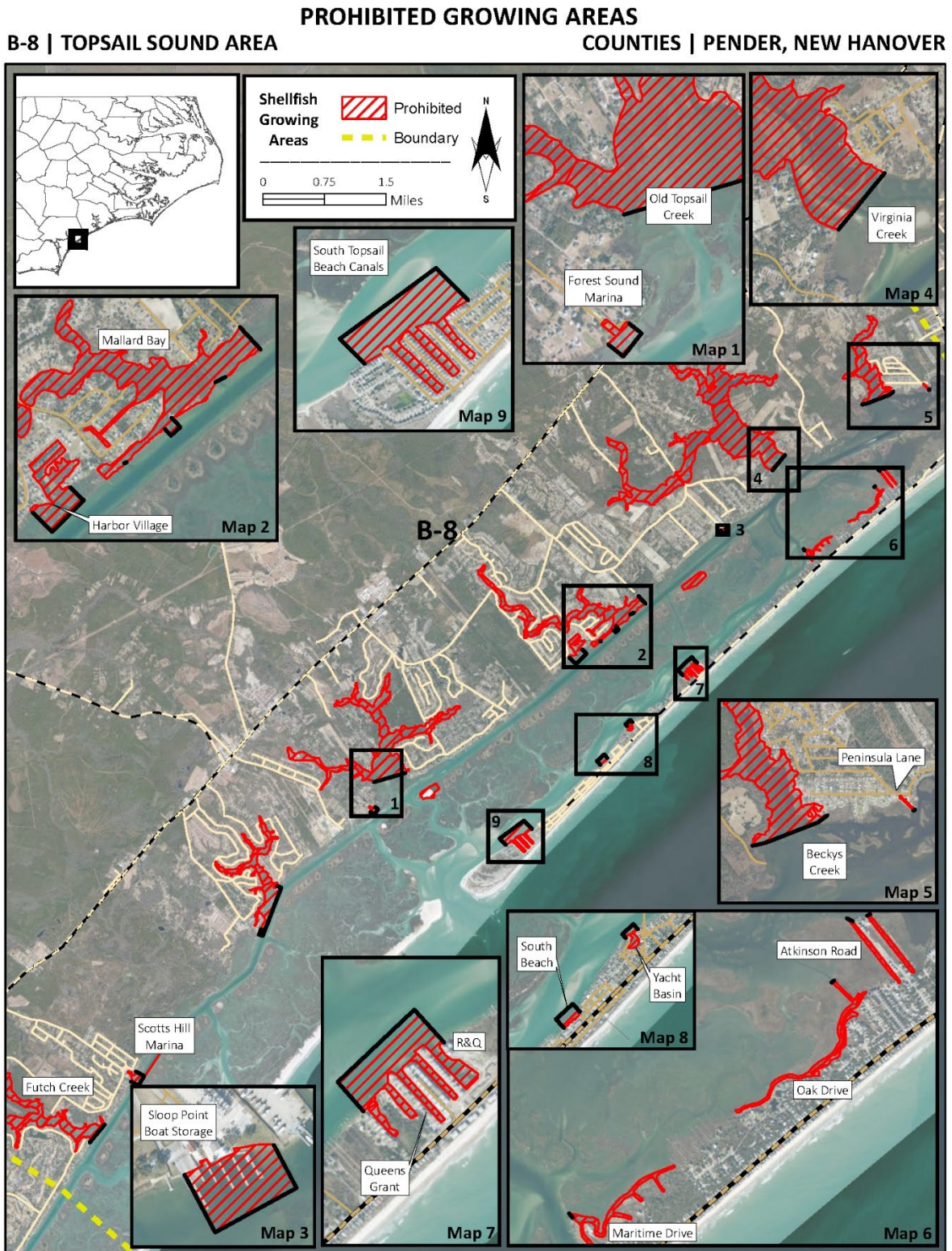
The waters of the Intracoastal Waterway and associated creeks in and adjacent to Topsail Beach's planning jurisdiction are classified as SA;HQW – high quality tidal salt waters protected for commercial shellfishing or marketing purposes as well as recreational activities like fishing, boating, and swimming. The oceanfront in Topsail Beach is classified as SB which is typical of coastal shoreline. This classification designates that the area is suitable for uses that involve body contact with the water in activities such as swimming.

Shellfishing and Primary Nursery Areas

Topsail Beach is near several areas permanently closed to shellfishing by the NCDEQ Division of Marine Fisheries. These areas are illustrated with red hatching on Figure 3.1. These closures are due to stormwater runoff and other nonpoint sources of pollution from surrounding populated areas and employment centers.

Figure 3.1: Topsail Beach Area Shellfish Closures

Source: North Carolina Division of Environmental Quality Shellfish Maps



Salt marshes and estuaries along the North Carolina coast also 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 three categories:

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

Primary nursery areas are found within most of the sound side waters between Topsail Island and the mainland and within creeks and their outfalls. 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 [See Map 3.5]. 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.

Permanent 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 no permanent secondary nursery areas within the Town.

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. There are no special secondary nursery areas within the Town.

Non-Coastal Wetlands

Section 404 of the Federal Water Pollution Control Act (“the Clean Water Act”) defines wetlands as “areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation adapted to life in saturated soil conditions.”

“Any person, firm, or agency (including Federal, state, and local government agencies) planning to work in navigable waters of the United States, or discharge (dump, place, deposit) dredged or fill material in waters of the United States, including wetlands, must first obtain a permit from the Army Corps of Engineers (COE).” If an activity requires an ACOE ‘404’ permit, the state of North Carolina requires that a ‘401’ water quality certification be obtained as well. The ‘401’ certification is basically a verification by the state that a given project will not degrade waters of the State or otherwise violate water quality standards.

Within the Town of Topsail Beach, there are approximately 35.82 acres of non-coastal wetlands. The largest type of non-coastal wetland is estuarine shrub/scrub, which makes up more than three quarters of the total non-coastal wetlands. The percentages and acreage of all wetlands in the planning jurisdiction of Topsail Beach can be found in Table 3.8.

Descriptions of the types of non-coastal wetlands found in and adjacent to the Town are below. The locations of these wetlands can be seen on Map 3.4.

Depressional Swamp Forest – Very poorly drained non-riverine forested or occasionally scrub/shrub communities that are semi-permanently or temporarily flooded. Typical species include cypress, black gum, water tupelo, green ash, and red maple.

Estuarine Shrub/Scrub – Any shrub/scrub vegetation dominated habitat subject to occasional flooding by tides, including wind tides (whether or not the tidewaters reach the marshland areas through natural or artificial watercourses).

Hardwood Flat – Poorly drained interstream flats not associated with rivers or estuaries. Seasonally saturated by a high water table or poor drainage. Species vary greatly but often include sweet gum and red maple.

Headwater Swamp – Forested systems along the upper reaches of first order streams. These include hardwood-dominated communities with soil that is moist most of the year. Channels receive their water from overland flow and rarely overflow their banks.

Human Impacted – Areas of human impact have physically disturbed the wetland, but the area is still a wetland. Impoundments and some cutovers are included in this category, as well as other disturbed areas, such as power lines.

Managed Pineland – Seasonally saturated, managed pine forests occurring on hydric soils. This wetland category may also contain non-managed pine forests occurring on hydric soils. Generally these are areas that were not shown on National Wetland Inventory maps. These areas may or may not be jurisdictional wetlands.

Pine Flat – Palustrine (non-tidal), seasonally saturated pine habitats on hydric (saturated) soils that may become dry for part of the year, generally on flat or nearly flat areas that are not associated with a river or stream system. This category does not include managed pine systems.

Riverine Swamp Forest – Riverine forested or occasionally scrub/shrub communities usually occurring in floodplains, that are semi-permanently to seasonally flooded. In bottomland hardwood systems, typical species include oaks (overcup, water, laurel, and swamp chestnut), sweet gum, green ash, cottonwoods, willows, river birch, and occasionally pines. In swamp forest systems, typical species include cypress, black gum, water tupelo, green ash, and red maple.

Table 3.8: Types of Non-Coastal Wetlands in Topsail Beach

Source: NCDEQ, National Wetlands Inventory.

Types	Acres	Percentage of Total Non-Coastal Wetland Acres
Depressional Swamp Forest	0.47	1.31%
Estuarine Shrub/Scrub	26.96	75.27%
Managed Pineland	8.09	22.59%
Riverine Swamp Forest	.30	0.84%
Total	35.82	100.00%

Water Supply and Wellhead Protection Areas

There are no surface water supply waters in the vicinity of Topsail Beach. Drinking water is supplied by four wells supplied by the PeeDee and Castle Hayne aquifers. See Chapter 4 for a discussion of the water supply.

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 Topsail Beach is located within or in close proximity to fragile areas. Many of these areas have previously been discussed. This section describes natural heritage areas and the areas containing endangered species.

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 is one Natural Heritage Natural Area (NHNA) identified within Topsail Beach: The Topsail Sound Maritime Forests are in the Town's corporate limits on the ICWW stretching from Queen's Grant to the southern end of the island. [See Map 3.5].

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's planning jurisdiction include the dry sand areas of the oceanfront beach, dunes, and undeveloped areas near the Intracoastal Waterway. Endangered animals identified in Topsail Beach include various types of birds, 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. 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.

GOALS, OBJECTIVES, AND POLICIES

Introduction

The Town has established a set of land use and development related policies to act as guidelines during any official decision making process. These policies and goals provide citizens, property owners, and developers with a predictability of official actions. Town policies in this chapter relate to natural systems. Two CAMA management topics are covered in the policy section herein: Water Quality and Natural Hazard Areas. Policies that relate to stormwater, drinking water, and wastewater are addressed in Chapter 4.

It should be noted that these topic areas are developed as part of the Division of Coastal Management's 7B Land Use Planning Guidelines.

Refer to Appendix A for Definitions of actions words contained within the policy section.

NATURAL HAZARD AREAS

Goal 3.1: Conserve, and maintain barrier dunes, beaches, flood plains, and other coastal features for their natural storm protection functions and their natural resources giving recognition to public health, safety, and welfare issues.

Objective 3.1: 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 and work to implement the *Southeastern NC Regional Hazard Mitigation Plan (2021)*.

Policy 3.1.A: Participation in the National Flood Insurance Program: The Town shall continue to participate in the National Flood Insurance Program (administered by the Federal Emergency Management Agency) and to continue to allow Federal Flood Insurance to be available to residents.

Recommended Action 3.1.A.1: Consider opportunities to maintain the Town's Community Rating System (CRS) level as a means to reduce flood insurance rates.

Policy 3.1.B: Permitted Development in Special Flood Hazard Areas: The Town shall permit development to take place in flood hazard areas as defined by the Federal Emergency Management Agency, and according to the Topsail Beach Flood Damage Prevention Ordinance.

Policy 3.1.C: Post-Storm Construction: Redevelopment following a natural disaster shall be consistent with the local, state, and federal regulations, laws, and ordinances current at the time of the requested redevelopment action.

Policy 3.1.D: Minimizing Hazardous Development: In areas subject to natural or man-made hazards, the Town encourages low or moderate intensity land uses.

Recommended Action 3.1.D.1: Consider opportunities for acquiring parcels located within hazard areas or rendered unbuildable by storms or other events for public purposes, including recreation or public access. Such opportunities may be enhanced by a formalized procedure for evaluating potential land acquisition projects that accounts for topics such as public access and wildlife habitat conservation prior to procurement.

Policy 3.1.E: Coastal Barrier Resources System: The Town supports and shall comply with the Coastal Barrier Resources Act, ensuring access to future federal funding and mitigating potential hazards.

Policy 3.1.F: Protection of Dune System: The Town supports minimizing the impacts of development to existing sand dunes and the vegetation thereon, subject to provisions in the Town's Flood Damage Prevention Ordinance and the requirements of the North Carolina Division of Coastal Management.

Policy 3.1.G: Protection and Nourishment of the Public Beach: The Town strenuously supports participation in the continued funding of coastal storm damage reduction activities. The Town is committed to the idea of coastal storm damage reduction activities for dealing with the threat of erosion. The Town strongly supports all federal, state, and local government efforts to assist beach communities with the funding assistance which makes coastal storm damage reduction activities possible. Private efforts to create and maintain new dunes are also encouraged.

Recommended Action 3.1.G.1: Consider continuing to advocate for financial support for coastal storm damage reduction activities with federal, state, and county officials.

Recommended Action 3.1.G.2: Consider opportunities for continuing to review the Town's strategy for funding coastal storm damage reduction activities. Ongoing review provides the Town an opportunity to be proactive in case of changing conditions.

Policy 3.1.H: Engineered Beach Status: The Town shall take all practical steps to maintain engineered beach status for the purpose of retaining additional assistance from FEMA in the event of a named storm.

Policy 3.1.I: Hazard Mitigation Planning: The Town supports proactive hazard mitigation planning, including implementation of the *Southeastern NC Regional Hazard Mitigation Plan (2021)* and related policies.

Recommended Action 3.1.I.1: Consider developing specific and timely recommendations for implementing hazard mitigation measures contained in the *Southeastern NC Regional Hazard Mitigation Plan (2021)* following a state or federally declared natural disaster.

Recommended Action 3.1.I.2: Consider applying for funding from the Hazard Mitigation Grant Program (HMGP) for priority projects if the President declares Topsail Beach a disaster area.

Policy 3.1.J: Emergency and Disaster Response: The Town shall work with all relevant internal and external stakeholders, emergency response agencies, and service delivery organizations to provide services and relief to area residents in the case of an emergency or disaster.

WATER QUALITY AND NATURAL ENVIRONMENT

Goal 3.2: Maintain, protect, and where possible enhance the natural environment and water quality in the Atlantic Ocean, the Intracoastal Waterway, all coastal wetlands, creeks, streams, and estuaries.

Objective 3.2: Protect the Natural Environment of Topsail 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 Topsail Beach.

Policy 3.2.A: Preservation and Enhancement of Water Quality: The Town supports efforts to preserve water quality in the area including state and federal regulations, regional collaboration, and the pursuit of funding sources for planning and facilities projects to improve area water quality.

Recommended Action 3.2.A.1: Consider pursuing Clean Water Management Trust Fund grants for the purchase and acquisition of land bordering the ocean or sound/inlet beaches to protect water quality and to provide for public recreational access.

Policy 3.2.B: Outstanding Resource Waters: The Town supports the designation, recognition and protection of those areas defined by the NC Division of Water Quality as Outstanding Resource Waters (ORW). ORWs are unique and special waters having excellent water quality and being of exceptional state or national ecological significance.

Policy 3.2.C: Quality Use Rating: The Town shall undertake practical efforts to maintain the highest quality use rating possible for area waters.

Policy 3.2.D: Pollution from Wastewater Sources: The Town supports efforts to minimize surface and groundwater pollution from wastewater sources.

Policy 3.2.E: Minimizing Waste Impacts: The Town shall consider opportunities for addressing litter and pet waste, which have a negative impact on water quality and the natural environment.

Policy 3.2.F: Estuarine Shoreline Development Activity: Development may be permitted in estuarine shoreline areas, provided such activity is consistent with State and local regulations on development activity therein.

Policy 3.2.G: Watershed Restoration: Where practicable, the Town shall encourage protection and enhancement of surface water quality through implementation of Watershed Restoration Plans. As stated previously, water-based recreation helps to support the \$132 million dollar economic impact of tourism in Pender County.

Recommended Action 3.2.G.1: Consider pursuing grant funds to assist in developing future Watershed Restoration Plans. Pursuant to Section 205(j)/604(b) of the Clean Water Act, the Division of Water Resources will award grant funds to Regional Commissions and Councils of Government to carry out water quality management and planning projects, including, but not limited to:

- Identifying most cost effective and locally acceptable facility and non-point source measures to meet and maintain water quality standards;
- Developing an implementation plan to obtain state and local financial and regulatory commitments to implement measures developed to meet water quality standards; and
- Determining the nature, extent, and cause of water quality problems in various areas of the state.

Recommended Action 3.2.G.2: If pursued, ensure that the Watershed Restoration Plan contains the nine minimum elements required to receive EPA Section 319 funds for implementation of capital improvements projects.

Policy 3.2.H: Areas of Environmental Concern: The Town supports the North Carolina Division of Coastal Management and their enforcement of the regulations governing development activity in Areas of Environmental Concern (AECs).

Policy 3.2.I: Protection of Coastal Wetlands: The Town supports the efforts of permitting agencies including the NC Division of Coastal Management and the U.S. Army Corps of Engineers, to conserve and manage coastal wetlands so as to safeguard and perpetuate their biological, social, economic, and aesthetic values. The highest priority is given to conservation of these areas. The second highest priority of use is for those types of development which require water access and cannot function elsewhere.

Policy 3.1.J: Marsh Damage from Bulkhead Installation: The Town supports state and federal policies addressing damage to coastal wetlands due to bulkhead installation.

Recommended Action 3.1.J.1: Consider providing outreach and education to homeowners regarding the impacts of failing bulkheads to surface waters and property, as well as the benefits of living shorelines.

Policy 3.2.K: Supporting Fisheries: The Town supports the NC Division of Marine Fisheries and the classification of area waters as worthy of protection.

Policy 3.2.L: Dredging of Inlets and Waterways: The Town supports navigable inlets and waterways to ensure a healthy coastal economy and protect vibrant ecosystems and shall continue to work with relevant stakeholders to regularly maintain the New Topsail Inlet.

Policy 3.2.M: Preserve, Protect, and Enhance Natural Resources: The Town supports preserving, protecting, and enhancing the local area's natural resources including through enforcement of building codes, subdivision and zoning ordinance development and enforcement, and through the consistency provision of the Coastal Area Management Act because the quality of the environment is an important ingredient in overall quality of life.

Policy 3.2.N: Resource Acquisition Efforts: The Town supports resource protection efforts and encourages the acquisition of land parcels with a high resource value by the State of North Carolina or area conservation organizations or land trusts.

Policy 3.2.O: Regional Resource Protection: The Town supports pursuing protection of natural resources in a regional context, with area-wide planning through a process that favors long term goals over short term interests and provides accountability for the implementation of the goals and policies stated herein.

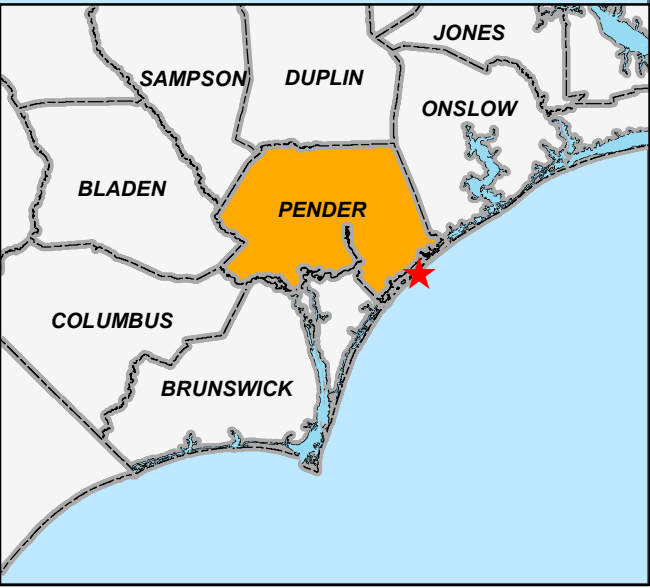
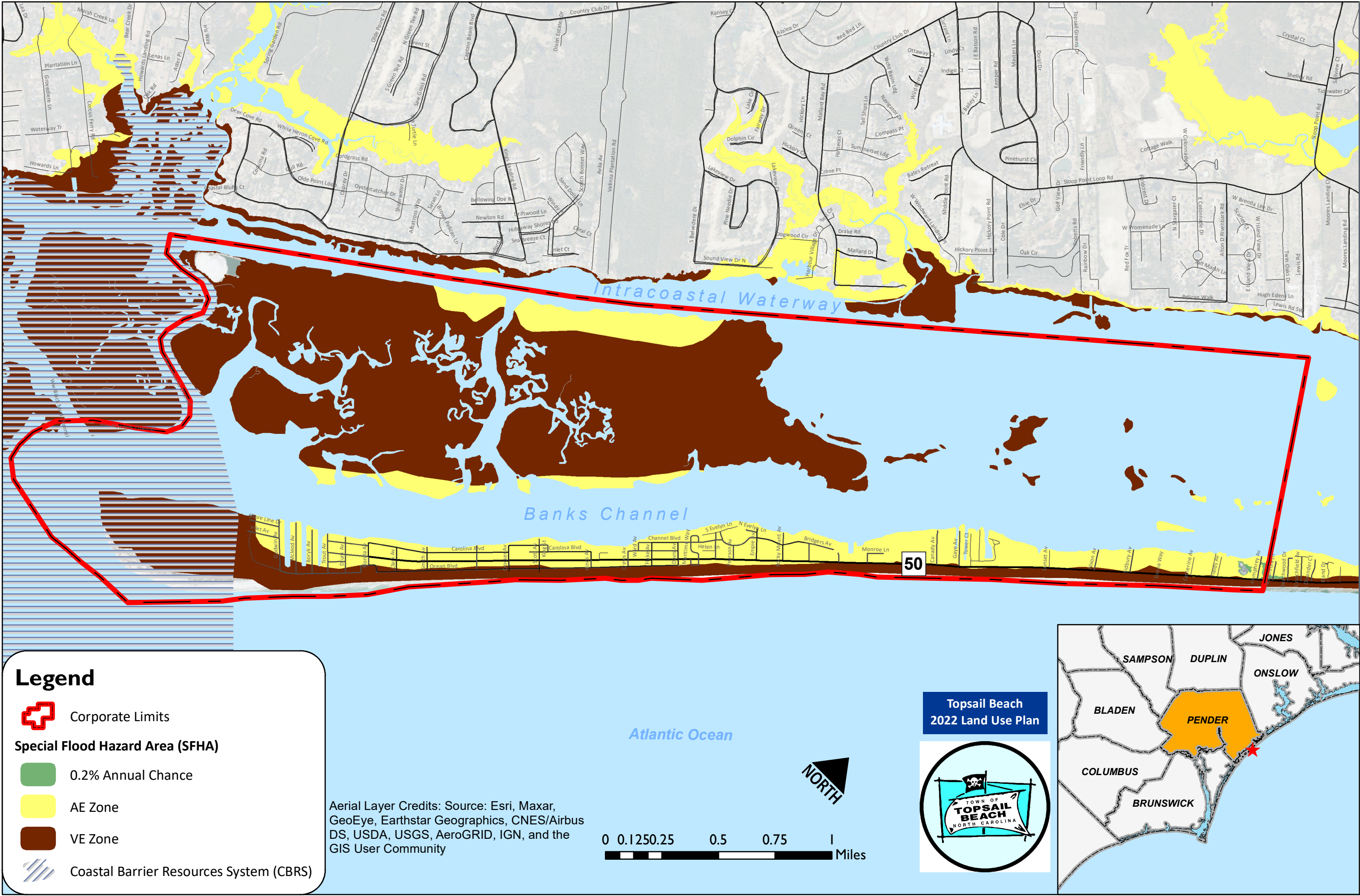
Policy 3.2.P: Protection of Wildlife Habitat: The Town supports the designation of public wildlife sanctuaries in Topsail Beach where supported by data and compatible with public trust access. Privately owned areas designated as wildlife sanctuaries are consistent with Topsail Beach policy.

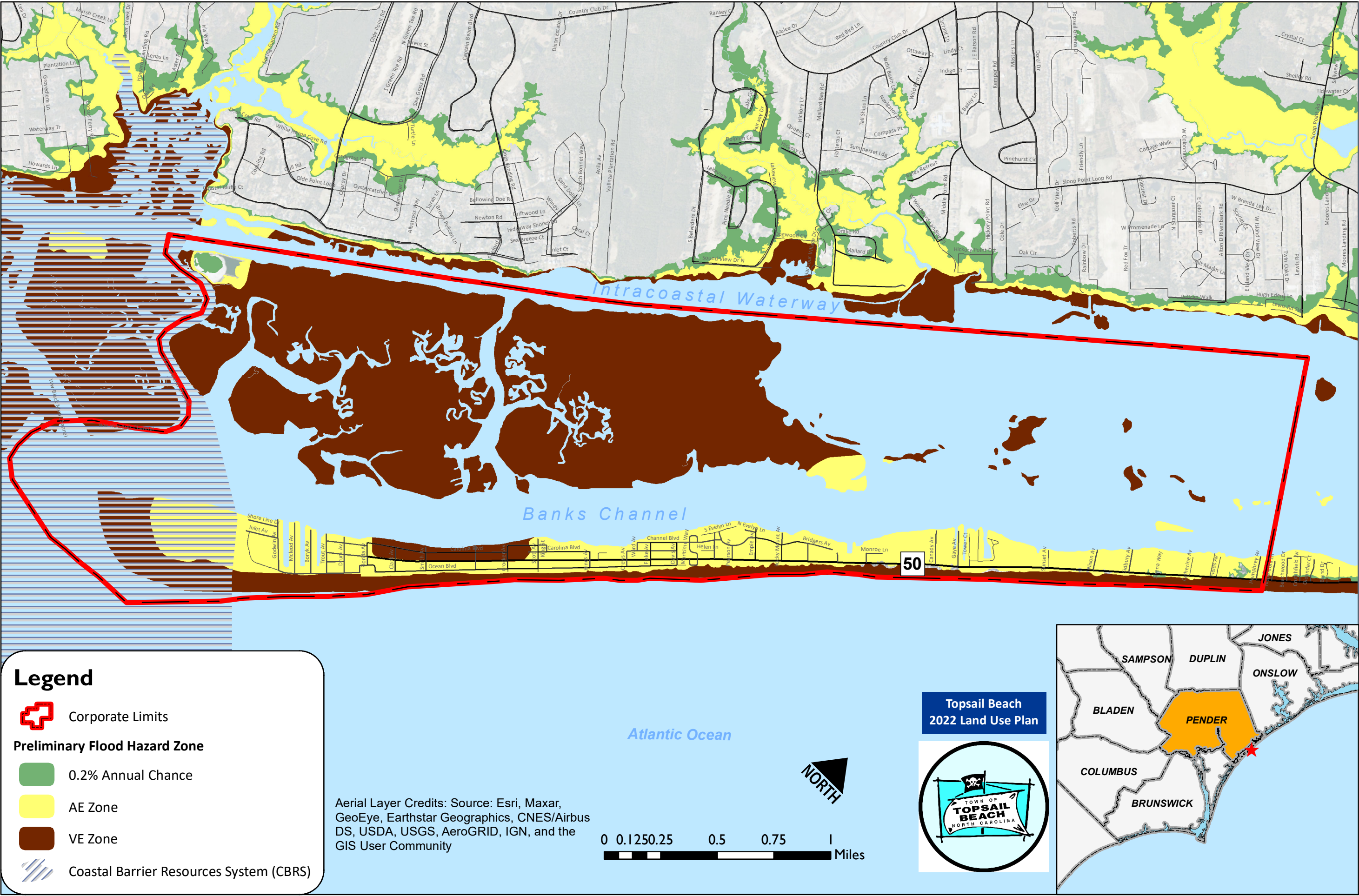
Policy 3.2.Q: Maritime Forest Preservation: The Town supports the maintenance of existing maritime forests and shall maintain ordinances that result in the least practicable disruption to the maritime forest when development occurs.

Recommended Action 3.2.Q.1: Consider opportunities to refine and update Town ordinances protecting the maritime forest. Currently, the Town requires a tree survey of the entire property while only regulating tree removal within the setbacks.

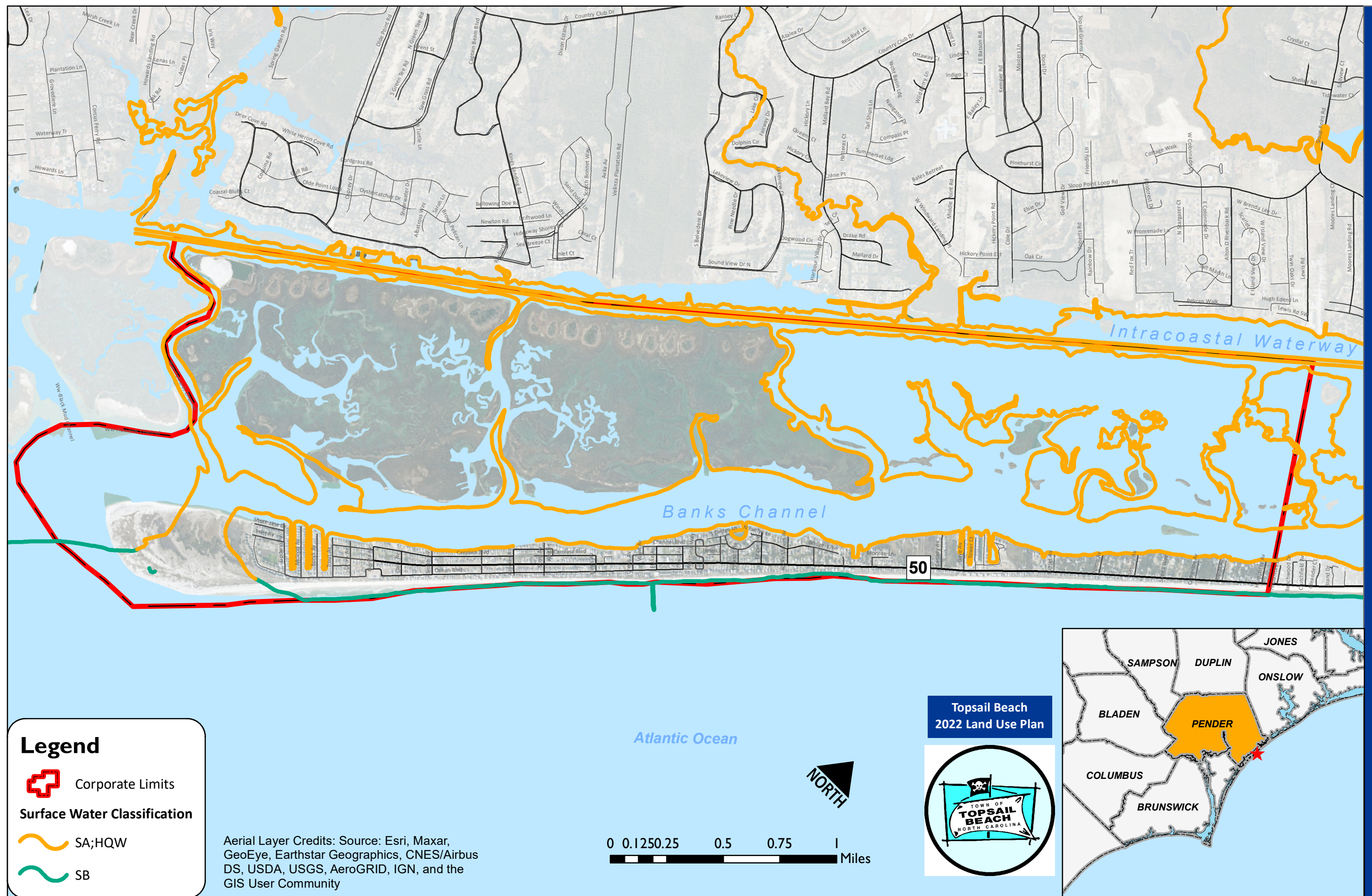
Policy 3.2.R: Protection of Indigenous Wildlife: The Town supports protection of indigenous wildlife species, particularly endangered or threatened species from the negative, or possible life-threatening effects of development.

Recommended Action 3.2.R.1: Consider opportunities for strengthening and enforcing local regulations that protect sea turtles from the impacts of human development, including light sources.

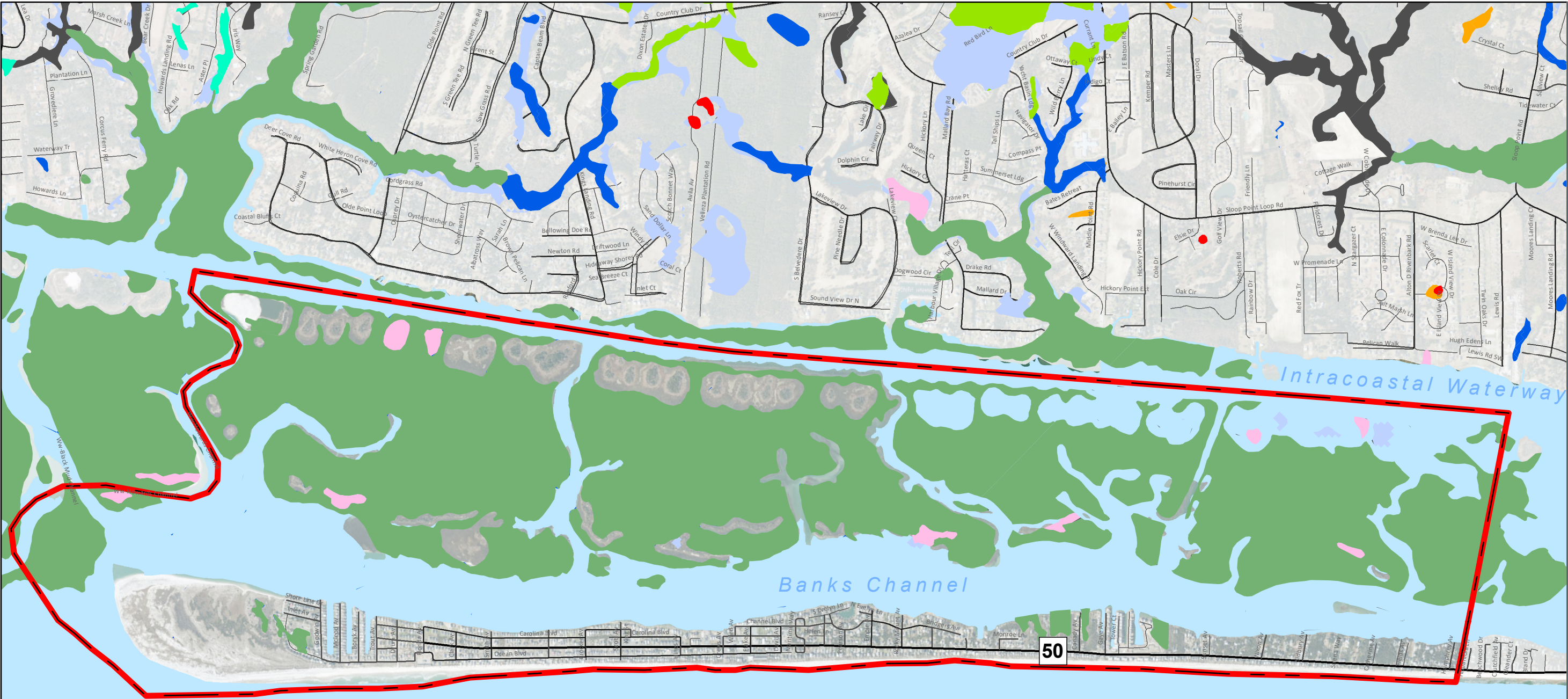






Map 3-2: Preliminary Flood Hazard Areas



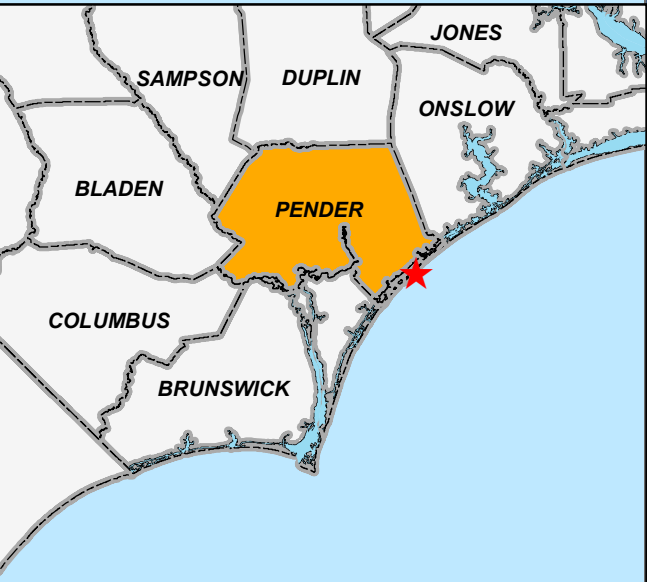
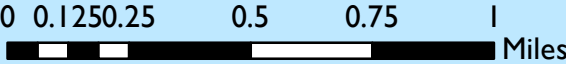
Map 3-3: Surface Water Classifications



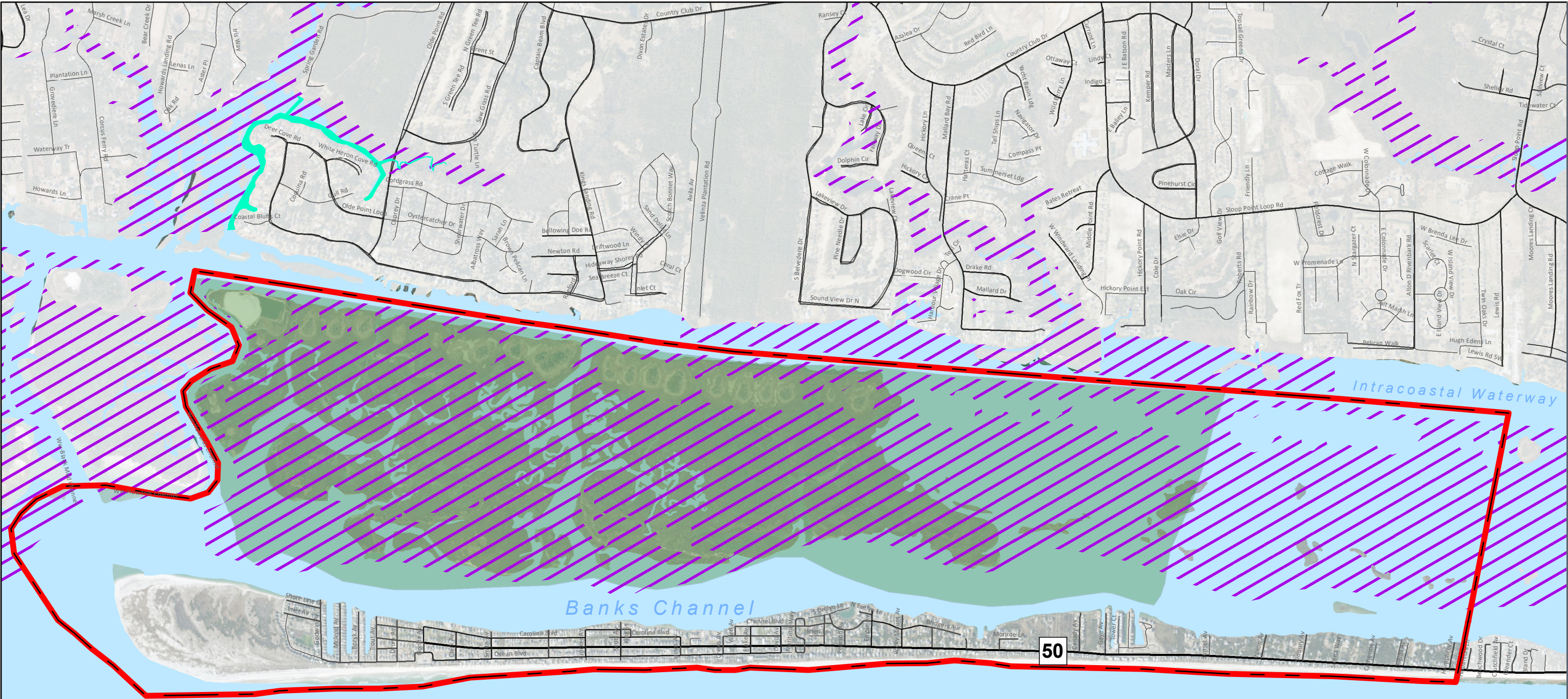
Legend

-  Corporate Limits
-  Coastal Wetlands
- Non-Coastal Wetlands**
-  Depressional Swamp Forest
-  Estuarine Shrub/Scrub
-  Hardwood Flat
-  Headwater Swamp
-  Human Impacted
-  Managed Pineland
-  Pine Flat
-  Riverine Swamp Forest





Aerial Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Map 3-4: Wetlands




Legend

-  Corporate Limits
- Fish Nursery Areas**
 -  Primary Nursery Areas
 -  Permanent Secondary Nursery Areas
- Natural Heritage Natural Areas**
 -  Topsail Sound Maritime Forests

Aerial Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 0.1250.25 0.5 0.75 1 Miles

 NORTH



Map 3-5: Nursery and Natural Areas

CHAPTER 4: ANALYSIS OF COMMUNITY FACILITIES

The CAMA planning guidelines encourage coastal communities to evaluate the location and adequacy of community facilities that protect important environmental factors and that attract land development in the coastal area. The facilities typically found in coastal communities include:

- water supply systems;
- wastewater systems;
- stormwater systems;
- transportation systems;
- fire and EMS services; and
- recreational opportunities & public access facilities.

This chapter provides analysis and information pertaining to each item listed above.

WATER SUPPLY SYSTEM STATUS AND TRENDS

In North Carolina, every governmental, regional, or private agency that provides water service to the public is responsible for preparing a Local Water Supply Plan (LWSP). The Water Supply Plan is reviewed by the North Carolina Division of Water Resources to ensure adequate supplies are provided to avoid shortages and to be available during emergencies (e.g. fires). Information in this section is sourced from the Town's 2021 LWSP unless otherwise stated.

WATER SUPPLY SYSTEM

In Topsail Beach, the water supply system receives water from the Castle Hayne and Pee Dee aquifers. As of 2021, the Town had 1,516 total connections – 1,480 residential connections, 22 commercial connections, and 14 institutional connections. The finished storage capacity of the Town's water system is 600,000 gallons. In total, there are approximately 14 miles of water distribution lines serving the Town, ranging in diameter from two to 12 inches.

WATER DEMAND STATUS AND TRENDS

Community water systems need to provide an adequate and reliable source of treated water for consumer consumption and commercial use. In addition, water has to be made available for structural fire suppression and for other emergencies. According to FEMA, water supply "needs to be provided during all periods of each day, day of the week and week of the year for consumer use plus the capability to meet required fire flows when a serious fire erupts in a community."

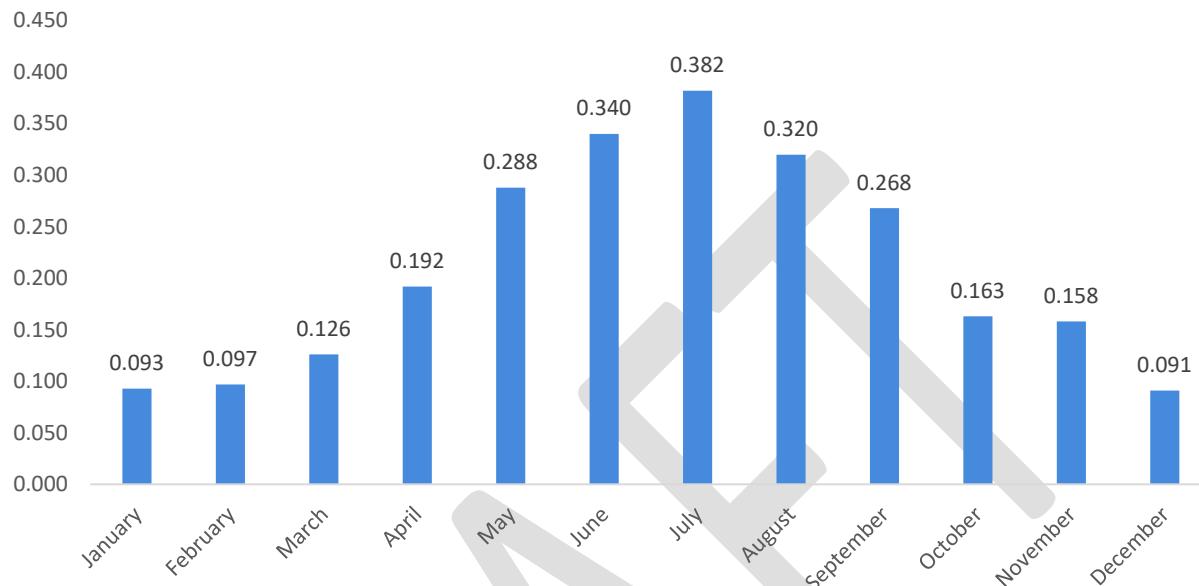
In 2021, December accounted for the lowest average water demand at 0.091 Million Gallons Daily (MGD) and July, the greatest, at 0.382 MGD. Figure 4.1 displays water consumption figures for 2021. The trends in demand for potable water coincide with seasonal visitation and irrigation patterns.

For planning purposes, the Town must also account for peak day usage. In 2021, the peak day usage occurred in July, with a total flow of 0.613 million gallons – approximately 102% of total capacity.

However, this level of demand was not sustained for a period of many consecutive days. The Town does not anticipate that peak demand will exceed capacity over the next decade.

Figure 4.1: Average Daily Water Use in Million Gallons per Day (MGD)

Source: NC Division of Water Resources,



According to the 2021 LWSP, Topsail Beach will have the water capacity to meet anticipated demand through the year 2070 for all its existing and future customers. In 2021, the town was using 36% of their total water supply. This calculation includes estimated population projections for seasonal and permanent residents, but is based only on the annual average daily usage. By the year 2070, future water demand will account for 52% of the anticipated 0.701 million gallons per day (MGD) of capacity. It should be noted that this estimate is based upon the annual average daily demand and does not account for the peak day usage or additional burden a significant fire might bring to the system.

The Town has an emergency agreement to buy and sell water to the Town of Surf City. This agreement was not utilized in 2021.

WASTEWATER SYSTEM STATUS

Topsail Beach does not have a centralized wastewater system, instead relying on private waste disposal methods regulated by Pender County Environmental Health and the State of North Carolina. As the needs of Topsail Beach evolve, the Town continues to evaluate available options for managing wastewater treatment and disposal.

STORMWATER SYSTEM

Stormwater infrastructure within the Town of Topsail Beach is either operated by the NC Department of Transportation (DOT) or private entities. New development within Topsail Beach is subject to the Town's development regulations, which require a stormwater management plan for development not subject to a high density stormwater permit issued by the State.

TRANSPORTATION SYSTEMS

The Surf City Bridge, located in the Town of Surf City, provides the closest overland method of ingress and egress to the Town of Topsail Beach. Accordingly, traffic on the bridge during summer months is common as is traffic congestion at intersections in and adjacent to the Town. The bridge, roadway design capacity, and alternative transportation are discussed in the following sections.

SURF CITY BRIDGE

The Surf City Bridge, which connects Topsail Island to the Mainland, is operated and maintained by the North Carolina Department of Transportation (NCDOT). In September 2016, NCDOT began construction on a bridge to replace the existing swing bridge over the Intracoastal Waterway on NC Hwy 50/210. The previous bridge was over 60 years old and was replaced with a new bridge with a 65-foot vertical clearance which eliminated the need for a swing bridge to let large water vessels through. Additionally, the new bridge has bicycle lanes and protected sidewalks. The project finished in December of 2018.

Figure 4.2 Surf City Bridge

Source: Cape Fear Council of Governments



TRAFFIC COUNTS

The annual traffic count used for planning purposes is called the Annual Average Daily Traffic Count (AADT). The AADT is the number of vehicles passing in both directions over a single point on a roadway over the course of a year divided by the 365 days in a year. For example, if 50,000 vehicles pass a single point on the road in a year, the AADT is 137 vehicles per day ($50,000 / 365 = 137$). It must be noted that these annual traffic counts are averages, and certain peak season days produce traffic counts well in excess of the AADT count. Seasonal traffic counts are of particular concern in Topsail Beach. However, in 2008, the NCDOT Traffic Survey Group suspended standalone seasonal traffic counts. As a result, only AADT counts are available. Peak volumes are included in the AADT, but are not available separately for comparison purposes.

To evaluate transportation and roadway deficiencies, the AADTs are typically compared to a road's design capacity. Traffic on key segments of various roadways is counted and calculated annually and compared to a standard road design capacity based on that roadway's individual type. For example, a two-lane roadway has a different design capacity than a roadway that has two-lanes with a center turn lane.

In Topsail Beach, the highest AADT counts are found on North Anderson Boulevard (NC Hwy 50) from the Town's border with Surf City to near the intersection with Nixon Avenue, which the NCDOT reports has an AADT of 4,700 in 2020. The next highest counts are found on the remainder of Anderson Boulevard to the end of traffic counts at Florida Avenue, which has an AADT of 3,200. See Map 4.1 for more information.

None of the roadways within Topsail Beach have an AADT which exceeds the current capacity. However, if accounting for seasonal increases in population and traffic, then there may be roadways that exceed capacity or approach it during the summer months. It should be noted that NCDOT designs roadways for AADT, not peak traffic counts.

NON-MOTORIZED TRANSPORTATION

Non-motorized transportation is increasingly important nationwide and particularly for tourist destinations such as Topsail Beach. Non-motorized transportation refers to alternative travel choices such as cycling or walking. While non-motorized transportation is often considered a recreational activity, it can also be utilized to travel from point A to B for utilitarian purposes.

While there is a side path along some portions of Anderson Boulevard, some residents have identified a need for expanding cycling and pedestrian travel options in Topsail Beach. In 2019, the Town adopted a Walks & Bikes plan with recommendations for future improvements to the bicycle and pedestrian network within the community, with a focus on furthering the safety and utility of the infrastructure along Anderson Boulevard.

EMERGENCY SERVICES

The Topsail Beach Fire Department provides firefighting and other emergency services to Topsail Beach, while the Topsail Beach Police Department provides law enforcement services within the Town.

Emergency Medical Services (EMS) are provided to the Pender EMS and Fire, which provides service across Pender County. EMS services in Topsail Beach are based out of Station 4 within the Town. During the summer season, this station includes an ocean rescue team.

RECREATIONAL OPPORTUNITIES, PUBLIC ACCESS FACILITIES, AND BOATING ACCESS FACILITIES

The Coastal Area Management Act (CAMA) considers public access facilities to be one of the key components of a coastal community's infrastructure. This section of the Land Use Plan inventories public access facilities and identifies potential public access sites, so that the Town may discuss and establish policies and objectives to further the goal of maximizing and maintaining public access.

PARKS AND RECREATION

The Town of Topsail Beach is actively engaged in providing parks and recreational opportunities for the community through the Town Center Park and Bush Marina in addition to maintaining public access to the sound and ocean. The Topsail Beach Parks and Recreation Advisory Board was recently established with a separate membership from the Town's Planning Board to provide additional focus on the future of parks and recreation within Topsail Beach.

Topsail Beach Town Center

Topsail Beach Town Center is located at 624 South Anderson Boulevard. The park offers two pickleball courts, a half basketball court, open recreational space, restrooms, two picnic shelters and a playground.

Bush Marina

Bush Marina, located at 912 South Anderson Boulevard, is a Town-owned facility with a fee-based boat ramp and wet slips accessed from the sound side of the Island. Limited parking and a small store are also part of the marina operation.

EXISTING PUBLIC ACCESS SITES

The Town has 22 public beach access sites and 11 public sound access sites along the approximately five-and-a-half-mile length of the Town, equating to one access site roughly every 880 feet. See Table 4.1 and Map 4.2 for more information.

Table 4.1 Public Access Locations

Source: Town of Topsail Beach

Access	Location	Parking Availability
Beach Access		
#1	Between 403 & 405 N Anderson	No parking available
#1A	Catherine Ave	10 spaces (ADA-accessible)
#2	Between 509 & 511 N Anderson	No parking available
#2A	Between 799 & 801 N Anderson	No parking available
#3	Between 915 N Anderson & Bldg F of Queen's Grant	12 parking spots available
#4	Gaye Ave	No parking available
#5	Barwick Ave	6 parking spots available
#6	Rocky Mount Ave	12 parking spots available
#7	Empie Ave	8 parking spots available
#8	Haywood Ave	16 parking spots available
#9	Davis Ave	7 parking spots available
#10	Crews Ave	5 parking spots available
#11	Hines Ave	8 parking spots available
#12	Scott Ave	9 parking spots available
#13	Crocker Ave	9 parking spots available
#14	Darden Ave	14 parking spots available (ADA accessible)
#15	Smith Ave	6 parking spots available
#16	South Side of Sea Vista	1 parking spot available (ADA accessible)
#17	Trout Ave	Street parking
#18	Boryk Ave	3 parking spots available and street parking
#19	McLeod Ave	Street parking
#20	Godwin Ave	Street parking
Sound Access		
#1	Shoreline Dr (canoe & kayak)	28 parking spots available (ADA accessible)
#2	Godwin Ave	4 parking spots available
#3	Trout Ave	3 parking spots available
#4	Smith Ave (canoe & kayak)	4 parking spots available
#4A	Darden Ave	2 parking spots available
#5	Scott Ave (canoe & kayak)	3 parking spots available

#6	Hines Ave	7 parking spots available
#7	Haywood Ave	No parking available
#8	Empie Ave (canoe & kayak)	No parking available
#9	Rocky Mount Ave (canoe & kayak)	No parking available
Unnumbered	Monroe Ave	No parking available
Unnumbered	Nixon Ave	No parking available

In addition to parking facilities directly associated with public access locations, Topsail Beach has several other public parking areas including around the water tower and within the Town Center.

GOALS, OBJECTIVES, AND POLICIES

INTRODUCTION

The Town has established a set of land use and development related policies to act as guidelines during any official decision making process. These policies and goals provide citizens, property owners, and developers with a predictability of official actions. Town policies in this chapter relate to infrastructure and community facilities. Two CAMA management topics are covered in the policy section herein: Infrastructure Carrying Capacity and Public Access and Recreation.

It should be noted that these topic areas are developed as part of the Division of Coastal Management's 7B Land Use Planning Guidelines.

Refer to Appendix A for Definitions of actions words contained within the policy section.

INFRASTRUCTURE CARRYING CAPACITY

Goal 4.1: To ensure that public infrastructure systems are appropriately sized, located, and managed to serve the Town's population while ensuring the quality and productivity of the AEC's and other fragile areas are protected and restored.

Objective 4.1: Ensure that the location and capacity of public infrastructure is consistent with the Town's growth and development goals.

Policy 4.1.A: Provision of Municipal Services: The Town works to provide appropriate municipal services to support existing development and to encourage desired development. The provision of services shall be based on the Town's financial capacity and the economic feasibility of those services.

Policy 4.1.B: Municipal Water System: The Town shall maintain and improve the municipal water system so as to provide sufficient capacity for the sustained and continued growth of the community and adequate fire flow.

Recommended Action 4.1.B.1: Monitor water consumption figures and consider all public and private options for future water supply.

Policy 4.1.C: Mandatory Connection: All new development shall be connected to the public water system.

Policy 4.1.C: Groundwater Conservation: The Town considers its groundwater supply as extremely important and encourages conservation and re-use of water resources whenever possible.

Recommended Action 4.1.C.1: Consider opportunities for implementing alternative measures for conservation such as the recycling of water or xeric landscaping.

Recommended Action 4.1.C.2: Continue to encourage homeowners to adopt practices that lead to water conservation using the Town's website, newsletters, and occasional mail inserts.

Policy 4.1.D: Aquifer Protection: The Town supports protection of regional groundwater aquifers through land use and development decisions, working with other area local governments and agencies, monitoring wells for saltwater intrusion, and protection of groundwater recharge areas.

Policy 4.1.E: Enforcement of Groundwater Protections: The Town supports the NC Division of Water Quality's efforts to enforce violations and to offer assistance to those persons or entities interested in construction and development type activity which has a potential to effect groundwater resources. The Town fully supports the NC Division of Water Quality's (NC DWQ) rules regarding development activity near groundwater source areas. Town policy is to enhance the protection of these areas and to provide for groundwater recharge areas consistent with NC DWQ's rules. The Town will support and report any violation of those rules designed by the NC DWQ to protect this resource.

Policy 4.1.F: Support for Water Conservation: The Town supports water conservation efforts. In cases where residents and visitors to the Town will be advised on water conservation procedures or actions, distinctions will be clearly made between mandatory (or required) conservation measures and voluntary conservation measures.

Policy 4.1.G: Wastewater Service: All new development shall be connected to a legally permitted wastewater disposal method.

Recommended Action 4.1.G.1: Continue to consider alternatives to private septic systems for the treatment and disposal of wastewater as practical.

Policy 4.1.H: Mitigating Failing Septic Systems: The Town shall work with the Pender County Health Department, and other agencies, on the education of citizens concerning the operation and long-term maintenance of septic systems. The Town supports prevention of the spillage and runoff of sewage from malfunctioning septic tanks or systems into the waters of Topsail Sound.

Policy 4.1.I: Stormwater Runoff: The Town supports NC Division of Water Quality regulations regarding stormwater runoff resulting from development activity. It is Town policy to require appropriate proactive and corrective drainage improvements where intensive growth and development is proposed.

Recommended Action 4.1.I.1: Consider opportunities to amend the Town's ordinances regarding stormwater controls to clarify or revisit relevant procedures and requirements. Such amendments may include, but are not necessarily limited to, specification of qualifying pervious materials or the amount of water required to be collected on site

Policy 4.1.J: Stormwater Impacts: New construction and substantial improvements shall minimize stormwater impact for established residents.

Policy 4.1.K: Collaboration on Stormwater Issues: The Town shall work with neighboring jurisdictions regarding stormwater issues when practical, seeking to establish a cooperative environment within which successful solutions to mutually recognized problems may be explored and implemented.

Policy 4.1.L: Transportation: The Town supports giving the priority to safety when considering the construction and maintenance of roadway systems. The Town shall seek to collaborate with other state and local stakeholders to have an active voice in area transportation issues concerning both the Pender County mainland and adjacent municipalities.

Policy 4.1.M: Roadway Stormwater Impacts: The Town shall allow publicly maintained public rights-of-way and easements to be used for the purpose of correcting stormwater runoff problems, while seeking drainage improvements to state system roads and considering drainage improvements to municipal streets in Topsail Beach

Recommended Action 4.1.M.1: Consider opportunities to work with the NC Department of Transportation and NC Division of Water Quality to implement solutions on future transportation projects that minimize stormwater impacts to the Town.

Policy 4.1.N: Mitigating Traffic Congestion: The Town shall work with the NC Department of Transportation and others, as necessary, to consider solutions to vehicular traffic congestion within and near the municipality.

Policy 4.1.O: Road Maintenance: The Town shall continue to maintain the roads which are a part of the municipal road system.

Policy 4.1.P: Pedestrian and Bicycle Facilities: The Town supports the construction and enhancement of pedestrian and bicycle facilities to help alleviate vehicular traffic, provide additional recreational opportunities, and improve public access to the ocean and sound. This policy shall include maintenance of the Town's existing pedestrian path.

Recommended Action 4.1.P.1: Consider opportunities to implement the Town's adopted Bikes and Walks plan to improve bicycle and pedestrian infrastructure within Topsail Beach.

Policy 4.1.Q: Maintaining Adequate Emergency Response: The Town will provide support to police and fire services as needed to keep pace with the demands of the community.

Recommended Action 4.1.Q.1: Consider opportunities to enhance and improve emergency response capabilities through grants and other cost-efficient measures.

Recommended Action 4.1.Q.2: Consider opportunities to protect property within the Town threatened by storm or natural erosion through multiple methods of storm hazard mitigation including administration and enforcement of the building code, zoning regulations, and intergovernmental cooperation and beach nourishment.

Policy 4.1.R: Collaboration with Neighboring Service Providers: In times of emergency, the Town shall assist neighboring jurisdictions and provide, where possible, support for police, fire, and emergency services, as well as municipal water supply when possible.

Recommended Action 4.1.R.1: Consider opportunities to review and update the Town's mutual aid agreements with other communities.

Policy 4.1.S: Public Infrastructure Investments: The Town supports long-term planning for public infrastructure and proactive measures to provide excellent public services to residents and visitors to Topsail Beach.

Recommended Action 4.1.S.1: Consider opportunities to strengthen and formalize the Town's capital planning process, including identification of instances when it may be more economically advantageous in the long run to purchase rather than lease equipment.

PUBLIC ACCESS AND RECREATION

Goal 4.2: Maximize public access to the beaches and public trust waters of the Town of Topsail Beach and maximize recreational opportunities for residents and visitors.

Objective 4.2: 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 and provide recreational opportunities for residents and visitors alike.

Policy 4.2.A: Existing Access Facilities: The Town supports public access to the oceanfront and other waterways and will maintain and improve existing public access facilities. Where possible, the Town should seek funding from federal, state, and county sources to fund these improvements.

Recommended Action 4.2.A.1: Continue to consider ways to improve existing access sites and improve ADA access.

Recommended Action 4.2.A.2: Consider available alternatives for funding beach access opportunities for visitors and residents.

Policy 4.2.B: Maintenance of Public Access: The Town shall effectively maintain the municipal system of public beach access areas in such a way as to provide neighboring residents with a clean and safe, nuisance free, municipal neighbor. Noise, trash or other debris, junk, and rotting or dangerous or unsightly facilities shall be promptly addressed by the municipality.

Recommended Action 4.2.B.1: Consider opportunities for collaborating with local residents and businesses to maintain the cleanliness of public access sites.

Policy 4.2.C: Enhancement of Public Access: The Town shall continue to maintain, and consider opportunities for improvements to, existing public beach and sound access facilities.

Recommended Action 4.2.C.1: Consider opportunities to enhance access to public trust waters through the acquisition, development, and redevelopment of beach and sound access areas and parks.

Policy 4.2.D: Public Access Through New Development: Topsail Beach shall require development projects to make provisions for a comprehensive network of public water (ocean and sound side) access facilities in neighborhoods and through a public street network. Town policy is to continue requiring new streets to be public.

Policy 4.2.E: Off-Road Vehicles: The Town shall not allow vehicular traffic over the ocean front dunes within the Town limits at any time except at specified access points. Additionally, vehicular traffic shall be restricted in public trust areas and government owned or managed ecologically sensitive locations except as established by the Topsail Beach Board of Commissioners. This policy is not applicable to public works projects or emergency vehicles.

Policy 4.2.F: Ocean & Sound Access: The Town equally supports the provision of shorefront access to both the ocean and sound to thereby offer a complete island experience to residents and visitors.

Policy 4.2.G: Boat Slips & Ramps: The Town shall continue to maintain Bush Marina as practical; seeking to provide for, or allowing for the provision of, boat ramp access opportunity in appropriate locations should existing facilities become unusable.

Policy 4.2.H: Shoreline Public Trust Access: The Town shall permit the use of shoreline and public trust waters to provide benefits to the public, including maintenance of continual access around the south end of Topsail Island along the beach. Should private docks or piers be established on the south end, provisions shall be made to maintain pedestrian access along the beach.

Policy 4.2.I: Identification of Access Areas: To the extent practicable, the Town shall clearly and legally identify the location and extent of all public access areas. These access areas are to be maintained free of encroachment by neighboring property owners and signs shall be installed at all public access areas designating these properties as public beach accesses.

Policy 4.2.J: Dune Protection: The Town prohibits all traffic on dunes except at designated access points and upon ramps or walkover structures.

Policy 4.2.K: Public Access Frequency: The Town shall continue to follow, and consider opportunities for exceeding, applicable guidelines relating to the frequency of public accesses.

Policy 4.1.L: Support for the Coastal Resource Commission Access Program: The Town supports the Coastal Resources Commission's public access program and recognizes the need to plan for all types of recreational facilities in appropriately sited locations.

Policy 4.2.M: Non-Motorized Water Vessels: The Town supports the safe use of non-motorized water vessels in Topsail Sound.

Policy 4.2.N: Community Appearance: The Town supports the development of a unified commercial district appearance the downtown area and the improvement of community appearance in all seasons of the year.

Recommended Action 4.2.N.1: Consider opportunities to beautify the entrance to the community and public streets with appropriate signage, landscaping, and other amenities.

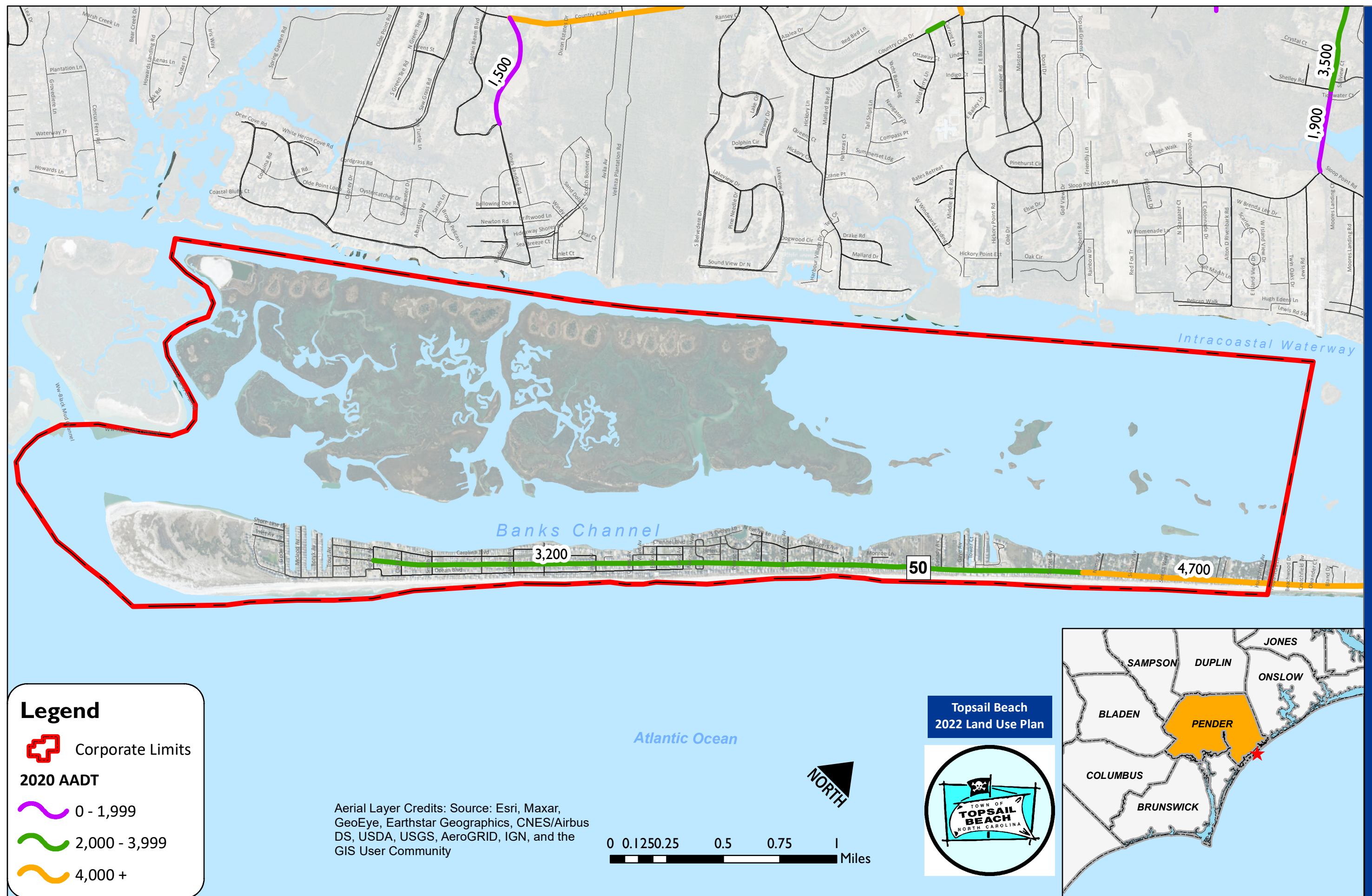
Policy 4.2.O: Expanding Recreational Opportunities: As practical, the Town shall provide public recreational facilities and open space to serve residents and seasonal visitors in accordance with adopted plans and identified needs.

Recommended Action 4.2.O.1: Consider opportunities to leverage county, state, federal and private funding assistance sources to plan for and expand passive and active parks, recreational lands, and public water access.

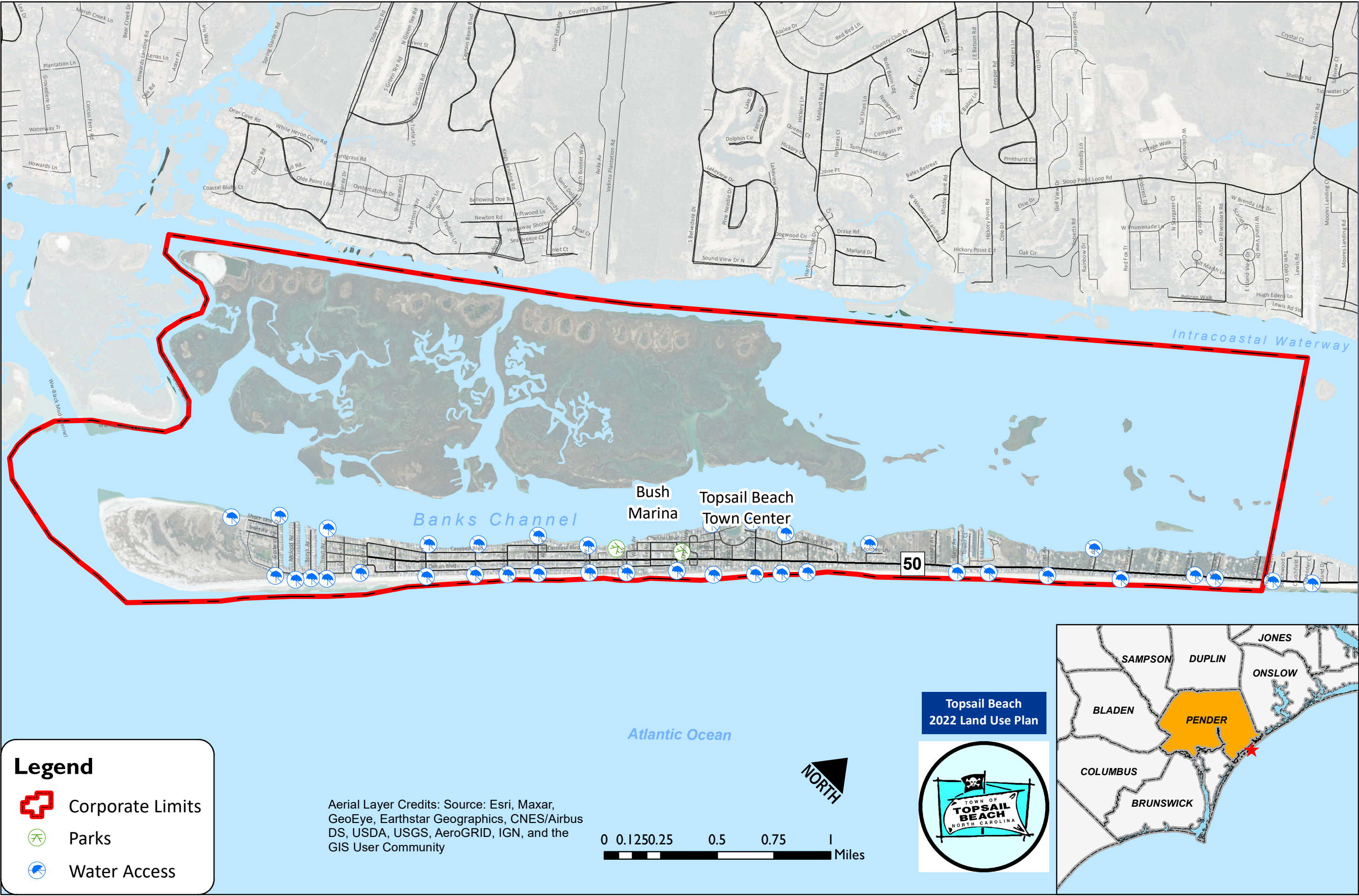
Recommended Action 4.2.O.2: Consider the creation of a long-range Beach & Sound Access Plan and a Master Plan for Recreation

Policy 4.2.P: Coordination of Recreation Offerings: The Town supports collaboration with the Pender County Parks and Recreation Department, and nearby municipalities, to help meet municipal and regional recreational needs including beach and estuarine water access.

Policy 4.2.Q: Regional Collaboration: The Town supports the efforts of regional partners to grow and enhance the tourism and film industries in southeastern North Carolina.



Map 4-1: Average Annual Daily Traffic (AADT)



Map 4-2: Recreation Facilities

Chapter 5: LAND USE AND GROWTH MANAGEMENT

This chapter outlines existing development patterns in the Town of Topsail Beach and further classifies what is on the ground today. In addition, the chapter provides a brief build-out analysis and delineation of available vacant land. To conclude, the future land use map and narrative outline of desired development patterns and guidance for land use decisions over the next ten to twenty years. Goals, policies, and recommended actions are provided relating to land use and development at the end of the chapter.

EXISTING LAND USE ANALYSIS

This section provides local elected officials, appointed boards, citizens, and staff with a snapshot of the existing land use patterns in the Town. An assessment of these patterns, and the identification of available areas for development, can help forecasting where, what type, and how much development may occur in the future.

This section will also assist in identifying current and potential land use conflicts, such as residential uses near environmentally sensitive areas or commercial areas. In addition, vacant land where new development is expected and areas where in-fill or redevelopment is feasible and/or desirable will be identified. The information in this section will also assist in establishing the Town's Future Land Use Map.

SOURCE OF EXISTING LAND USE ANALYSIS AND MAP

The Existing Land Use Map (Map 5-1) and tables were created by the Cape Fear Council of Governments using Pender County Tax Records updated in 2022 as well as full color orthophotos (map quality aerial photos).

LAND USES IDENTIFIED IN THE TOWN

The existing land uses in the planning jurisdiction include:

- Single-Family Residential
- Duplex
- Multi-Family
- Common Area
- Commercial
- Institutional (includes churches, government facilities, fire/EMS, and utilities)
- Undeveloped
- Marsh/Spoil

EXISTING LAND USE

The Existing Land Use Table (Table 5.1) provides a breakdown of the planning jurisdiction and the rest of the study area by each particular land use category. The land use classifications are summarized by the total number of parcels and respective acreage found within Topsail Beach. The existing land use categories are also classified throughout the entire planning jurisdiction.

Table 5.1: Existing Land Use

Source: Cape Fear Council of Governments GIS, Pender County Tax Records

Land Use Type	Parcel Count	Acres	Percent of Total Acreage
Single Family Residential	1,194	244.21	28.96%
Duplex	137	7.38	0.88%
Multi-Family	70	3.27	0.39%
Common Area	41	37.64	4.46%
Commercial	56	7.03	0.83%
Institutional	11	3.63	0.43%
Undeveloped	367	186.88	22.16%
Marsh/Spoil	5	353.10	41.88%
Total	1,881	843.14	100.00%

According to the existing land use analysis, the largest land use category within the planning jurisdiction is marsh/spoil based on tax records. However, on the island itself, single family residential is the most prevalent use of land. Multi-family and institutional uses account for the smallest proportion of land within the Town.

BUILD-OUT ANALYSIS

Based on an analysis of undeveloped land by zoning district, it is possible that within Topsail Beach an additional 466 dwelling units could be constructed at build-out with the Town's current regulations. It should be noted that a build-out analysis calculation is typically based upon the total vacant acreage and the assumption that it will be dedicated solely to single-family residential uses. Current zoning rules permit standalone residential uses within both of the Town's commercial zoning districts. As such, it is feasible that much of the commercially zoned land could be developed for residential purposes. As stated previously, much of land within Topsail Beach has already been developed for residential purposes.

Table 5.2: Vacant Land in Topsail Beach by Zoning District

Source: Cape Fear Council of Governments GIS, Pender County Tax Records

Zoning District	Parcels	Acres	Potential Dwelling Units*/**
B-1 Central Business	25	3.76	25
B-2 Restricted Business	10	2.06	10
C-4 Conservation – Inlet Area	1	110.35	0
PRD-1 Planned Residential Development Multifamily	11	0.45	11
R-1 Residential – Ocean Front	59	12.41	73
R-2 Residential – Sound Front	70	26.76	146
R-3 Residential – Canal Lots	23	3.32	33
R-4 Residential – Interior Lots	168	27.77	168
Total	367	186.88	466

*Parcels of less than half an acre in size are presumed to be developed as one dwelling unit; parcels equal to or greater than half an acre are presumed to require 30% of acreage for right-of-way, open space, and other requirements of the subdivision process.

**Dimensional and environmental constraints, in addition to required infrastructure and open space, may limit the number of units

Within the Town, there are approximately 186.88 acres of undeveloped land – much of which is zoned for residential uses [See Map 5-2]. If all the undeveloped land were developed for single-family residential purposes where permitted, then an additional 466 residential units could be built. This would equate to an additional 3,238 persons – during the summer months – based upon similar proportional occupancy patterns as were utilized to estimate the current peak seasonal overnight population in Table 2.4. When added to the current peak seasonal overnight population estimated in Chapter 2 (9,839), the total estimated peak seasonal overnight population at build-out is 13,077. This estimate does not include day visitors.

It should be noted that these projections are based on the assumption that every available acre of land would be developed residentially, with each residence hosting vacationers during the season. It is unlikely that this scenario will occur within the time horizon of this plan – if ever. However, the analysis provides an understanding of the level of demand for services that may be expected if current conditions are extrapolated into the future.

IDENTIFICATION OF LAND USE CONFLICTS

This subsection identifies future land uses that may conflict with environmentally sensitive areas or regulatory constraints. Identifying potential conflict areas is done by comparing the vacant land uses identified in this section with CAMA Areas of Environmental Concern (AEC) and coastal wetlands in Chapter 3. As stated in Chapter 3, wetlands serve important and useful functions. Wetlands mitigate stormwater, maintain water quality by filtering pollutants and sediments, prevent erosion and flooding from plant root systems that hold soils in place, and provide wildlife habitat and scenic areas that increase property values and quality of life. The CAMA 75' Estuarine AEC serves to limit impervious surfaces adjacent to sensitive natural areas such as coastal wetlands and marshes.

Within Topsail Beach, there are potential environmental land use conflicts with vacant land. Vacant lots found adjacent to the Atlantic Ocean, Intracoastal Waterway, Banks Channel, and New Topsail Inlet are the primary points of potential conflict. For more information, refer to Map 5-2. Future development of these lots may encounter environmental and federal/state regulatory constraints.

FUTURE LAND USE

The Future Land Use Classification Map is created to provide guidance for zoning and land use decisions. In Topsail Beach, the Future Land Use Classification Map (Map 5.3) largely resembles the Official Zoning Map and the existing land use pattern in the Town's planning jurisdiction. This is primarily due to the minimal vacant land available and the established pattern of growth that should remain for the foreseeable future. The map visually depicts the Town's long range land use and development goals to be implemented by the Town. The map is intended to show the community's planned future development patterns in distinct areas (i.e. the "future land use classification areas") within the Town's planning jurisdiction. The map also shows the planned future boundaries of those respective areas to ensure that incompatible uses or types of development do not encroach.

To be used in conjunction with the Future Land Use Classification Map are the Future Land Use Classification Guidelines. The guidelines provide the desired land uses and development characteristics for each respective area. While the Future Land Use Classification Map and Guidelines establish goals and policy direction for various areas in the Town, it is the Town's Official Zoning Map and development regulations that codify the actual development regulations within Topsail Beach.

FUTURE LAND USE CLASSIFICATION GUIDELINES

This section defines the future land use classification guidelines for Topsail Beach. The future land use classification includes four (4) land use categories. North Carolina General Statutes require that all rezoning decisions and ordinance amendments be reviewed for consistency with the Town's Land Use Plan, including a statement by the Planning Board and Town Commissioners as to whether the amendment is or is not consistent with the Land Use Plan. However, a finding that a proposed amendment is not consistent with the Land Use Plan shall not preclude such an amendment for consideration by the Town.

The following narrative outlines the key desired development guidelines for each individual future land use classification area depicted on the Future Land Use Classification Map.

IMPLEMENTATION

To implement the guidelines outlined in this chapter, ordinance amendments should be considered where the future land use classification description differs from the requirements of the Land Development Code. It is important to remember that the Future Land Use Map and category descriptions are not regulatory in nature and are to be used as a tool for revising existing development standards and guiding zoning-related decisions. The Land Use Plan does not require that these changes be made, but rather offers guidance in the event that there is a desire to revise development regulations.

HOW TO USE THE FUTURE LAND USE MAP AND GUIDELINES

Upon adoption of this plan, the Planning Board, Board of Commissioners, and citizens of Topsail Beach should reference this chapter in reviewing land use and development related decisions and policy implementation. The Future Land Use Classification Map should be amended if significant changes occur or are proposed to occur. This will aid in consistency with changes to the Town's Official Zoning Map.

Each future land use classification (note: category is used interchangeably throughout this chapter) contained in this chapter is described with a short narrative and supporting development guidelines. The color that identifies that future land use category on the Future Land Use Classification Map is also provided on the page containing the narrative and development guidelines.

ISLAND COMMERCIAL

The Island Commercial future land use category is intended to support permanent and seasonal populations as well as day trippers to the Town. Restaurants, cafes, food markets, and limited retail establishments that are compatible with the character of Topsail Beach are supported. As this area also permits residential development, appropriate standards should be applied to mitigate the impacts of close contact between homes and businesses. The objective of this classification is to preserve existing commercial acreage within the largely residential nature of the Town.

Example Desired Uses:

- Commercial/Retail, especially locally owned small businesses and restaurants.
- Office & Institutional/Government
- Mixed Use
- Water-based Commercial and Recreation
- Single-family and duplex residential uses

Island Commercial

Example Undesired Uses:

- Industrial, manufacturing, and big-box retail

Implementation Considerations:

- Management of impacts from commercial uses on residential property
- Inclusion of bicycle and pedestrian facilities
- Replacement of commercial uses with standalone residential uses (i.e. loss of commercial establishments)

RESIDENTIAL

Where residential development is the primary permitted use within the Town's zoning regulations, or where commercially-zoned land has been predominantly developed in a residential manner, the land has been classified as Residential on the future land use map. It is anticipated that Topsail Beach will continue to be largely residential in character as future development occurs.

Example Desired Uses:

- Single-Family Residential uses
- Two-Family Residential uses at appropriate lot sizes and setbacks

Residential**Example Undesired Uses:**

- Residential development of three or more units except where already approved
- Most-non-residential development

Implementation Considerations:

- Stormwater management
- Standards to manage the construction of large dwellings

CONSERVATION

The Conservation category is intended to preserve and protect fragile estuarine environments from incompatible uses and to encourage public open space/recreational opportunities. Public parks, docks, piers, and other water dependent uses may be allowed that have minimal impacts to environmentally sensitive lands. Lands classified as coastal wetlands should be preserved in perpetuity so as to protect the natural, scenic, and recreational value of these areas.

Example Desired Uses:

- Nature trails
- Preserved open space
- Nature-based educational uses that have limited environmental impact
- Passive recreation areas

Conservation**Example Undesired Uses:**

- Non-residential development except as described above
- Residential development

Implementation Considerations:

- Public access

INLET AREA

The Inlet Area encompasses the southern tip of Topsail Island. Though a frequent destination for individuals seeking to enjoy the ocean and sound, the area is privately owned. Many natural features impact the property including a coastal high hazard area (VE zone), inlet hazard area, Coastal Barrier Resources System (CBRS) area, wetlands, and endangered species. The maintenance of the property in as natural a state as possible while respecting property rights is a high priority for the Town. Any of the limited development that may occur in this area must be considered in the context of the significant natural hazards present on the south end of Topsail Island.

The CBRS area within this portion of Town is of particular importance when considering possible future uses of property within this portion of the community. By federal law, development in these areas is not eligible for federal financial support. This means that any structures may not be covered by the National Flood Insurance Program, and the Town may not extend services to the area without jeopardizing federal funding Townwide. The U.S. Fish and Wildlife Service is primarily responsible for administering the provisions of the CBRS program.

Example Desired Uses:

- Nature trails
- Preserved open space
- Nature-based educational uses that have limited environmental impact
- Passive recreation areas

Inlet Area

Example Undesired Uses:

- Non-residential development except as described above
- Nearly all residential development

Implementation Considerations:

- Maintenance of public health, safety, and welfare in the inlet hazard area and CBRS zone
- Endangered species habitat preservation
- Public trust access

GOALS, OBJECTIVES, AND POLICIES

INTRODUCTION

The Town has established a set of land use and development related policies to act as guidelines during any official decision making process. These policies and goals provide citizens, property owners, and developers with a predictability of official actions. Town policies in this chapter relate to land use and growth management. One CAMA management topic is covered in the policy section herein: Land Use Compatibility.

It should be noted that these topic areas are developed as part of the Division of Coastal Management's 7B Land Use Planning Guidelines.

Refer to Appendix A for Definitions of action words contained within the policy section.

LAND USE COMPATIBILITY

Goal 5.1: Ensure that development and use of resources or preservation of land balances protection of natural resources and fragile areas with economic development, avoids risks to public health and welfare, and are consistent with the capability of the land.

Objective 5.1: Maintain the small town, family-friendly atmosphere at Topsail Beach by encouraging low density residential development, compatible business establishments, preserved natural resource areas, and recreational opportunities.

Policy 5.1.A: Development Conformance with the Land Use Plan: The Town encourages future growth in accordance with the land use policy contained in this document and revising, as necessary, those regulations currently in place to provide consistency with the Town's long-range plan. The Town intends that a new development's impacts on the natural and built (pre-existing) environment should be negligible and that the impacts of all development should take into consideration those factors which will enhance the quiet, small Town character and quality of life enjoyed by the residents of Topsail Beach.

Recommended Action 5.1.A.1: Consider opportunities to review the Town's development regulations to align with Topsail Beach's adopted land use plan.

Policy 5.1.B: Land Use Plan Consistency: The Town generally requires that any official land use and development related actions (e.g. re-zonings, text amendments, and special use permits) remain consistent with the policies adopted in this plan and any other applicable plan. Any actions that are inconsistent with such plans shall require a statement from the Planning Board and Town Commissioners approving such decisions, as to the conditions taken into account in amending the Town's development regulations to meet the development needs of the community, and why the action was reasonable and in the public interest.

Policy 5.1.C: Public Participation: The Town will ensure that all segments of the population in the planning area are informed about land use decisions and have a full and adequate opportunity to participate in planning and decision-making processes.

Recommended Action 5.1.C.1: Consider continuing to utilize standing committees and boards, including the Planning Board, to involve the public in planning decisions whenever practicable.

Recommended Action 5.1.C.2: Consider continuing to utilize the Town’s website and other methods to keep citizens informed of planning and land use decisions whenever practicable.

Policy 5.1.D: Land Use Plan Implementation Status Report: The Town should initiate review of the goals, policies, and contents of this plan every two years. Such review will be conducted by the Planning Board two years following plan adoption. An informal presentation and report of the accomplishments completed as a result of the land use plan will be delivered to the Town Commissioners by the Planning Board Chair or designee.

Policy 5.1.E: Land Use Plan Update: The Town supports an update of the Land Use Plan approximately every 5-7 years to address changing dynamics, population growth, economic development, and housing needs.

Policy 5.1.F: Community Appearance: The Town supports public recognition for homes and businesses that contribute to an improved community appearance, and shall engage in appropriate steps to address unsightly or unsafe conditions ranging from courteous requests to code enforcement actions where necessary.

Policy 5.1.G: Abatement of Nuisances: The Town shall continue to exercise its authority, through its police powers, to abate nuisance noises and the destruction of any vegetation which may be helping, or which may help, to protect residential or commercial properties and which may contain threatened or endangered species.

Policy 5.1.H: Managed Growth: The Town supports managing growth and development based on: 1) compatibility with Town goals; 2) the capacity of the environment; 3) densities allowable in sensitive areas; 4) the availability of support facilities and services; and 5) sufficiency of infrastructure.

Policy 5.1.I: Tourism: The Town supports family-oriented tourism as an essential economic activity which is a positive component of current and potential future development.

Policy 5.1.J: Small Town Character: The Town encourages the long-term operation of organizations and businesses which reflect and characterize the friendly small-town family beach atmosphere residents and visitors enjoy. This support extends to the continuation of a local post office facility to serve as a regular meeting spot or informal gathering place where flyers may be posted concerning local matters.

Policy 5.1.K: Age-Friendly Development: The Town encourages age-friendly development principles that support residents’ ability to age in place. This may include efforts to help people live easily and comfortably in their homes as they age.

Recommended Action 5.1.K.1: Consider submitting an application for the Town of Topsail Beach to become a member of the AARP Network of Age-Friendly Communities and WHO Global Network of Age-Friendly Cities and Communities.

Policy 5.1.L: Commercial Development: The Town supports additional compatible brick-and-mortar commercial development which serve to meet the needs of permanent residents and visitors. In particular, small-scale locally owned establishments that are compatible with nearby residences are encouraged. Itinerant commerce shall not be permitted except as allowed by Town ordinance.

Recommended Action 5.1.L.1: Consider amending the Town's Land Development Code to protect the commercial character of town center.

Policy 5.1.M: Industrial Development: Industrial uses shall not be permitted in Topsail Beach.

Policy 5.1.N: Marina Development: The Town supports the development of appropriately sited wet-slip marinas if the proposed marina is consistent with current local, state, and federal regulations.

Policy 5.1.O: Upland Marinas: The Town shall not allow upland excavation for marinas.

Policy 5.1.P: Floating Homes: Floating homes are an inappropriate use of the Town's water bodies. Except as permitted by Town ordinance, water vessels are an inappropriate overnight accommodation.

Policy 5.1.Q: Housing Maintenance: The Town shall work with residents and other stakeholders to encourage proper maintenance of residential structures through administering Town regulations.

Policy 5.1.R: Existing Development: The Town supports redevelopment of older developed areas for the purpose of land use compatibility, including relocation of endangered structures. Restoration and preservation of structures are supported. Redevelopment, like new development, shall be conducted according to existing development regulations.

Policy 5.1.S: Infrastructure Provision for New Development: Applicants for future development projects shall design and build appropriate infrastructure, including transportation facilities, to accommodate the proposed project. These transportation facilities may not infringe on current or future public access areas or on current or future residential areas. Developers or their successors in ownership shall be responsible for the costs of stormwater management infrastructure installation and the long-term management of stormwater associated with private development.

Policy 5.1.T: Traffic Impacts: Residential development shall, as much as possible, occur in a manner which will not overload traffic conditions.

Recommended Action 5.1.T.1: Consider opportunities to update Town regulations and policies to minimize traffic congestion.

Policy 5.1.U: Subdivision Roads: The development of new streets and roads as a part of the residential growth process shall be carefully studied before any new subdivisions are approved. All new roads shall be built to state and local standards, including stormwater requirements. The Town shall continue to require that new roads be made public to maintain public access.

Policy 5.1.V: Stormwater Runoff: The Town shall coordinate with the NC Department of Transportation and NC Division of Water Quality to address stormwater ponding on roadways and consider opportunities to mitigate the impacts from stormwater runoff.

Policy 5.1.W: Areas with Development Limitations: The Town shall cooperate with permitting agencies, such as the NC Division of Coastal Management, U.S. Army Corps of Engineers, and the Pender County Health Department, and others, to restrict and regulate development in wetlands, coastal wetlands, estuarine waters, and public trust areas. Development projects proposed for these areas which are not consistent with the local ordinances and/or State and federal environmental protection regulations, shall not be permitted in Topsail Beach.

Policy 5.1.X: Consistency with Existing Regulations: All development activity shall be consistent with state, local, and federal regulations.

Policy 5.1.Y: Growth Inducing Public Facilities: The Town supports the position that the development of growth-inducing public facilities such as sewers, water lines, roads, bridges, and erosion control measures occurs in cases where: a) national, state, or local interest, and public benefits are overriding factors; b) facilities would not exacerbate existing hazards or damage natural buffers; and c) facilities would be reasonably safe from flood and erosion control related damage.

Policy 5.1.Z: Natural & Cultural Resources Protection: The Town supports preserving, protecting, and enhancing the area's natural and cultural resources as a key component of quality of life. Protection for cultural and environmental artifacts or species which are irreplaceable or limited in number is also supported. Adaptive re-use of existing historic structures is supported when appropriate.

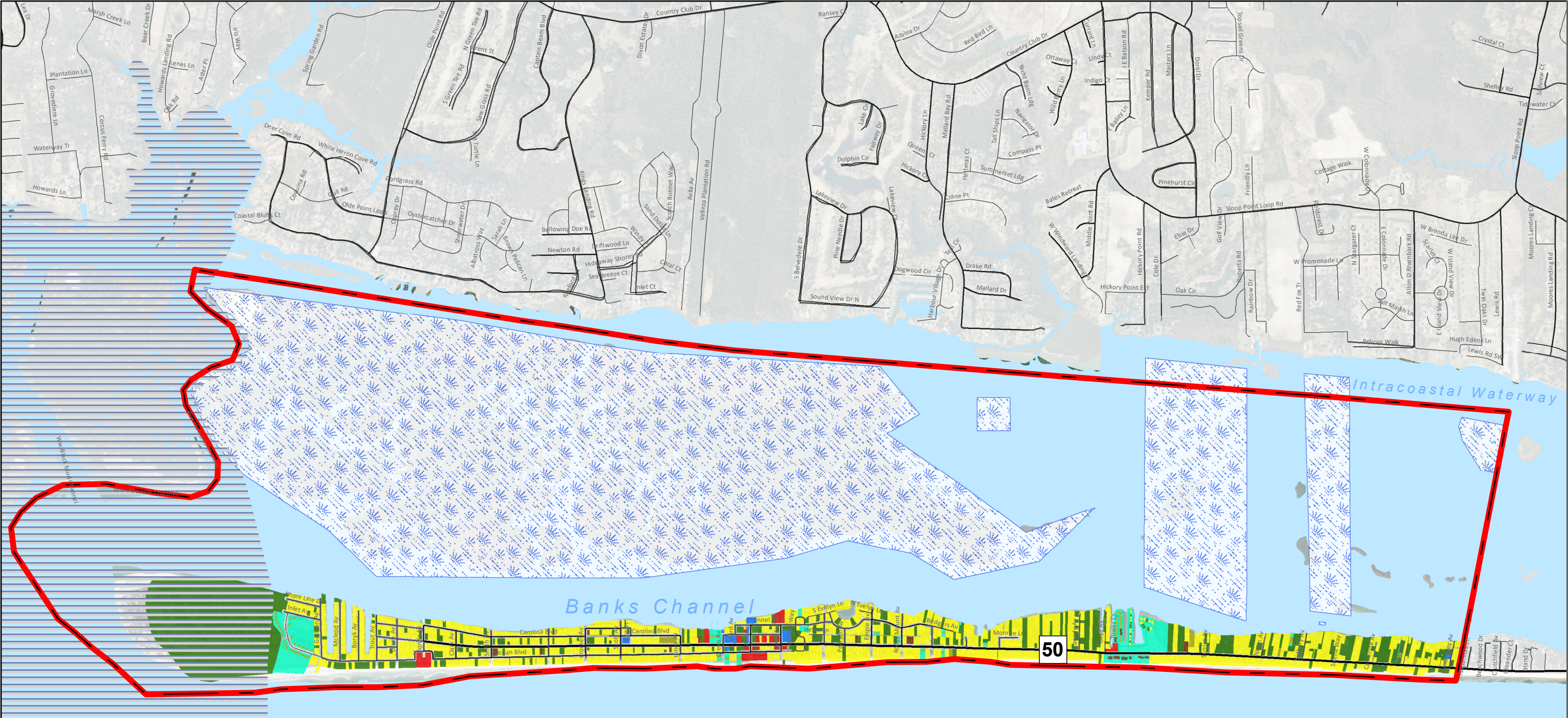
Policy 5.1.AA: Intergovernmental Cooperation: The protection of natural resources and quality of life shall be pursued in a regional context with neighboring jurisdictions, and with area-wide planning through a process which favors long-term goals over short term interests and provides accountability for the implementation of the goals and policies stated herein.

Policy 5.1.BB: Environmental Regulation: The Town generally supports County, State and federal regulations which provide for the enhancement and continued protection of environmentally fragile areas.



Policy 5.1.CC: Consistency with Long-Term Goals: The Town shall consider the consistency of proposed development with the existing long-term goals of the Town, ensuring that projects are in keeping with best practices for environmental stewardship.


Policy 5.1.DD: Development of Sound & Estuarine System Islands: The Town shall prohibit development and uncontrolled use of sound and estuarine system islands located within the municipal boundary.


Policy 5.1.EE: Maritime Forest Maintenance: The Town encourages the maintenance of existing maritime forests. Development designed to cause the least practicable disruption to the maritime forest cover shall be permitted if such development is done in accordance with all applicable state, federal, and local regulations.









Legend

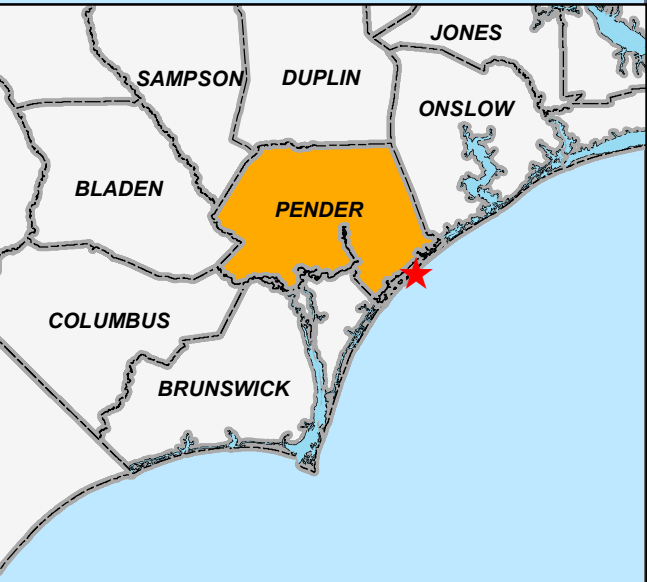
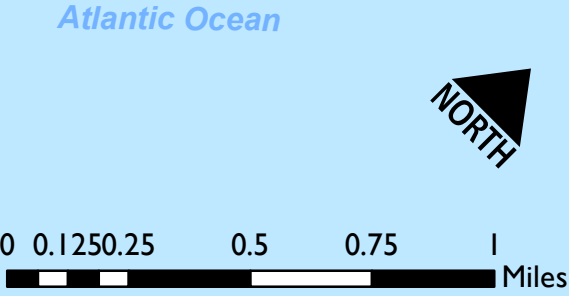
-  Corporate Limits
-  Coastal Barrier Resources System (CBRS)
- Existing Land Use

 Single-Family Residential

 Duplex

 Multi-Family
-  Common Area
-  Commercial
-  Institutional
-  Undeveloped
-  Marsh/Spoil

Aerial Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Map 5-1: Existing Land Use

Legend

-  Corporate Limits
-  Coastal Barrier Resources System (CBRS)
- Undeveloped Parcels**

Zoning District

 B-1 General Business

 B-2 Restricted Business

 C-4 Conservation — Inlet Area

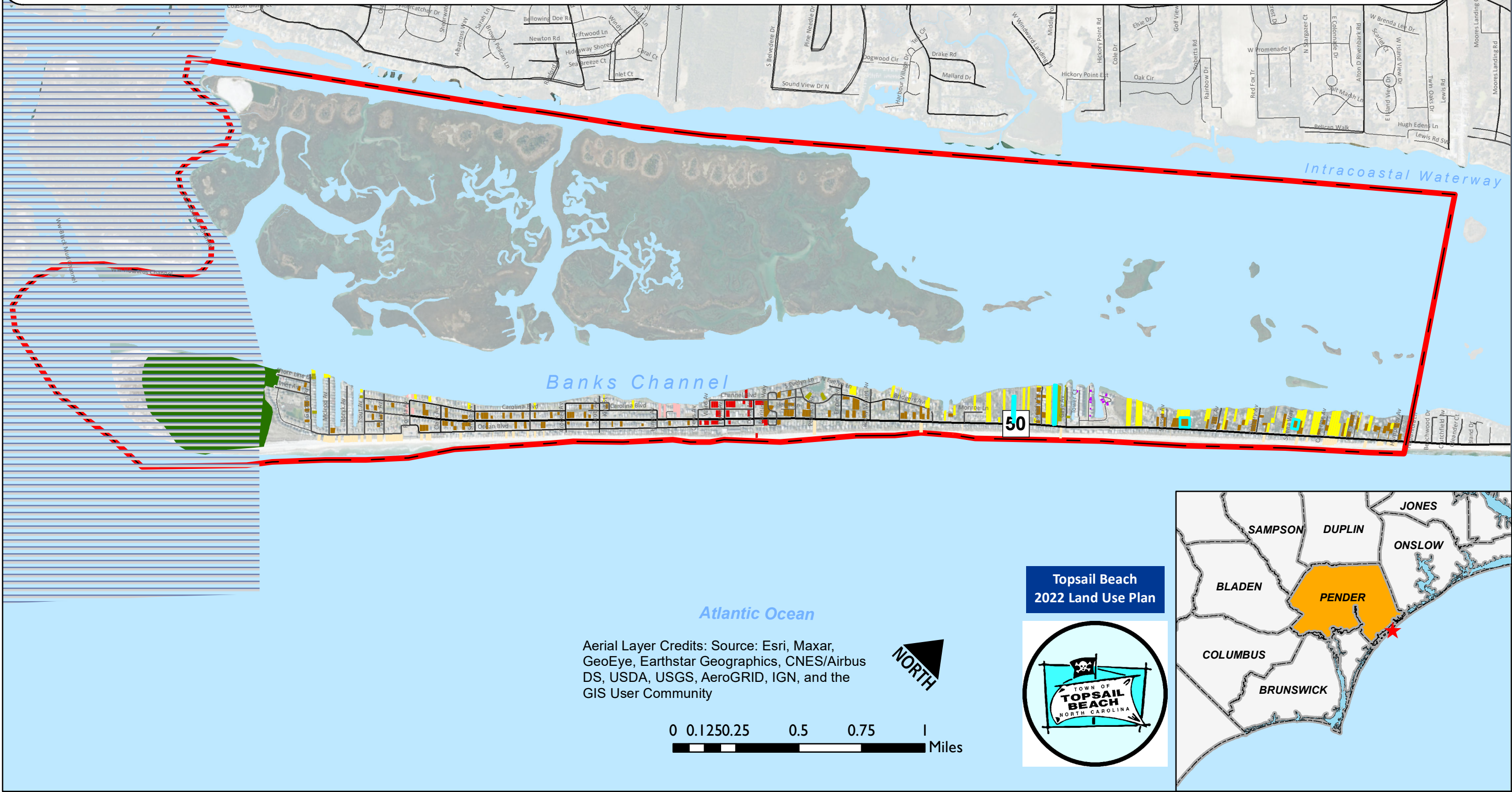
 PRD-1 Planned Residential Development Multifamily

 R-1 Residential — Ocean Front

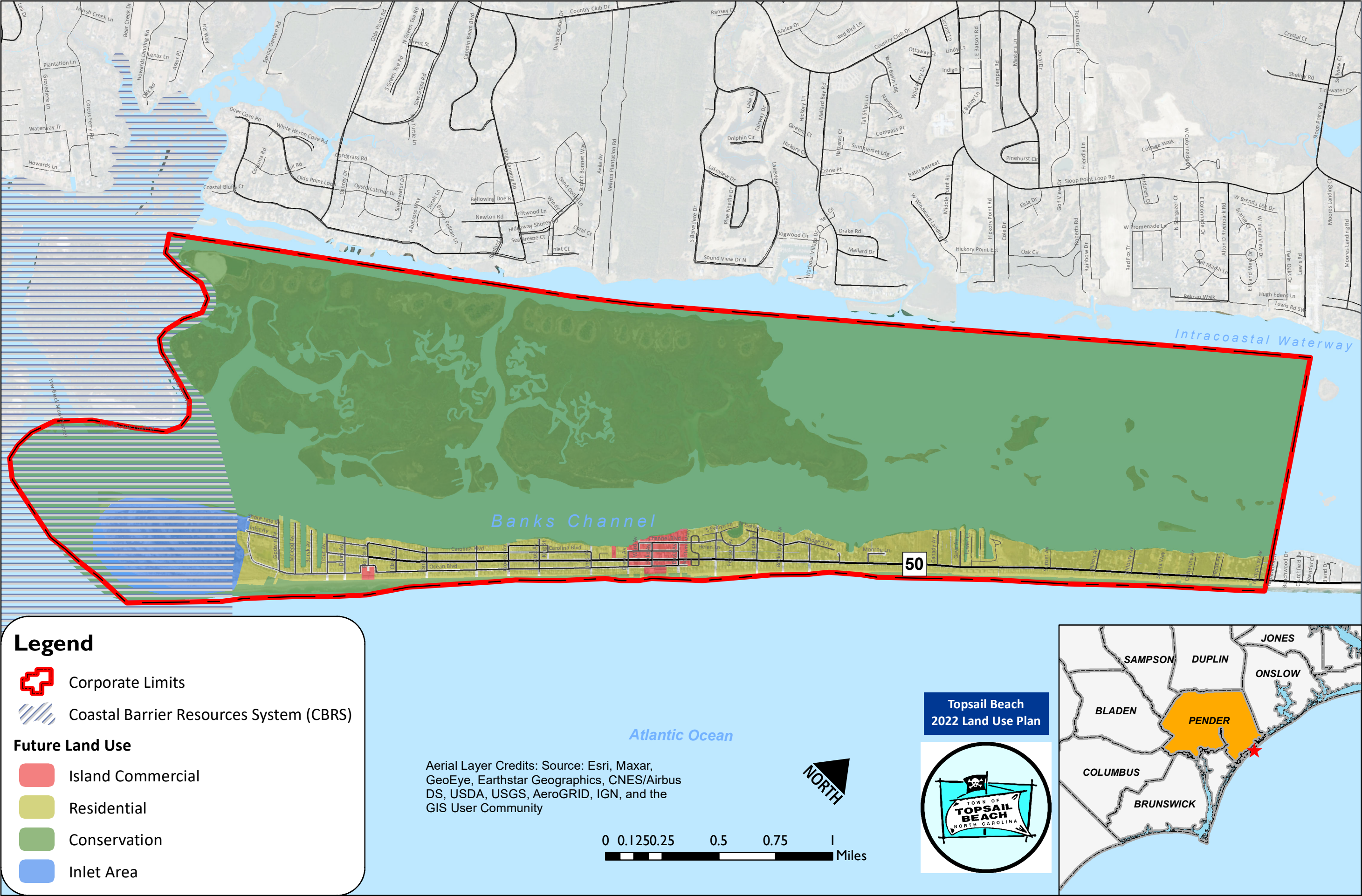
 R-2 Residential — Sound Front

 R-3 Residential — Canal Lots

 R-4 Residential — Interior Lots



Map 5-2: Undeveloped Land Analysis



Map 5-3: Future Land Use

CHAPTER 6: TOOLS FOR MANAGING DEVELOPMENT

This section of the Land Use Plan describes Topsail Beach’s procedures for administering land development regulations and also provides a schedule for implementation of recommended actions. This section has two major parts that describe the:

- *Existing development management program:* The existing management program includes the Town of Topsail Beach Code of Ordinances and North Carolina Building Code.
- *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 the Topsail Beach Comprehensive Land Use Plan will manage future land use and development.

EXISTING DEVELOPMENT MANAGEMENT PROGRAM

The Town of Topsail Beach operates under the authority of a Council-Manager form of government. Five Commissioners members and the Mayor sit on the Town Board of Commissioners. The Board of Commissioners makes decisions regarding certain development applications including amendments to regulations and Special Use Permits. The Topsail Beach Community Development Department oversees development-related issues and construction inspections within the planning jurisdiction. The Town has a Planning Board that reviews and comments on certain proposed developments. There is also a Board of Adjustment that reviews appeals and variances.

The following provides a summary of the Town’s land use-related codes and regulations:

TOPSAIL BEACH’S LAND DEVELOPMENT REGULATIONS

The Town of Topsail 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 general welfare of its citizens. Local plans and policies are enforced through ordinances adopted by the Town Commissioners, who are granted this authority by the Charter ratified in 1963. Below is a listing of Town Ordinances and enforcement provisions related to land use and development.

Chapter 6 – Buildings and Building Regulations: The Town of Topsail Beach has an active building inspections program and enforces the NC State Building Code, including the codes concerning general construction, plumbing, heating, electrical, fire, and gas, as well as the NC Uniform Residential Building Code. The Town Building Inspector issues building permits and inspect construction to ensure strict compliance with all code enforcement.

Chapter 14 – Flood Damage Prevention: The Town of Topsail Beach is a participant in the National Flood Insurance Program (NFIP). Participation in the program allows for Town residents to receive federal flood insurance. In doing so, the Town must regulate all development that is located within the Special Flood Hazard Area (SFHA). The purpose of the Flood Damage Prevention Ordinance is to promote public health, safety, and general welfare and to minimize public and private losses due to flood conditions within flood prone areas.

Chapter 16 – Land Development Code: The most prominent tool in the Town’s development review toolbox, this chapter of the Topsail Beach Code of Ordinances provides the zoning and subdivision regulations that determine what may be built, where, and according to what site design standards.

Chapter 20 – Minimum Housing: This ordinance provides minimum standards for housing within the Town of Topsail Beach, as well as enforcement procedures for substandard housing units.

The Town shall follow all local, state, and federal rules and regulations.

ACTION PLAN AND IMPLEMENTATION SCHEDULE

The following table outlines a schedule to assist the Town in implementing the recommended actions of this land use plan. The implementation schedule is to be used as a resource for Town staff and officials. The schedule is not a mandate for the allocation of funding, nor does it require such.

Table 6.1: Schedule for Implementing Recommended Actions

Action Item	To be done in Fiscal Year	Department Responsibility
Natural Hazard Areas		
3.1.A.1: Consider opportunities to maintain the Town’s Community Rating System (CRS) level as a means to reduce flood insurance rates.	Ongoing	Community Development
3.1.D.1: Consider opportunities for acquiring parcels located within hazard areas or rendered unbuildable by storms or other events for public purposes, including recreation or public access. Such opportunities may be enhanced by a formalized procedure for evaluating potential land acquisition projects that accounts for topics such as public access and wildlife habitat conservation prior to procurement.	Ongoing	Administration, Finance, Community Development
3.1.G.1: Consider continuing to advocate for financial support for coastal storm damage reduction activities with federal, state, and county officials.	Ongoing	Administration, Community Development
3.1.G.2: Consider opportunities for continuing to review the Town’s strategy for funding coastal storm damage reduction activities. Ongoing review provides the Town an opportunity to be proactive in case of changing conditions.	Ongoing	Administration, Finance
3.1.I.1: Consider developing specific and timely recommendations for implementing hazard mitigation measures contained in the Southeastern NC Regional Hazard Mitigation Plan (2021) following a state or federally declared natural disaster.	Ongoing	Administration, Community Development
3.1.I.2: Consider applying for funding from the Hazard Mitigation Grant Program (HMGP) for priority projects if the President declares Topsail Beach a disaster area.	Ongoing	Administration, Finance, Community Development
Water Quality and Natural Environment		

Action Item	To be done in Fiscal Year	Department Responsibility
3.2.A.1: Consider pursuing Clean Water Management Trust Fund grants for the purchase and acquisition of land bordering the ocean or sound/inlet beaches to protect water quality and to provide for public recreational access.	Ongoing	Administration, Finance
3.2.G.1: Consider pursuing grant funds to assist in developing future Watershed Restoration Plans. Pursuant to Section 205(j)/604(b) of the Clean Water Act, the Division of Water Resources will award grant funds to Regional Commissions and Councils of Government to carry out water quality management and planning projects, including, but not limited to: <ul style="list-style-type: none"> Identifying most cost effective and locally acceptable facility and non-point source measures to meet and maintain water quality standards; Developing an implementation plan to obtain state and local financial and regulatory commitments to implement measures developed to meet water quality standards; and Determining the nature, extent, and cause of water quality problems in various areas of the state. 	2025 – 2026	Community Development
3.2.G.2: If pursued, ensure that the Watershed Restoration Plan contains the nine minimum elements required to receive EPA Section 319 funds for implementation of capital improvements projects.	2025 – 2026	Community Development
3.1.J.1: Consider providing outreach and education to homeowners regarding the impacts of failing bulkheads to surface waters and property, as well as the benefits of living shorelines.	Ongoing	Community Development
3.2.Q.1: Consider opportunities to refine and update Town ordinances protecting the maritime forest. Currently, the Town requires a tree survey of the entire property while only regulating tree removal within the setbacks.	2024 – 2025	Community Development
3.2.R.1: Consider opportunities for strengthening and enforcing local regulations that protect sea turtles from the impacts of human development, including light sources.	2023 – 2024	
Infrastructure Carrying Capacity		
4.1.B.1: Monitor water consumption figures and consider all public and private options for future water supply.	Ongoing	Administration, Public Works
4.1.C.1: Consider opportunities for implementing alternative measures for conservation such as the recycling of water or xeric landscaping.	Ongoing	Community Development, Public Works
4.1.C.2: Continue to encourage homeowners to adopt practices that lead to water conservation using the Town's website, newsletters, and occasional mail inserts.	Ongoing	Administration, Public Works

Action Item	To be done in Fiscal Year	Department Responsibility
4.1.G.1: Continue to consider alternatives to private septic systems for the treatment and disposal of wastewater as practical.	Ongoing	Administration, Public Works
4.1.I.1: Consider opportunities to amend the Town's ordinances regarding stormwater controls to clarify or revisit relevant procedures and requirements. Such amendments may include, but are not necessarily limited to, specification of qualifying pervious materials or the amount of water required to be collected on site	2023 – 2024	Community Development
4.1.M.1: Consider opportunities to work with the NC Department of Transportation and NC Division of Water Quality to implement solutions on future transportation projects that minimize stormwater impacts to the Town.	Ongoing	Administration, Community Development
4.1.P.1: Consider opportunities to implement the Town's adopted Bikes and Walks plan to improve bicycle and pedestrian infrastructure within Topsail Beach.	Ongoing	Community Development
4.1.Q.1: Consider opportunities to enhance and improve emergency response capabilities through grants and other cost-efficient measures.	Ongoing	Administration, Finance, Fire, Police
4.1.Q.2: Consider opportunities to protect property within the Town threatened by storm or natural erosion through multiple methods of storm hazard mitigation including administration and enforcement of the building code, zoning regulations, and intergovernmental cooperation and beach nourishment.	Ongoing	Administration, Community Development
4.1.R.1: Consider opportunities to review and update the Town's mutual aid agreements with other communities.	Ongoing	Administration, Fire, Police
4.1.S.1: Consider opportunities to strengthen and formalize the Town's capital planning process, including identification of instances when it may be more economically advantageous in the long run to purchase rather than lease equipment.	Ongoing	Administration, Finance
Public Access and Recreation		
4.2.A.1: Continue to consider ways to improve existing access sites and improve ADA access.	Ongoing	Public Works
4.2.A.2: Consider available alternatives for funding beach access opportunities for visitors and residents.	Ongoing	Administration, Finance, Public Works
4.2.B.1: Consider opportunities for collaborating with local residents and businesses to maintain the cleanliness of public access sites.	Ongoing	Public Works
4.2.C.1: Consider opportunities to enhance access to public trust waters through the acquisition, development, and redevelopment of beach and sound access areas and parks.	Ongoing	Administration, Public Works

Action Item	To be done in Fiscal Year	Department Responsibility
4.2.N.1: Consider opportunities to beautify the entrance to the community and public streets with appropriate signage, landscaping, and other amenities.	Ongoing	Community Development, Public Works
4.2.O.1: Consider opportunities to leverage county, state, federal and private funding assistance sources to plan for and expand passive and active parks, recreational lands, and public water access.	Ongoing	Administration, Finance, Public Works
4.2.O.2: Consider the creation of a long-range Beach & Sound Access Plan and a Master Plan for Recreation	2025 – 2026	Administration, Community Development
Land Use Compatibility		
5.1.A.1: Consider opportunities to review the Town's development regulations to align with Topsail Beach's adopted land use plan.	2023 – 2024	Community Development
5.1.C.1: Consider continuing to utilize standing committees and boards, including the Planning Board, to involve the public in planning decisions whenever practicable.	Ongoing	Community Development
5.1.C.2: Consider continuing to utilize the Town's website and other methods to keep citizens informed of planning and land use decisions whenever practicable.	Ongoing	Community Development
5.1.K.1: Consider submitting an application for the Town of Topsail Beach to become a member of the AARP Network of Age-Friendly Communities and WHO Global Network of Age-Friendly Cities and Communities.	2022 – 2023	Administration
5.1.L.1: Consider amending the Town's Land Development Code to protect the commercial character of town center.	2024 – 2025	Community Development
5.1.U.1: Consider opportunities to update Town regulations and policies to minimize traffic congestion from residential development.	2023 – 2024	Community Development

APPENDIX A: DEFINITIONS AND ACRONYMS

DEFINITIONS OF ACTION AND DESCRIPTIVE WORDS USED IN POLICIES

The following is a list of definitions for the ‘action-words’ used in the Town’s policy statements. This list is used to help in clarifying a policy’s meaning and intent.

Consider: Implies permission to pursue a course of action or implies that a course of action is probable and likely.

Continue: Follow past and present procedures to maintain desired goal, usually with Town staff involved at all levels from planning to implementation.

Create: Bring about the desired goal, usually with Town staff and Planning Board involved at all levels from planning to implementation. This could include financial support by the Town.

Discourage: Inhibit an undesired course or action through Town regulation, staff recommendation and decisions.

Encourage: Foster the desired goal through Town regulation, staff recommendation and decisions.

Enhance: Improve current regulations and decisions towards a desired state through the use of policies and Town staff at all levels of planning. This could include financial support by the Town.

Ensure: To make certain or sure an action is implemented, usually with Town staff involvement. Financial support by the Town should be provided if needed.

Establish: To introduce through the creation thereof. Financial support by the Town may be provided if needed.

Identify: Catalog and confirm resource or desired item(s) through the use of Town staff and actions.

Implement: Actions to guide the accomplishment of the Plan recommendations.

Maintain: Keep in good condition the desired state of affairs through the use of Town regulations and practices by staff. Financial support by the Town should be provided if needed.

May: Implies permission to pursue a course of action or implies that a course of action is probable and likely. While “may” leaves room for flexibility for a range of choices, it does not imply a “may” or “may not” status as used in policy statements.

Prevent: Stop described event through the use of appropriate Town regulations, staff actions, Planning Board actions, and Town finances, if needed.

Promote: Advance the desired state through the use of Town policies and codes and Planning Board and staff activity at all levels of planning. This could include financial support by the Town.

Protect: Guard against a deterioration of the desired state through the use of Town policies and regulations, staff, and, if needed, financial support by the Town.

Provide: Take the lead role in supplying the needed financial and staff support to achieve the desired goal. The Town is typically involved in all aspects from planning to implementation to maintenance.

Recommended Action: A statement outlining a specific course of action the Town may pursue to implement goals and policies. Recommended actions are not used in review of development proposals, text amendments, and/or rezoning requests.

Shall: An obligation to carry out a course of action.

Should: An officially adopted course or method of action intended to be followed to implement the community Goals. Though not as mandatory as "shall", it is still an obligatory course of action unless clear reasons can be identified that an exception is warranted.

Support: Supply the needed staff support, policies, and financial assistance at all levels to achieve the desired goal.

Sustain: Uphold the current state through Town policies, decisions, financial resources, and staff action.

Work: Cooperate and act in a manner through the use of Town staff actions, and policies to create the desired goal.

Acronyms Used In the Report

AEC	Areas of Environmental Concern
CAMA	Coastal Area Management Act
CBRS	Coastal Barrier Resource System
CFCC	Cape Fear Community College
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
NC DEQ	Department of Environmental Quality
DWR	Division of Water Resources
DWQ	Division of Water Quality
EMS	Emergency Medical Service

EMT	Emergency Medical Technician
ETJ	Extra-territorial Jurisdiction
FAR	Floor Area Ratio
FEMA	Federal Emergency Management Agency
GIS	Geographic Information System
HQW	High Quality Waters
ICWW	Intracoastal Waterway
LPO	Local Permit Officer
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
N.A.	Not Applicable
NC	North Carolina
NCAC	North Carolina Administrative Code
NCDOT	North Carolina Department of Transportation
NFIP	National Flood Insurance Program
NPDES	National Pollutant Discharge Elimination System
	Nonpoint Source
NSW	Nutrient Sensitive Waters
ORW	Outstanding Resource Water
OSDS	Onsite Sewage Disposal System
PL	Public Law
SW	Swamp Waters
U.S.	United States