

Town of Holden Beach, NC

2019 Land Use Plan



Adopted: February 16, 2021



Page intentionally left blank.

ACKNOWLEDGEMENTS

Town of Holden Beach

110 Rothschild Street
Holden Beach, NC 28462

Board of Commissioners

J. Alan Holden, Mayor
Gerald Brown, Mayor Pro-Tem
Brian Murdock
Woody Tyner
Pat Kwiatkowski
Mike Sullivan

Planning & Zoning Board

Vicki Myers, Chairperson
Mark Fleischhauer, Vice-Chairperson
Bob Hunter
Peter Pallas
Greg Shue
Tracey Thomas
Peter Pallas, Alternate
Stu Atwell, Alternate

Land Use Plan Steering Committee

Anne Arnold
Mark Fleischhauer
Kathryn Gaines
Bob Hunter
Vicki Myers
Peter Pallas
Greg Shue
Tracey Thomas
Woody Tyner
Dwight Willis

Town Staff

David W. Hewett, Town Manager
Tim Evans, Planning & Inspections Director
Rhonda Wooten, CAMA LPO

Technical Assistance By

Wes MacLeod, AICP, ASLA
Justin Brantley, Intern
Sam Shore, Intern
André Wright, Intern
Cape Fear Council of Governments

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

What Qualifies as a CAMA Regulated Development Project? 1-2

What is an Area of Environmental Concern? 1-3

What are the types of CAMA Permits? 1-4

PUBLIC INVOLVEMENT AND COMMUNITY SURVEY RESULTS 1-4

Community Survey Results 1-5

Public Input Meeting Results 1-5

Community Concerns and Aspirations 1-15

VISION STATEMENT 1-15

HOW TO USE THIS PLAN 1-16

CHAPTER 2: COMMUNITY PROFILE 2-1

POPULATION CHARACTERISTICS AND TRENDS 2-2

Permanent/Year-Round Population 2-2

Population By Age 2-4

Current Seasonal Population Estimates 2-5

Seasonal Estimate by Housing & Vacation Unit 2-5

Day-Trip Visitors 2-6

Peak Seasonal Overnight Population and Day-Trip Visitors 2-7

Population Projections 2-7

HOUSING CHARACTERISTICS AND TRENDS 2-9

Housing Units by Type 2-9

Housing Tenure 2-9

Housing Unit Trends 2-10

Housing Value 2-12

INCOME 2-14

LOCAL ECONOMY 2-15

Seasonal Accommodation Activity 2-15

SUMMARY 2-16

CHAPTER 3: NATURAL SYSTEMS ANALYSIS 3-1

AREAS OF ENVIRONMENTAL CONCERN 3-1

ESTUARINE AND OCEAN SYSTEM 3-2

Estuarine Water 3-2

Estuarine Shoreline 3-2

Coastal Wetlands 3-2

Public Trust Areas 3-3

OCEAN HAZARD SYSTEM 3-4

Ocean Erodible Area 3-4

Inlet Hazard Area 3-4

Unvegetated Beach Area 3-5

SOIL CHARACTERISTICS 3-5

HAZARDS 3-5

Flood Hazard Areas 3-5

FEMA Flood Insurance 3-6

Hurricanes 3-7

Storm Surge Areas 3-9

Nor'easters 3-9

Tornadoes/Waterspouts 3-9

Urban Fires 3-10

WATER QUALITY 3-10

Shellfishing & Primary Nursery Areas 3-12

NON-COASTAL WETLANDS 3-13

WATER SUPPLY AND WELLHEAD PROTECTION AREAS 3-14

ENVIRONMENTALLY FRAGILE AREAS 3-14

Natural Heritage Areas 3-14

Areas Containing Endangered Species 3-14

GOALS, OBJECTIVES, AND POLICIES 3-15

Introduction 3-15

Water Quality and Natural Environment 3-15

Natural Hazard Areas 3-18

CHAPTER 4: ANALYSIS OF COMMUNITY FACILITIES 4-1

WATER SUPPLY SYSTEM STATUS AND TRENDS 4-1

Water Supply System 4-1

Water Demand 4-1

WASTEWATER SYSTEM STATUS AND TRENDS 4-3

Wastewater System 4-3

Treated Wastewater as a Resource 4-4

STORMWATER SYSTEM 4-4

TRANSPORTATION SYSTEMS 4-5

Holden Beach Bridge 4-5

Traffic Counts 4-6

2040 Long Range Transportation Plan 4-6
Non-Motorized Transportation 4-7
 FIRE AND EMS SERVICES 4-8
 RECREATIONAL OPPURTUNITIES, PUBLIC ACCESS FACILITIES, AND BOATING ACCESS FACILITIES 4-8
 Parks and Recreation..... 4-8
 Existing Public Access Sites..... 4-11
 Boating Access Facilities 4-11
 GOALS, OBJECTIVES, AND POLICIES..... 4-13
 Introduction..... 4-13
 Infrastructure Carrying Capacity 4-13
 Public Access and Recreation 4-15

CHAPTER 5: LAND USE AND GROWTH MANAGEMENT 5-1

EXISTING LAND USE ANALYSIS 5-1
 Source of the Existing Land Use Analysis and Map..... 5-1
 Land Uses Identified in the Planning Jurisdiction 5-1
 EXISTING LAND USE IN THE PLANNING JURISDICTION 5-2
 BUILD-OUT ANALYSIS..... 5-3
 IDENTIFICATION OF LAND USE CONFLICTS 5-4
 FUTURE LAND USE 5-4
 FUTURE LAND USE CLASSIFICATION GUIDELINES 5-5
 IMPLEMETATION..... 5-5
 HOW TO USE THE FUTURE LAND USE MAP AND GUIDELINES..... 5-5
 COMMERCIAL 5-6
 MULTI-FAMILY RESIDENTIAL..... 5-7
 RESIDENTIAL 5-7
 CONSERVATION 5-8
 GOALS, OBJECTIVES, AND POLICIES..... 5-9
 Introduction..... 5-9
 Land Use Compatibility 5-9

CHAPTER 6: TOOLS FOR MANAGING DEVELOPMENT 6-1

EXISTING DEVELOPMENT MANAGEMENT PROGRAM..... 6-1
 Holden Beach’s Land Development Regulations 6-1
 ACTION PLAN AND IMPLEMENTATION SCHEDULE 6-3

APPENDIX A: DEFINITIONS AND ACRONYMS

DEFINITIONS OF ACTION AND DESCRIPTIVE WORDS USED IN POLICIESA-1

LIST OF TABLES AND FIGURES

TABLE 2.1 POPULATION GROWTH/DECLINE: 1980-2016 2-2

TABLE 2.2 COASTAL MUNICIPALITY PERMANENT POPULATION GROWTH/DECLINE: 1990-2016 2-3

TABLE 2.3 PERMANENT POPULATION BY MEDIAN AGE 2000 & 2016 2-4

TABLE 2.4 2016 PEAK SEASONAL OVERNIGHT POPULATION – HOLDEN BEACH 2-5

TABLE 2.5 DAY TRIP VISITORS – HOLDEN BEACH 2-6

TABLE 2.6 30-YEAR POPULATION PROJECTION – HOLDEN BEACH 2-7

TABLE 2.7 HOUSING UNITS BY TYPE – HOLDEN BEACH & BRUNSWICK COUNTY 2-8

TABLE 2.8 HOUSING TENURE – HOLDEN BEACH & BRUNSWICK COUNTY 2-10

TABLE 2.9 OWNER OCCUPIED HOUSING VALUE 2-12

TABLE 2.10 MEDIAN HOUSEHOLD INCOME – OCCUPIED HOUSEHOLDS 2-14

TABLE 2.11 DEMOGRAPHIC CHARACTERISTICS OF SELECTED NORTH CAROLINA BEACH COMMUNITIES 2-18

TABLE 3.1 HOUSING UNITS WITHIN A SPECIAL FLOOD HAZARD AREA 3-6

TABLE 3.2 FLOOD INSURANCE POLICIES (AS OF JULY 31, 2018) 3-7

TABLE 3.3 LOSS STATISTICS FOR HOLDEN BEACH, BRUNSWICK COUNTY, & NORTH CAROLINA 3-7

TABLE 3.4 HURRICANES & THE SAFFIR-SIMPSON SCALE 3-8

TABLE 3.5 FUJITA-PEARSON TORNADO SCALE 3-10

TABLE 3.6 TYPES OF NON-COASTAL WETLANDS IN HOLDEN BEACH 3-14

TABLE 4.1 WEST BRUNSWICK WASTEWATER TREATMENT PLANT SERVING HOLDEN BEACH 4-3

TABLE 4.2 HOLDEN BEACH WASTEWATER DISCHARGE (2017) 4-3

TABLE 4.3 HOLDEN BEACH GSATS 2040 LONG RANGE TRANSPORTATION PLAN PROJECT RECOMMENDATION 4-7

TABLE 4.4 CAMA PUBLIC BEACH ACCESS LOCATIONS 4-12

TABLE 5.1 PLANNING JURISDICTION CHARACTERISTICS 5-2

TABLE 5.2 EXISTING LAND USE 5-2

TABLE 5.3 VACANT LAND BY ZONING DISTRICT 5-3

FIGURE 2.1 PERMANENT POPULATION BY AGE GROUP 2-4

FIGURE 2.2 HOUSING UNITS – YEAR STRUCTURE BUILT – HOLDEN BEACH 2-10

FIGURE 2.3 NEW CONSTRUCTION PERMITS – HOLDEN BEACH 2-11

FIGURE 2.4 MEDIAN VALUE OF OCCUPIED HOUSING UNITS – NC COASTAL COMMUNITIES 2-13

FIGURE 2.5 MEDIAN HOUSEHOLD INCOME – NC COASTAL COMMUNITIES 2-15

FIGURE 2.6 BRUNSWICK COUNTY TOURISM IMPACT 2-16

FIGURE 3.1 HOLDEN BEACH AREA SHELLFISH CLOSURES 3-12

FIGURE 4.1 WATER CONSUMPTION – HOLDEN BEACH (2017) 4-2

FIGURE 4.2 HOLDEN BEACH BRIDGE 4-5

FIGURE 4.3 BRIDGEVIEW PARK 4-8

FIGURE 4.4 HOLDEN BEACH PAVILION 4-9

FIGURE 4.5 HALSTEAD STREET PARK 4-9

FIGURE 4.6 HOLDEN BEACH FITNESS TRAIL 4-10

FIGURE 4.7 SAND DOLLAR PARK 4-10
 FIGURE 4.8 SAILFISH PARK..... 4-11
 FIGURE 4.9 HOLDEN BEACH CAMA ACCESS SIGN 4-11

LIST OF MAPS

Unless otherwise noted, maps are located at the end of each respective chapter.

MAP 3.1 AREAS OF ENVIRONMENTAL CONCERN (AECs)..... END OF CHAPTER 3
 MAP 3.2 SPECIAL FLOOD HAZARD AREAS (SFHA) END OF CHAPTER 3
 MAP 3.3 SURFACE WATER CLASSIFICATIONS END OF CHAPTER 3
 MAP 3.4 WETLANDS..... END OF CHAPTER 3
 MAP 3.5 PRIMARY NURSERY AREAS & SIGNIFICANT NATURAL HERITAGE AREAS END OF CHAPTER 3
 MAP 4.1 STORMWATER PROJECTS END OF CHAPTER 4
 MAP 4.2 ANNUAL AVERAGE DAILY TRAFFIC (AADT)..... END OF CHAPTER 4
 MAP 4.3 BIKE AND PEDESTRIAN FACILITIES END OF CHAPTER 4
 MAP 4.4 RECREATION FACILITIES END OF CHAPTER 4
 MAP 5.1 EXISTING LAND USE..... END OF CHAPTER 5
 MAP 5.2 VACANT LAND BY ZONING DISTRICT END OF CHAPTER 5
 MAP 5.3 POTENTIAL LAND USE CONFLICTS END OF CHAPTER 5
 MAP 5.4 FUTURE LAND USE MAP..... END OF CHAPTER 5

MATRIX OF REQUIRED ELEMENTS

Matrix of Required Elements	Page
(A) Organization of the Plan: Include a matrix in the land use plan or comprehensive plan that shows the location of the required elements.	vii - xi
(B) Community Concerns and Aspirations. The purpose of this element is to provide an understanding of the underlying planning needs and desires of the community.	1-15
(1) Significant existing and emerging conditions: Describe the dominant growth-related conditions that influence land use, development, water quality, and other environmental concerns in the planning area.	2-1 to 2-18
(2) Key issues: Describe the land use and development topics most important to the future of the planning area. At a minimum, this description shall include public access, land use compatibility, infrastructure carrying capacity, natural hazard areas, water quality, and may also include local areas of concern as described in Subparagraph (D)(2) (Land Use Plan Management Topics) of the Rule.	3-1 to 3-15
(3) A community vision: Describe the general physical appearance and form that represents the local governments plan for the future. Include objectives to be achieved by the plan and identify changes that may be needed to achieve the planning vision.	1-15
(C) Existing and Emerging Conditions. The purpose of this element is to provide a sound factual base necessary to support the land use and development policies included in the plan. Describe the following:	2-1 to 2-18
(1) Population, Housing and Economy. Include discussion of the following data and trends:	2-1 to 2-18
(a) Population:	2-2 to 2-8
(i) Permanent population growth trends using data from the two most recent decennial Censuses;	2-3
(ii) Current Permanent and Seasonal Estimates;	2-4 to 2-6
(iii) Key population characteristics;	2-4 to 2-6; 2-18
(iv) Age;	2-4
(v) Income; and	2-14 to 2-15
(vi) Thirty Year Projections of Permanent and Seasonal Population in five years increments.	2-7 to 2-8
(b) Housing stock: Estimate current housing stock, including permanent and seasonal units, tenure, and types of units (single-family, multifamily, and manufactured).	2-9 to 2-12
(c) Local economy: Describe employment by major sectors and community economic activity.	2-15 to 2-16
(2) Natural Systems. Describe the natural features and discuss the environmental conditions of the planning jurisdiction to include:	3-1 to 3-15
(a) Natural features	3-2;3-12
(i) Areas of Environmental Concern (AECs);	3-1 to 3-2
(ii) Soil characteristics, including limitations for septic tanks, erodibility, and other factors related to development;	3-5

(iii) Environmental Management Commission (EMC) water quality classifications (SC, SB, SA, HQW, and ORW) and related use support designations, and Division of Marine Fisheries (DMF) shellfish growing areas and water quality conditions;	3-11
(iv) Flood and other natural hazards;	3-5 to 3-10
(v) Storm surge areas;	3-9
(vi) Non-coastal wetlands including forested wetlands, shrub-scrub wetlands and freshwater marshes;	3-13 to 3-14
(vii) Water supply watersheds or wellhead protection areas;	3-14 to 3-15
(viii) Primary nursery areas;	3-12
(ix) Environmentally fragile areas, such as, but not limited to wetlands, natural heritage areas, areas containing endangered species, prime wildlife habitats, or maritime forests; and	3-14 to 3-15
(x) Additional natural features or conditions identified by the local government.	3-14
(b) Environmental Conditions	3-1 to 3-15
(i) Water quality:	3-10 to 3-11
(I) Status and changes of surface water quality, including impaired streams from the most recent N.C. Division of Water Resources Basin Planning Branch Reports, Clean Water Act 303 (d) List and other comparable data;	3-11
(II) Current situation and trends on permanent and temporary closures of shellfishing waters as determined by the Report on Sanitary Survey by the Shellfish Sanitation and Recreational Water Quality Section of the N.C. Division of Marine Fisheries;	3-12
(III) Areas experiencing chronic wastewater treatment system malfunctions; and	N/A
(IV) Areas with water quality or public health problems related to non-point source pollution.	N/A
(ii) Natural hazards:	3-5 to 3-10
(I) Areas subject to recurrent flooding, storm surges and high winds; and	3-5 to 3-9
(II) Areas experiencing significant shoreline erosion as evidenced by the presence of threatened structures or public facilities.	3-1 to 3-4
(iii) Natural resources:	3-2 to 3-4; 3-12 to 3-15
(I) Environmentally fragile areas or areas where resource functions are being impacted as a result of development; and	3-14
(II) Valuable natural resource areas that are being impacted or lost as a result of incompatible development. These may include, but are not limited to the following: coastal wetlands, protected open space, and agricultural land.	3-2 to 3-3; 3-10 to 3-14
(3) Existing Land Use and Development. Include a map and descriptions of the following:	5-1 to 5-2; See Map 5.1 at End of Chapter 5

(a) Existing land use patterns, which may include the following categories: Residential, commercial, industrial, institutional, public, dedicated open space, vacant, agricultural, and forestry. Land use descriptions shall include estimates of the land area allocated to each land use and characteristics of each land use category.	5-2
(b) Historic, cultural, and scenic areas designated by a state or federal agency or by local government.	3-14
(4) Community Facilities. Evaluate existing and planned capacity, location, and adequacy of community facilities that serve the community's existing and planned population and economic base; that protect important environmental factors such as water quality; and that guide land development in the coastal area. These shall include:	4-1 to 4-12
(a) Public and private water supply and wastewater systems. Describe existing public and private systems, including existing condition and capacity. Describe any documented overflows, bypasses, or other problems that may degrade water quality or constitute a threat to public health. Indicate future needs based on population projections. Map existing and planned service areas.	4-3 to 4-4; See Map 4.1 at End of Chapter 4
(b) Transportation systems. Map the existing and planned multimodal systems and port and airport facilities. Describe any highway segments deemed by the North Carolina Department of Transportation (NCDOT) as having unacceptable service levels. Describe highway facilities on the current thoroughfare plan or facilities on the current transportation improvement plan. Describe the impact of existing facilities on land use patterns.	4-5; See Map 4.2 at End of Chapter 4
(c) Stormwater systems. Describe the existing public stormwater management system. Identify existing drainage problems and water quality issues related to point-source discharges of stormwater runoff.	4-4
(D) Future Land Use. This element of the plan is intended to guide the development and use of land in a manner that achieves the goals of the CAMA through local government land use and development policies, including a future land use map.	5-4 to 5-8; See Map 5.4 at End of Chapter 5
(1) Policies	5-9 to 5-11
(a) Community Concerns and Aspirations and Existing and Emerging Conditions shall be considered in the development of local government land use plan policies as required in 7B .0702 (b) and (c).	5-11
(b) Policies shall be consistent with the goals of the CAMA, shall address the CRC management topics for land use plans, and comply with all state and federal rules.	5-11; 6-2
(c) Policies that exceed use standards and permitting requirements found in Subchapter 7H, State Guidelines for Areas of Environmental Concern, shall be identified in the plan.	3-15 to 3-16
(2) Land Use Plan Management Topics. The purposes of the CRC management topics are to ensure that land use plans support the goals of the CAMA, define the CRC's expectations for land use policies, and provide a basis for land use plan review and certification. In addition to the management topics outlined below, plans may also include policies to address local areas of	5-9 to 5-11

concern. Each management topic includes two components: a management goal and planning objectives.	
(a) Public Access:	4-12
(i) Management Goal: Maximize public access to the beaches and public trust waters of the Town of Holden Beach and maximize recreational opportunities for residents and visitors.	4-12
(ii) Planning Objectives: Policies that address access needs and opportunities with strategies to develop public access and provisions for all segments of the community, including persons with disabilities. Policies that address the reduction of user conflicts in the public trust waters of the Town. Policies that prevent uses that would directly or indirectly impair or block existing navigation channels. Provide a quality recreation experience to both residents and visitors.	4-13 to 4-16
(b) Land Use Compatibility:	5-3
(i) Management Goal: Ensure that development and use of resources or preservation of land balance protection of natural resources and fragile areas with economic development, avoids risks to public health, safety and welfare, and are consistent with the capability of the land.	5-11
(ii) Planning Objectives: Policies that maintain the small town, family friendly atmosphere of the Town by encouraging architecture in keeping with the Town's character, traditional family homes, neighborhood, and locally oriented businesses, parks, and natural areas.	5-10
(c) Infrastructure Carrying Capacity:	5-3
(i) Management Goal: To ensure that public infrastructure systems are appropriately sized, located, and managed so that quality and productivity of AECs and other fragile areas are protected or restored.	3-15 to 3-16
(ii) Planning Objectives: Policies that ensure that the location and capacity of public infrastructure is consistent with the Town's growth and development goals.	5-9 to 5-11
(d) Natural Hazard Areas:	3-4 to 3-5
(i) Management Goal: 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.	3-18 to 3-20
(ii) Planning Objectives: Policies that minimize damage and threats to public health and safety associated with hurricanes, severe weather, and other hazards, and work to implement the <i>Southeaster NC Regional Hazard Mitigation Plan (2016)</i> . Following a hurricane, severe weather event, or other disaster, the Town will work as quickly as possible to restore essential services related to public health, safety, and welfare	3-18
(e) Water Quality:	3-10 to 3-11
(i) Management Goals: Maintain, protect and where possible enhance water quality in all coastal wetlands, rivers, streams, and estuaries.	3-16

(ii) Planning Objectives: Policies that establish mitigation strategies designed to protect and where possible enhance and restore the sensitive natural resources located in and adjacent to the Town.	3-16
(3) Future land use map. Depict the policies for growth and development, and the desired future patterns of land use and land development with consideration given to natural system constraints and infrastructure. Include designations with descriptions of land uses and development.	See Map 5.4 at End of Chapter 5
(E) Tools for Managing Development. The purpose of this element is to describe the management tools and actions the local government will use to implement the land use plan.	6-1 to 6-7
(1) Guide for land use decision-making. Describe the role of the land use plan policies, including the future land use map, in local decisions regarding land use and development.	5-5
(2) Existing development program. Describe the community's existing development management program, including local ordinances, codes, plans, and policies.	6-1 to 6-2
(3) Action plan and implementation schedule. Describe the actions that will be taken by the local government to implement policies that meet the CRC's Management Topic goals and objectives. Specify the fiscal year(s) in which each action is anticipated to start and finish. Describe the specific steps the local government plans to take to implement the policies, including the adoption and amendment of local ordinances, plans, and special projects. The action plan shall be used to prepare the implementation status report for the land use plan.	6-3 to 6-7

Chapter 1: Introduction

INTRODUCTION TO THE LAND USE PLAN PROCESS



The Town of Holden Beach, like most coastal communities in southeastern North Carolina and northeastern South Carolina, has seen steadily increasing 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 rapid development by anticipating potential problems and establishing management goals and policies to support growth.

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.

Holden 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 Holden Beach's status as one of the finest family oriented coastal communities on the East Coast of the United States. This plan builds on the previous land use plans prepared by Holden Beach in 1980, 1985, 1990, 1997, and 2009. 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 Holden Beach, AECs are generally those areas that are in close proximity to water (ocean, ICWW, 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 values 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 Holden Beach the AECs are generally those areas that are in close proximity to water (ocean, ICWW, 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 or contact the Holden Beach Planning & Inspections Department.

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.

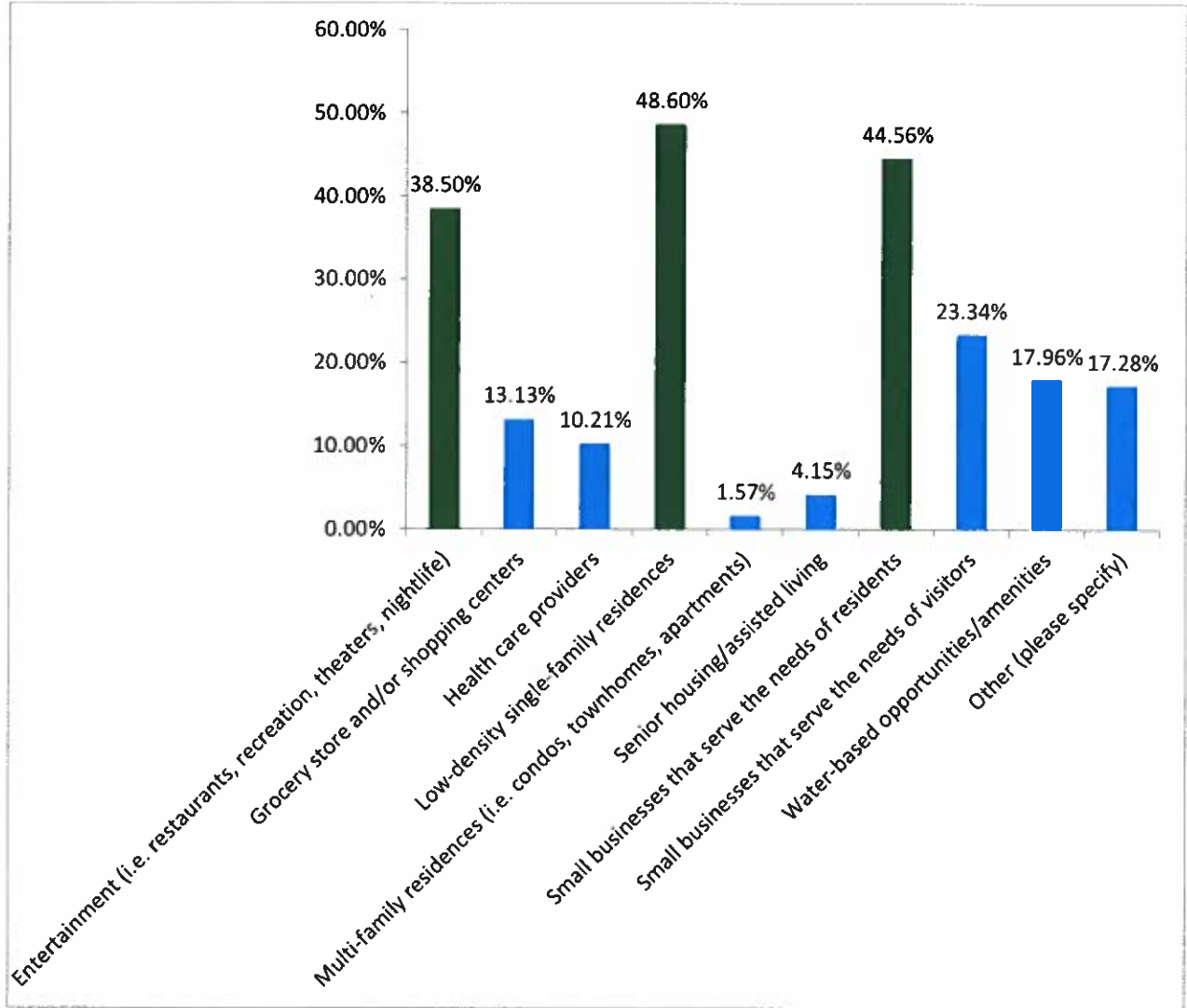
PUBLIC INVOLVEMENT AND COMMUNITY SURVEY RESULTS

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 concerns on growth and development, 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 unmanaged development, and the utility of preserving natural resources.

The most significant source of public input came as a result of the community survey. A total of nearly 900 respondents completed the survey, more than 90% of whom were property owners. 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 Holden Beach and to reaffirm public opinion regarding growth management and development.

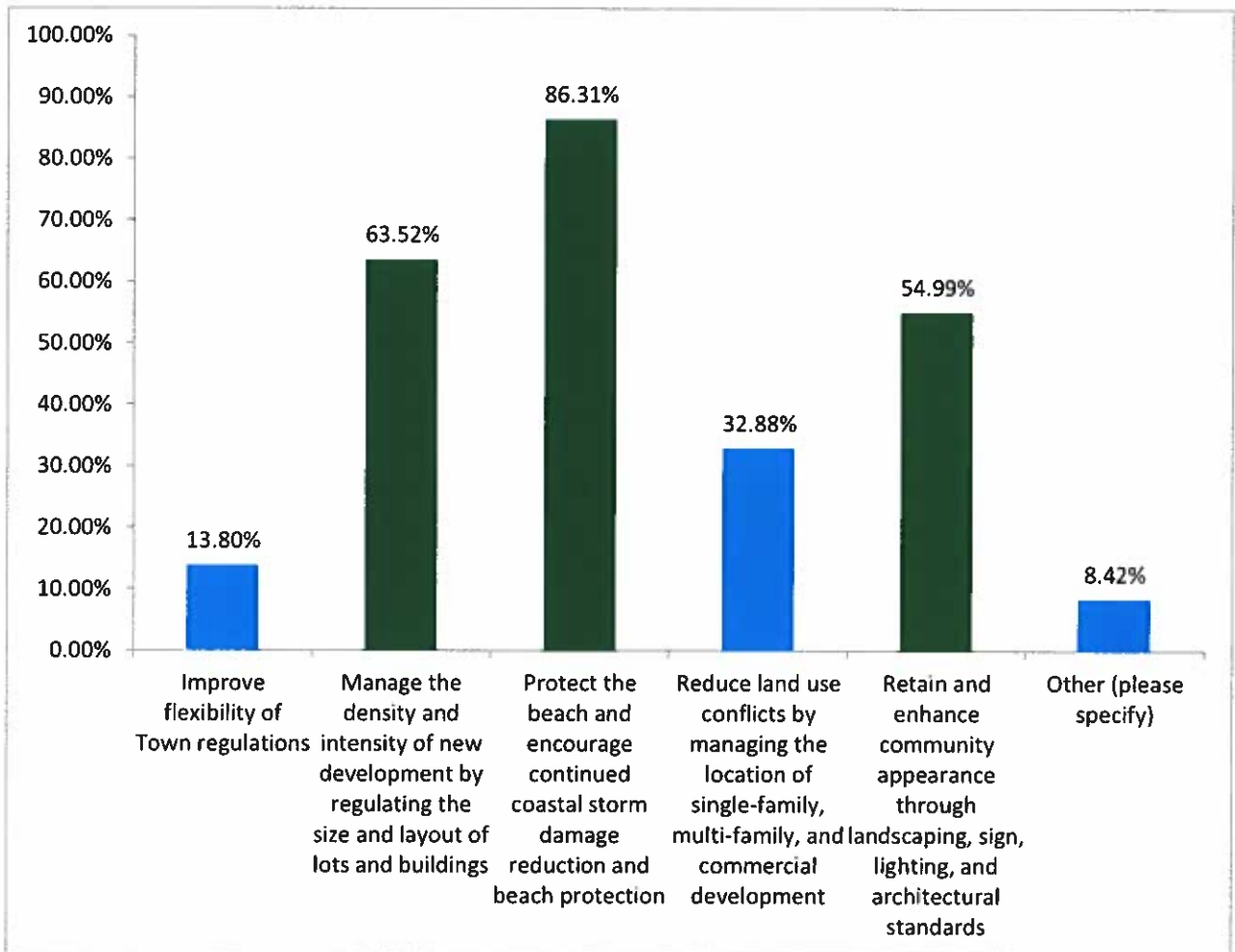
COMMUNITY SURVEY RESULTS

**Question 1: What kinds of new private development would you most like to see on Holden Beach?
(Please select as many as three)**



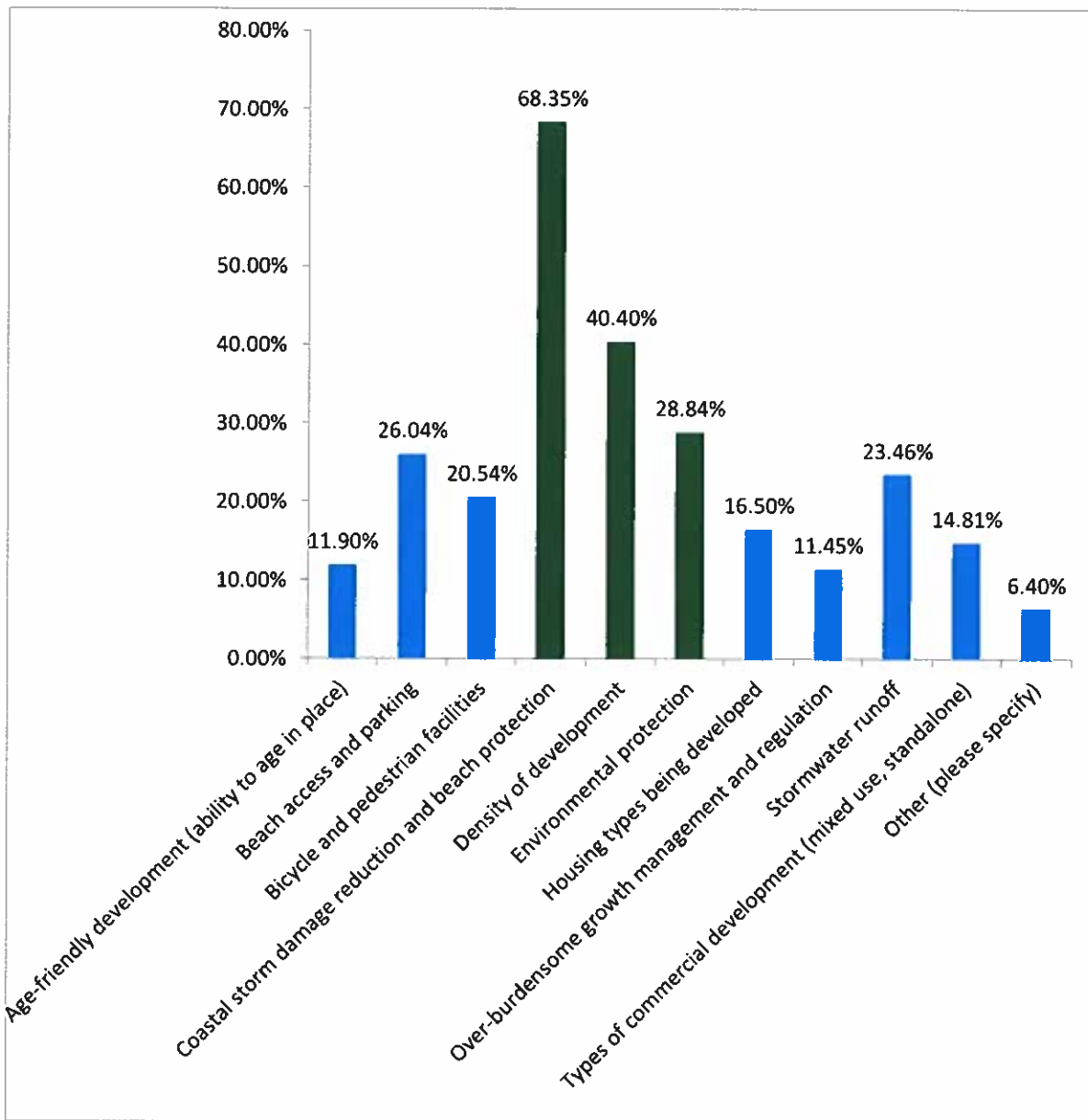
When asked what kinds of new development you would most like to see on Holden Beach, the majority of respondents selected low-density single-family residences, small businesses that serve the needs of residents, and entertainment. The least favorable option selected by respondents was the development of multi-family residences such as condos, townhomes, and apartments.

Question 2: What do you consider to be the most important roles for the Town to play in influencing the character of development on Holden Beach? (Please select as many as three)



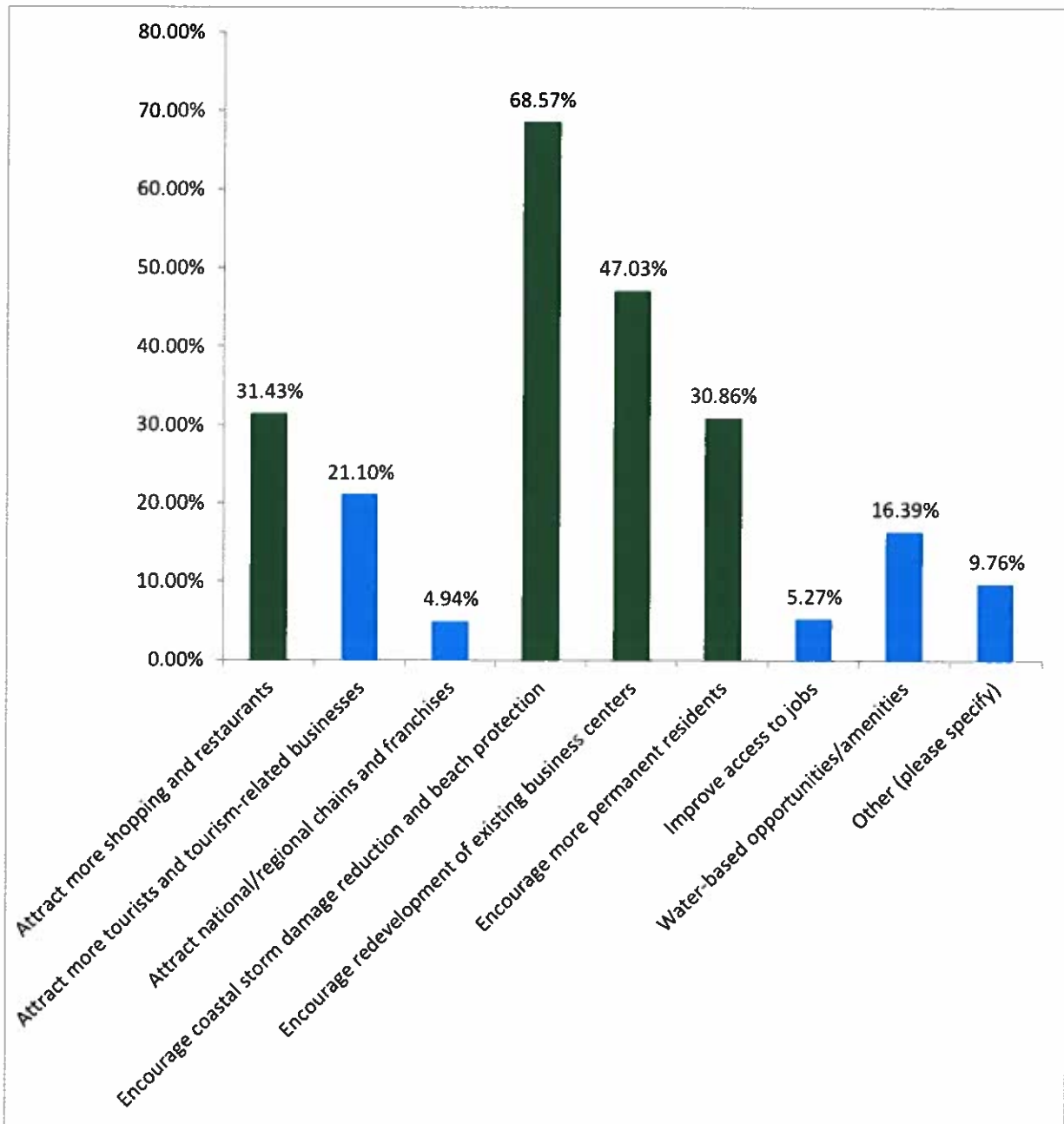
The three most important roles for the Town to play in influencing the character of Holden Beach that were identified by survey respondents are to protect the beach and encourage continued coastal storm damage reduction and beach protection, manage the density and intensity of new development by regulating the size and layout of lots and buildings, as well as retain and enhance community appearance through landscaping, sign, lighting, and architectural standards. Overall, respondents do not find it important to improve the flexibility of Town regulations. Ensuring continued maintenance and protection of the beach is the most important to survey respondents.

Question 3: What do you think are the most important growth and development issues facing Holden Beach? (Please select as many as three)



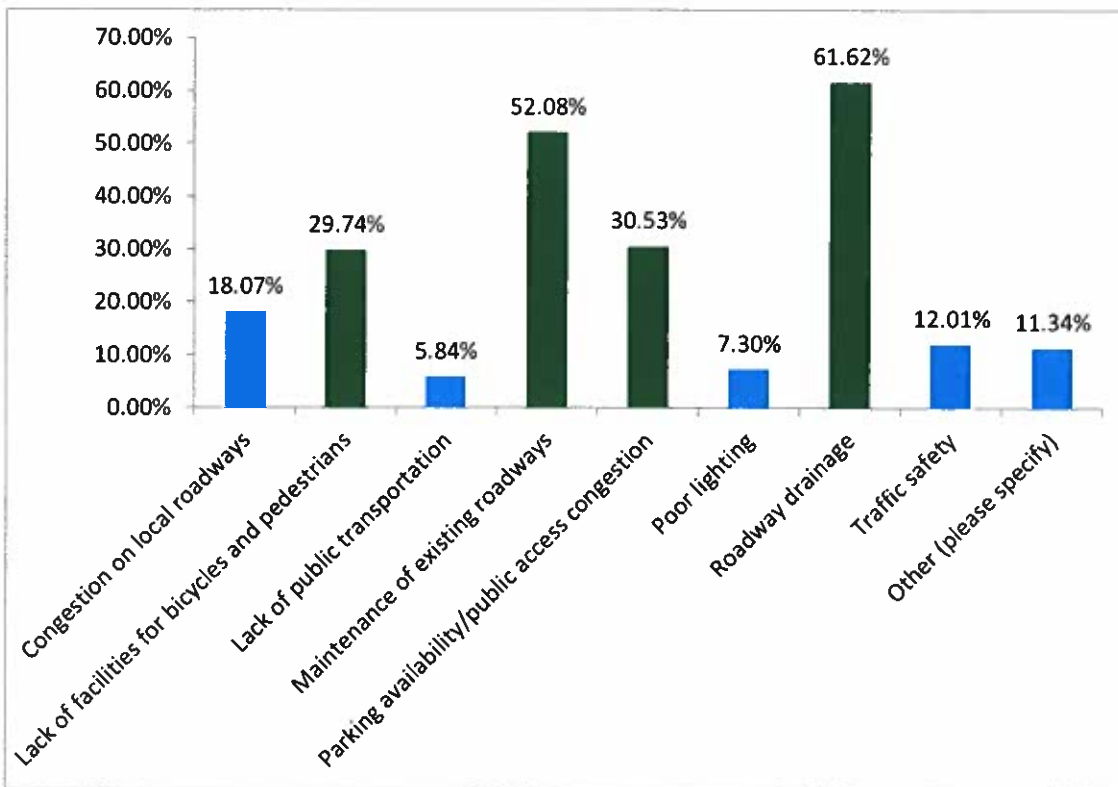
The survey asked respondents to select three of the most important growth and development issues facing Holden Beach. Overall, results showed that three most important issues included coastal storm damage reduction and beach protection, density of development, and environmental protection. Additionally, while non-property owners made up only nine percent of survey responses, this group identified beach access and parking as the second most important growth and development issue. Similar to the results of Question 2, respondents feel coastal storm damage reduction and protection should be prioritized.

Question 4: What efforts do you believe are most important to the economy of Holden Beach? (Please select as many as three)



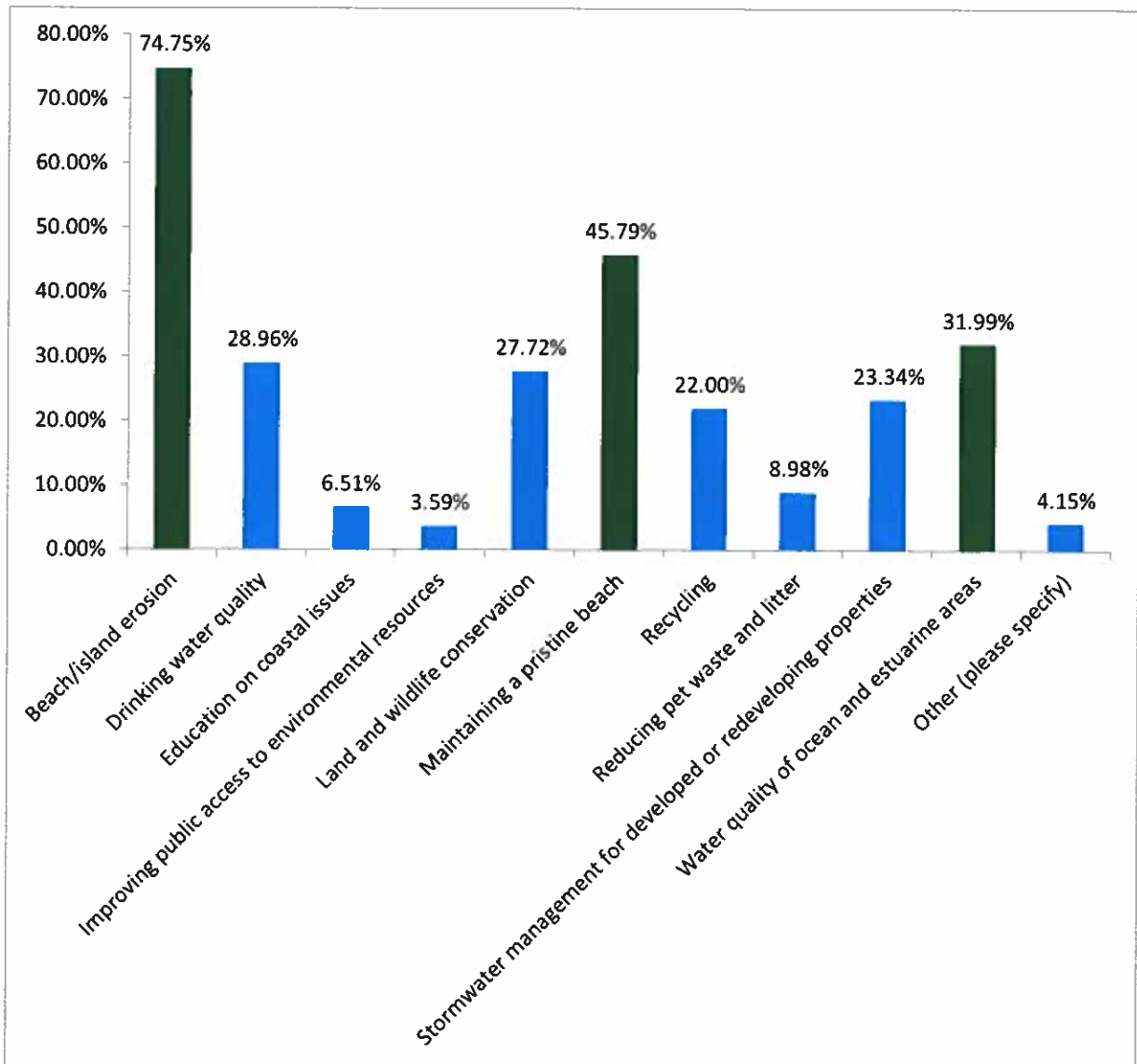
Survey results indicated the two most important efforts in stimulating Holden Beach’s economy are encouraging coastal storm damage reduction and beach protection and encouraging redevelopment of existing business centers. With a statistical tie at 31%, the third most selected answers are attracting more shopping and encouraging more permanent residents. The two least desirable efforts were attracting national/regional chains and franchises and improving access to jobs. Again, coastal storm damage reduction and beach protection was identified as a vital issue.

**Question 5: What do you consider to be the most important transportation issues for Holden Beach?
(Please select as many as three)**



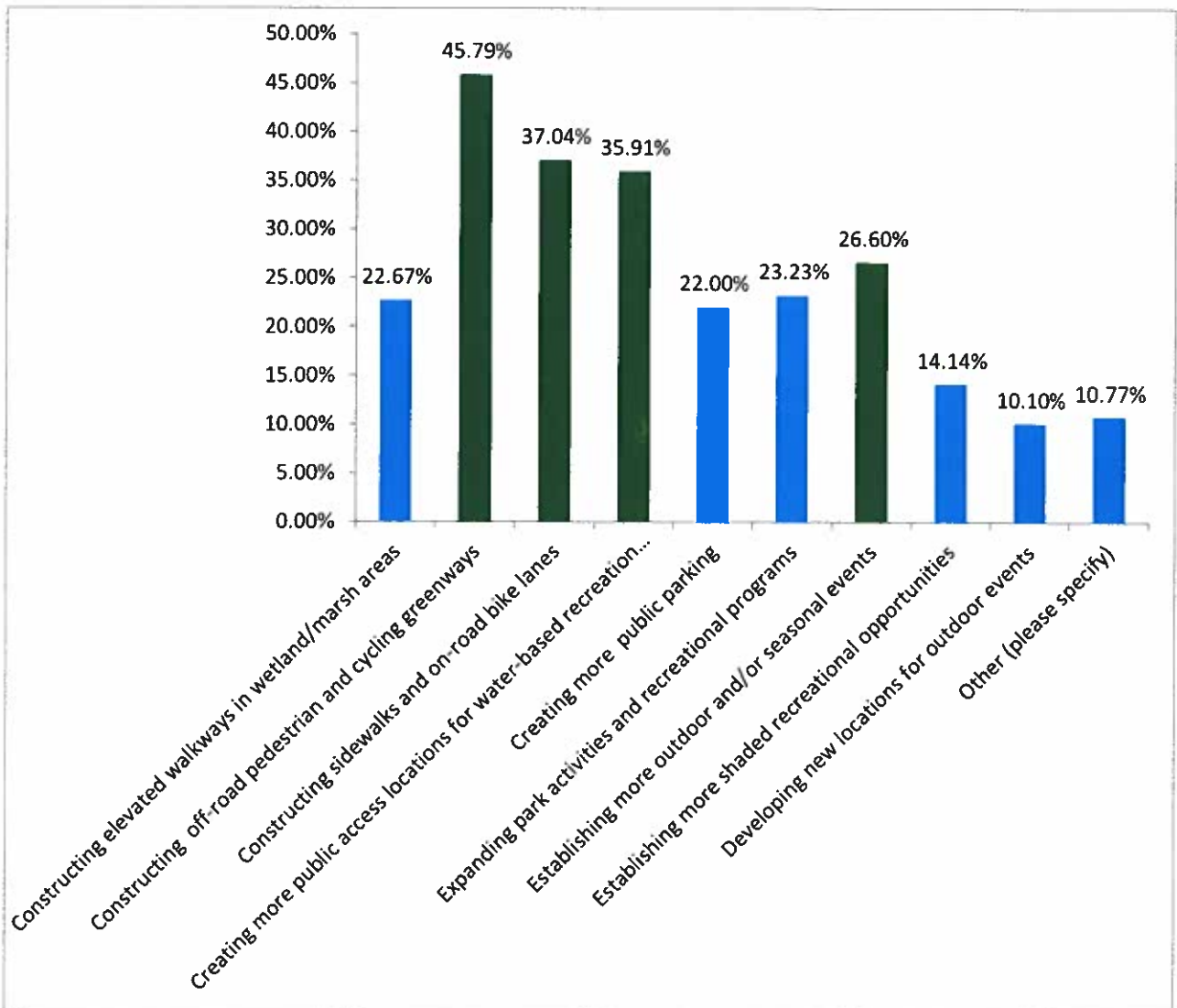
The survey asked respondents to identify what they consider to be the most important transportation issues for Holden Beach. The majority of respondents selected roadway drainage, maintenance of existing roadways, with parking/lack of facilities for bicycles and pedestrians tied for third. Roadway drainage is a common transportation concern in coastal communities. Maintenance of existing roadways was also identified by respondents as a transportation issue.

Question 6: What do you consider to be the most important issues related to the environment and natural resources of Holden Beach? (Please select as many as three)



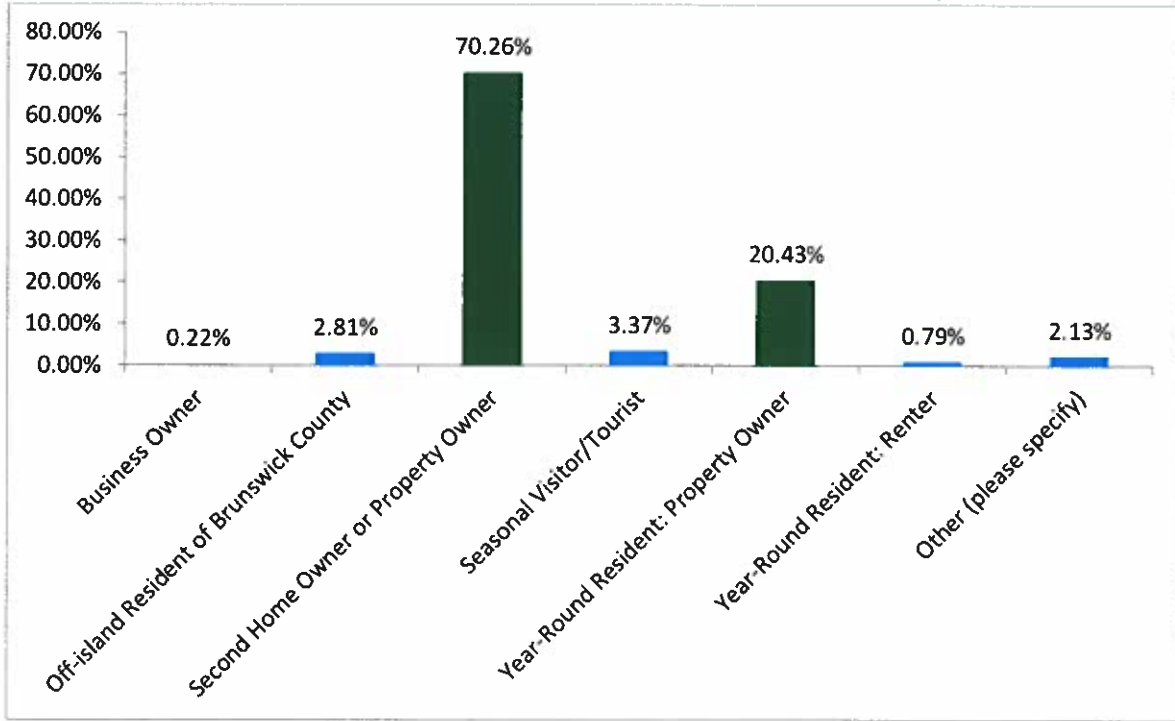
According to the survey results, nearly 75% of respondents consider beach and island erosion to be the most important issue related to the environment and natural resources of Holden Beach. The next two most important issues identified are maintaining a pristine beach and water quality of ocean and estuarine areas. Improving public beach access to environmental resources was identified as the least important issue of survey respondents.

Question 7: What do you consider to be most important in creating recreational opportunities on Holden Beach? (Please select as many as four)



Survey respondents were asked to identify the four most important areas for creating recreational opportunities on Holden Beach. The top three selected included constructing off-road pedestrian and cycling greenways, constructing sidewalks and on-road bike lanes, and creating more public access locations for water-based recreation. Overall, respondents prioritized the need to create more bicycle and pedestrian facilities as the most important for creating recreational opportunities.

Question 8: Which statement best describes your relationship to the Town of Holden Beach?



Survey respondents were asked to best identify their relationship with the Town of Holden Beach. The majority of respondents, at over 90%, were made up of property owners consisting of second homeowners, year-round residents, and business owners. The largest group of property owners was second home owners, which made up 70% of the overall respondents. The remainder of those that responded consisted of seasonal visitors, off-island residents, and year-round renters.

Question 9: What is your favorite thing about Holden Beach?

The survey asked respondents to identify their favorite thing about Holden Beach in an open ended question. The respondents indicated that their favorite things about Holden Beach included its quiet small-town family-friendly atmosphere, beautiful natural environments such as the beach and marshes, and non-commercialized development. In terms of non-commercialized development, respondents felt that the presence of single-family homes rather than retail stores, hotels/motels, and high rise buildings was one of their favorite things about the community.

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

Respondents were asked to provide any additional comments. The responses generally included a common theme, which was for Holden Beach to maintain its family friendly atmosphere and small-town feel. Other responses stated that it was important for the Town of Holden Beach to continue to protect and maintain the great natural resources that it has to offer such as the beach and estuarine areas. Overall, respondents are generally pleased with the current trends in development in terms of maintaining its small-town family-friendly atmosphere and unique natural resources.

PUBLIC INPUT MEETING RESULTS

A Public Input Meeting was held on February 7, 2019, with approximately 35 citizens and steering committee members in attendance. The meeting was held to gather input about the public's concerns and aspirations for the future of Holden 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 six stickers that were to be used to identify the two most important topics within each category.

The results of the facilitated discussion and prioritization process at the Town's Public Input Meeting are provided below. The responses are sorted by the vote tally each received, starting with the responses receiving the highest number of votes.

Assets

- Beach - 21
- Lack of Commercial Development - 9
- Lockwood Folly Inlet - 7
- Marshes and Wetlands - 6
- Canals/Water Access - 4
- Ocean - 3
- Lack of Noise/Quiet - 2
- Low Light Pollution - 1
- Police Department & Low Crime - 1
- Wildlife - 1
- Good Neighbors - 1
- Chapel Community Facility & Activities – 1
- Bridgeview Park - 1
- Water Views
- Holden Beach Chapel
- Great History
- Beautification Club
- Generational Visitors

Issues

- Stormwater - 13
- Rising Sea Level - 9
- Off-Shore Drilling - 7
- Development vs. Preservation - 6
- Road Repairs - 5
- Storm Vulnerability - 4
- Dilapidated Properties – 4

- Parking for Large Homes - 3
- Traffic, Speed - 2
- Ordinance Enforcement - 2
- Nuisance Vehicles/Boats - 1
- Cigarette Butts - 1
- Development Encroachment/Conflict - 1
- Litter
- Deer Over-Population
- Large Animal Control

Desires

- Sustainable Growth - 15
- Beach Renourishment - 12
- Improve Causeway Appearance - 11
- Fully Maintained & Marked Inlet - 7
- Dog Park - 5
- Government Transparency - 3
- Public Pier - 2
- Better Communication to Seasonal Visitors - 1
- Better Beach Access Signage - 1
- Wildlife Management
- County Support for Causeway Redevelopment
- County Tax Rebate



Citizens at the Public Input Meeting

COMMUNITY CONCERNS AND ASPIRATIONS

In compliance with the 15A NCAC 7B requirements, the community concerns and aspirations are outlined below. Holden 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. Ensure the future resilience of the Town through coastal storm damage reduction and beach protection efforts.
2. Encourage a low-density single-family residential development pattern to preserve local character.
3. Support roadway maintenance and stormwater mitigation to reduce localized flooding on Town roadways.
4. Maintain environmental quality and clean water to preserve the coastal natural resources that contribute to the Town’s quality of life.
5. Enhance bicycle and pedestrian facilities to provide safe options for non-motorized transportation.

VISION STATEMENT

The Vision Statement of Holden 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 Holden Beach, community priority issues, local citizen input, and the preferences of the local government were all considered during the statement creation process.

Town of Holden Beach Vision Statement:

Holden Beach will utilize its available resources to be an inclusive, family-oriented, residential community that strives to protect and sustain its natural habitat and recreational beaches for current and future generations.

HOW TO USE THIS PLAN

Holden 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 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 improvement program (CIP) or through subsequent planning efforts.

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

For the Board of 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 Statutes (160A-383) require statements of consistency with comprehensive plans or any other locally adopted plan(s) before adopting or rejecting zoning text changes or map amendments. Amendments to this plan will be initiated and approved by the 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 decisions, the Board of Commissioners may use the Land Use Plan's policies and recommended actions when making decisions on the Town's capital improvement program (CIP) 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 amendments, conditional 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

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, Holden Beach is compared with North Carolina, Brunswick County as well as other coastal communities to better interpret the information. These trends include the population, housing, and economic characteristics of Holden Beach. This information will 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, sewers, 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 2016 are estimations and projections. Statistics from 2016 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 is sourced from the US Census Bureau American Community Survey. Additional information is sourced from the Holden Beach Planning & Inspections Department and the Cape Fear Council of Government where necessary.

POPULATION CHARACTERISTICS AND TRENDS

PERMANENT/YEAR-ROUND POPULATION

Coastal municipalities have fluctuating populations throughout a given year. Determining the impacts of the seasonal population can be difficult due to the range of factors that must be considered in estimating the peak population. In addition, year-round population figures established by the NC state demographer and the US Census Bureau do not account for the seasonal population, thus requiring such figures to be estimated based upon best available data. NOTE: The terms year-round population and permanent population are used interchangeably throughout the chapter.

In Holden Beach, the permanent population has fluctuated since 2000 (See Table 2.1). The population increased from 626 to 787 from 1990 to 2000 and decreased from 787 to 575 from 2000 to 2010. Since 2010, the permanent population has increased to 633 according to the state demographer. However, since 1980 the overall population has increased around 162%. Since 2010, there has been an increase in the permanent population of Holden Beach. Both the Holden Beach and Brunswick County populations are expected to continue to increase as more people are attracted to the area and its unique coastal resources.

Table 2.1: Population Growth/Decline: 1980 – 2016

Source: NC OSBM.

Year	Holden Beach	Absolute Increase/Decrease	Holden Beach	Brunswick County	Absolute Increase/Decrease	Brunswick County
1980	241		%	35,777		%
1990	642	385	159.75%	50,985	15,208	42.51%
2000	787	161	25.72%	73,143	22,158	43.46%
2010	575	(212)	-26.94%	107,431	34,288	46.88%
2016	633	58	10.09%	119,167	11,736	10.92%
1980-2016		392	162.66%		83,390	233.08%

Over the past 25 years, the overall year-round population throughout North Carolina's coastal municipalities has nearly doubled (See Table 2.2). While some municipalities vary 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. Overall, the population in Holden Beach has remained stable over the past 25 years. However, permanent population figures for coastal municipalities do not accurately convey development pressures as the majority of housing units and subsequent development is built for seasonal, not year-round, use.

Table 2.2: Coastal Municipality Permanent Population Growth/Decline: 1990 – 2016

Source: NC OSBM.

Municipality	1990 Population	2000 Population	2010 Population	2016 Population	Percent Change 1990 – 2016
Atlantic Beach	1,938	1,793	1,495	1,501	-22.55%
Bald Head Island	78	179	158	175	124.36%
Carolina Beach	3,631	5,112	5,706	6,015	65.66%
Caswell Beach	155	377	398	450	190.32%
Duck	N/A	450	369	396	-12%
Emerald Isle	2,434	3,485	3,655	3,791	55.75%
Holden Beach	642	787	575	633	-1.40%
Indian Beach	146	95	112	120	-17.81%
Kill Devil Hills	4,288	5,910	6,683	7,195	67.79%
Kitty Hawk	1,937	2,997	3,272	3,516	81.52%
Kure Beach	618	1,557	2,012	2,193	254.85%
Nags Head	1,838	2,700	2,757	2,977	61.97%
North Topsail Beach	1,375	1,514	743	768	-44.15%
Oak Island	N/A	6,668	6,783	7,529	12.91%
Ocean Isle Beach	534	415	553	639	19.66%
Pine Knoll Shores	1,375	1,514	1,339	1,361	-1.02%
Southern Shores	1,447	2,218	2,714	2,952	104.01%
Sunset Beach	321	2,119	3,572	4,128	1185.98%
Surf City	948	1,476	1,853	2,103	121.84%
Topsail Beach	362	473	369	410	13.26%
Wrightsville Beach	2,797	2,592	2,477	2,509	-10.30%
NC Coastal Average					107.17%

POPULATION BY AGE

Since 2000, the Town of Holden Beach has seen the greatest increase in the permanent residents aged 55 and above. During this period the median age of residents increased by nearly 11 % (See Table 2.3). This illustrates the aging population of the community as well as in-migration by older individuals. Additionally, the 2016 median age of the permanent residents is 61.4 years. This median age is higher than Brunswick County which is 50.9 years. Compared with North Carolina, both Brunswick County and the Town of Holden Beach have older populations.

Table 2.3: Permanent Population by Median Age 2000 & 2016

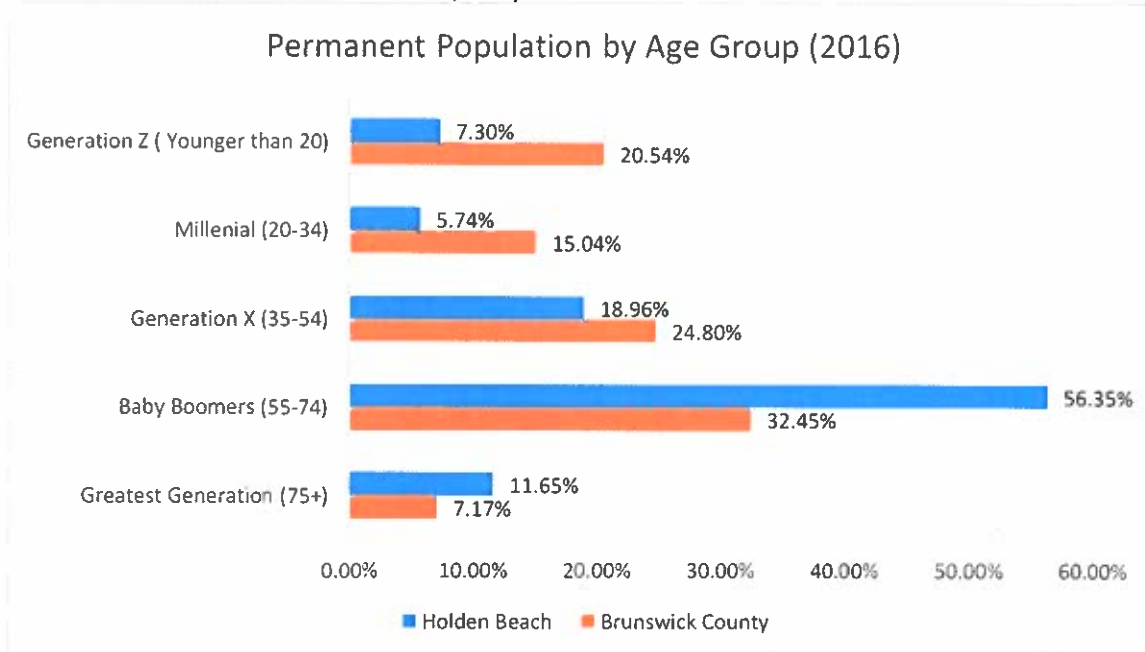
Source: US Census Bureau 2016 American Community Survey

	Holden Beach			Brunswick County		
	2000	2016	Percent Change	2000	2016	Percent Change
Median Age	55.4	61.4	10.83%	42.2	50.9	20.62%

The permanent population of Holden Beach consists mostly of individuals aged 55 and above. Accordingly, Baby Boomers (aged 55-74) account for the largest age group in Holden Beach (See Figure 2.1). This age group makes up 56% of Holden Beach’s permanent residents. This age group is also the largest in Brunswick County. This highlights the in-migration of retirees that is common in similar coastal communities throughout the region. As illustrated in Figure 2.1, around 13 percent of the population of Holden Beach is aged 34 and below. This is much lower compared to Brunswick County. There is a relative absence of individuals aged 34 and below in Holden Beach. 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

Source: US Census Bureau 2016 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. Whereas, 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 few methods that can be used to estimate the population.

SEASONAL ESTIMATE BY HOUSING & VACATION UNIT

According to American Community Survey data, there were 1,588 vacant units categorized as seasonal use in the year 2016. 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: 2016 Peak Seasonal Overnight Population – Holden Beach

Source: US Census Bureau 2016 American Community Survey and Holden Beach Planning/Inspections Department

2016 Peak Seasonal Overnight Population Estimate*		
Housing Units	Persons per Unit	Total
Permanently Occupied Housing (494)	1.28 + 2 guest per Unit	1,620**
Seasonal or Recreational Housing (1,588)	8	12,069
Other Vacant Housing (409)	8	3,108
Total		16,797

*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 recreational housing; and 95 percent occupancy for vacant housing.

**The permanent population and seasonal increase is based upon the NCOSBM population of 633 + 1 additional person per housing unit.

It is estimated that during the summer season, the peak seasonal overnight population in the Town of Holden Beach can reach 16,797 people. This is 28 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 12,598 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, sewer, 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 sections.

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. 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 226 permanent public parking spaces x 4 persons per vehicle = 1,356 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 visitors will need a place to park. There are 226 public parking spaces on Holden 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 1,356 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 – Holden Beach

Source: Holden Beach Planning/Inspections Department

Parking Spaces	Persons Per/Vehicle	Shifts of Parking	Total
226	4	1.5	1,356

PEAK SEASONAL OVERNIGHT POPULATION AND DAY-TRIP VISITORS

It is estimated that an additional 1,000 to 2,000 day-trip visitors may be on the island during a peak day. These visitors utilize other available non-permanent parking spaces such as the right-of-way. Based on these figures, it is estimated that approximately 20,000 people visit, reside, or stay overnight within the 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. Holden Beach is located in Brunswick County, which is the fastest growing county in North

Carolina as well as one of the fastest growing counties in the United States. In addition, Holden Beach is located within 30 miles of the high growth areas of North Myrtle Beach, SC and Wilmington, NC.

County population projections are provided by the North Carolina State Demographer (NCOSBM); however, municipal population projections are not, thus requiring a third party estimate of the projection. The State Demographer's population growth estimate for Brunswick 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 Holden Beach.

The Division of Coastal Management (DCM) recommends the use of the ratio approach to develop population projections for municipalities. The population projection for Holden Beach can be determined by utilizing the NC Office of State Budget and Management (NCOSBM) population projections for Brunswick County. In 2016, Holden Beach accounted for 0.5% of the population of Brunswick 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 2037. Estimates through 2046 were made by the Cape Fear Council of Governments (CFCOG). These additional estimates assumed linear growth beyond 2037.

Table 2.6: 30-Year Population Projection – Holden Beach

Source: NCOSBM and Cape Fear COG.

Year	2016	2020	2025	2030	2035	2040	2046
Holden Beach	633	708	783	859	935	1,016	1,095
Brunswick County	123,404	141,520	156,662	171,805	186,944	203,280	219,017
Share (2016)	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%

The ratio method assumes that Holden Beach will always account for 0.5% of the population of Brunswick County. Therefore, by using the equation below, the population projection for the Town can be calculated for any given year.

$$\text{Population of Holden Beach} = 0.5\% \times \text{Population of Brunswick County}$$

In the year 2046:

$$1,087 \text{ (2046 pop.)} = 0.5\% \text{ (pop. ratio)} \times 217,400 \text{ (Brunswick Co. pop.)}$$

In 2035, the permanent population of Holden Beach is projected to be 935 people. This is an increase of about 300 people or nearly 50%. In 2046, the permanent population is expected to be 1,087 people. Assuming this projection is accurate, the permanent population will nearly double over the next thirty years. It is important to note that such a substantial increase would only result from a significant amount of seasonal housing unit conversion to permanent/year-round use.

From 2010 to 2016, fifty-eight (58) new permanent residents were added to the Town's population which equates to the addition of around 10 new permanent residents a year. If the population projections were calculated based upon the addition of 10 new residents a year, then the permanent population in 2046 would be 933. However, basing the population projection on growth from 2010 to 2016 is likely misleading as 2010 through most of 2013 were characterized by lower than normal growth as a result of the economic downturn. Therefore, it is expected that the population will increase anywhere between 270 to 462 residents over the next 30 years.

HOUSING CHARACTERISTICS AND TRENDS

Analyzing the types of existing housing stock enables the community, elected officials and planners to 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 2016, the number of housing units in Holden Beach increased by more than 21% or by nearly 450 units. According to American Community Survey data, 399 new single-family units were constructed between 2000 and 2016. The Town of Holden Beach will continue to be predominantly occupied by single-family housing units. Compared with Brunswick County, Holden Beach experienced a lower growth rate in total housing units from 2000 to 2016.

Table 2.7: Housing Units by Type – Holden Beach & Brunswick County

Source: US Census Bureau 2016 American Community Survey

Housing Units	Holden Beach			Brunswick County		
	2000	2016	% Change	2000	2016	% Change
Total, All Housing Units	2,062	2,491	20.81%	51,431	81,727	58.91%
Total All Single-Family Units	1,834	2,257	23.06%	29,291	54,571	86.31%
Multi-Family (Two or More Units)	228	231	1.32%	3,569	8,747	145.08%
Mobile Homes	-	-	-	18,458	18,799	1.85%
Other	-	-	-	113	81	-28.32%

HOUSING TENURE

In 2016, nearly 20% of the housing units in Holden Beach were occupied on a year-round basis. This compares with Ocean Isle Beach which has an occupancy rate of 10.7%. The occupancy rate of Holden Beach is much lower compared to Brunswick County which has an occupancy rate of nearly 62% as of 2016. The Town's occupancy rate is consistent with other coastal communities that have a large portion of season/vacation homes.

In 2000, the vacant/seasonal housing in Holden Beach was 81.6% which is slightly higher than the 2016 percentage of 80.2%. This indicates a slight increase in the share of permanently occupied housing units. The largest change was seen in seasonal vacation homes, a 46% increase (See Table 2.8). It is likely that the percentage of vacant housing units will continue to decrease due to a steady increase in permanent residents as well the conversion of seasonal units to full-time use. The share of housing units dedicated to seasonal use will continue to be much greater than the share of units occupied year-round.

Table 2.8: Housing Tenure – Holden Beach & Brunswick County

Source: US Census Bureau 2016 American Community Survey

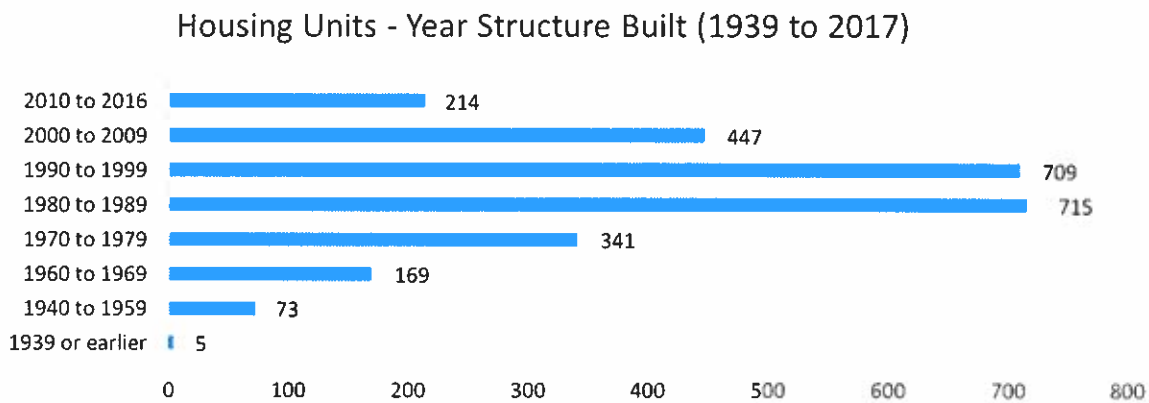
Housing Units	Holden Beach			Brunswick County		
	2000	2016	% Change	2000	2016	% Change
Total Housing Units	2,062	2,491	20.81%	51,431	81,727	58.91%
Occupied	379	494	30.34%	30,438	50,562	66.11%
Owner Occupied	331	456	37.76%	25,013	38,378	53.43%
Renter Occupied	48	38	(20.83)	5,425	12,184	124.59%
Vacant	1,683	1,997	18.66%	20,993	31,165	48.45%
Seasonal, recreational & occasional use	1,091	1,588	45.55%	15,540	24,753	59.29%
All other vacant	592	409	(-30.91%)	5,453	6,412	17.59%

HOUSING UNIT TRENDS

In Holden Beach, the eighties and the nineties experienced the greatest overall increase in housing units compared to other periods (see Figure 2.2). During that period, Holden Beach saw more than 1,400 housing units built. From 1980 to 1989 there were 715 housing unit structures built with 709 built from 1990 to 1999. Holden Beach saw a decline in structures built after 2000 as there were 447 housing structures built from 2000 to 2009, as a result of economic downturn.

Figure 2.2: Housing Units – Year Structure Built: Holden Beach

Source: US Census Bureau 2016 American Community Survey & Town of Holden Beach

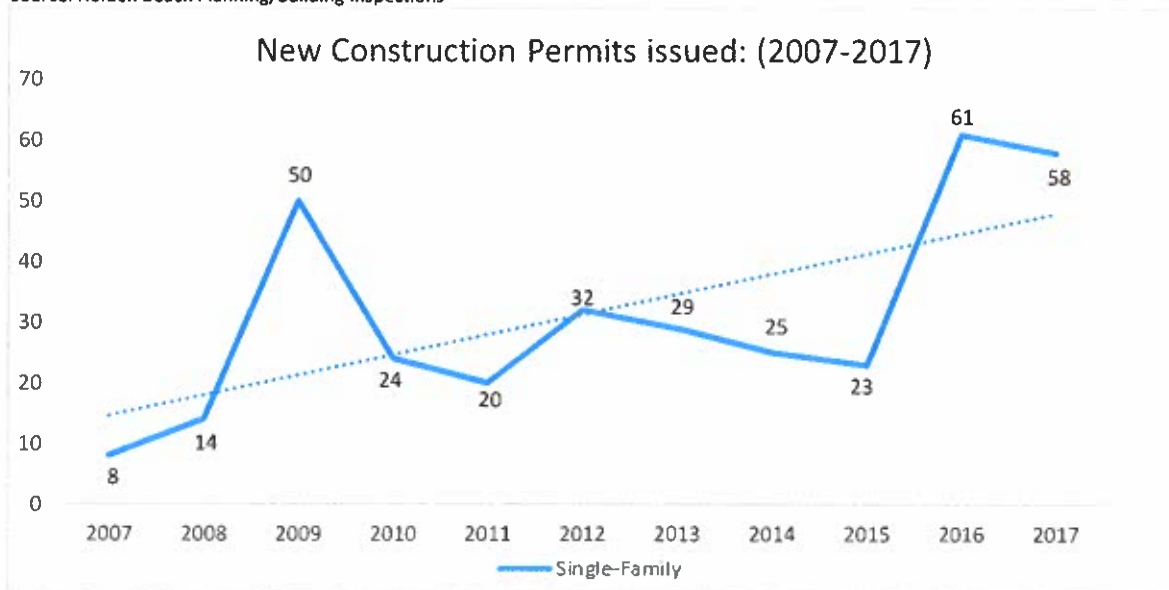


*2010-2016 is based on a six-year period.

As illustrated in Figure 2.2, 214 new housing units were built or permitted from 2010 to 2016. Based on this trend, new housing growth was slower than the previous decade, but overall since 2015 there has been an increase in permit activity (see Figure 2.3). The results of the 2020 US Census should provide data that will allow for a more accurate comparison between housing unit growth in the first two decades of the 2000s.

Figure 2.3: New Construction Permits – Holden Beach

Source: Holden Beach Planning/Building Inspections



In terms of trends, the number of permits issued for single-family construction hit a low in 2007 when only eight permits were issued. Since 2007, 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 31 construction permits issued each year. From 2007 to 2017 there were no multi-family or commercial building permits issued. All of the construction permits issued during this period were for single-family homes. As seen in Figure 2.3 there has been a significant increase in construction permits issued since 2015.

HOUSING VALUE

According to the American Community Survey data, from 2016, the median value of owner occupied housing in Holden Beach is \$406,100. Nearly 33% of the owner-occupied housing is valued at \$500,000 and above. In the neighboring Town of Ocean Isle Beach, 47% of the owner-occupied housing is in the same category. In addition, in Holden Beach 52% of the owner occupied housing stock is valued from \$300,000 to \$499,999. Housing values are generally consistent with Ocean Isle Beach, in which 37% of its owner occupied housing stock is valued between \$300,000 and \$499,999 (see Table 2.9). Lastly, only 7% of owner occupied housing in Brunswick County is valued at \$500,000 or more.

Table 2.9: Owner Occupied Housing Value

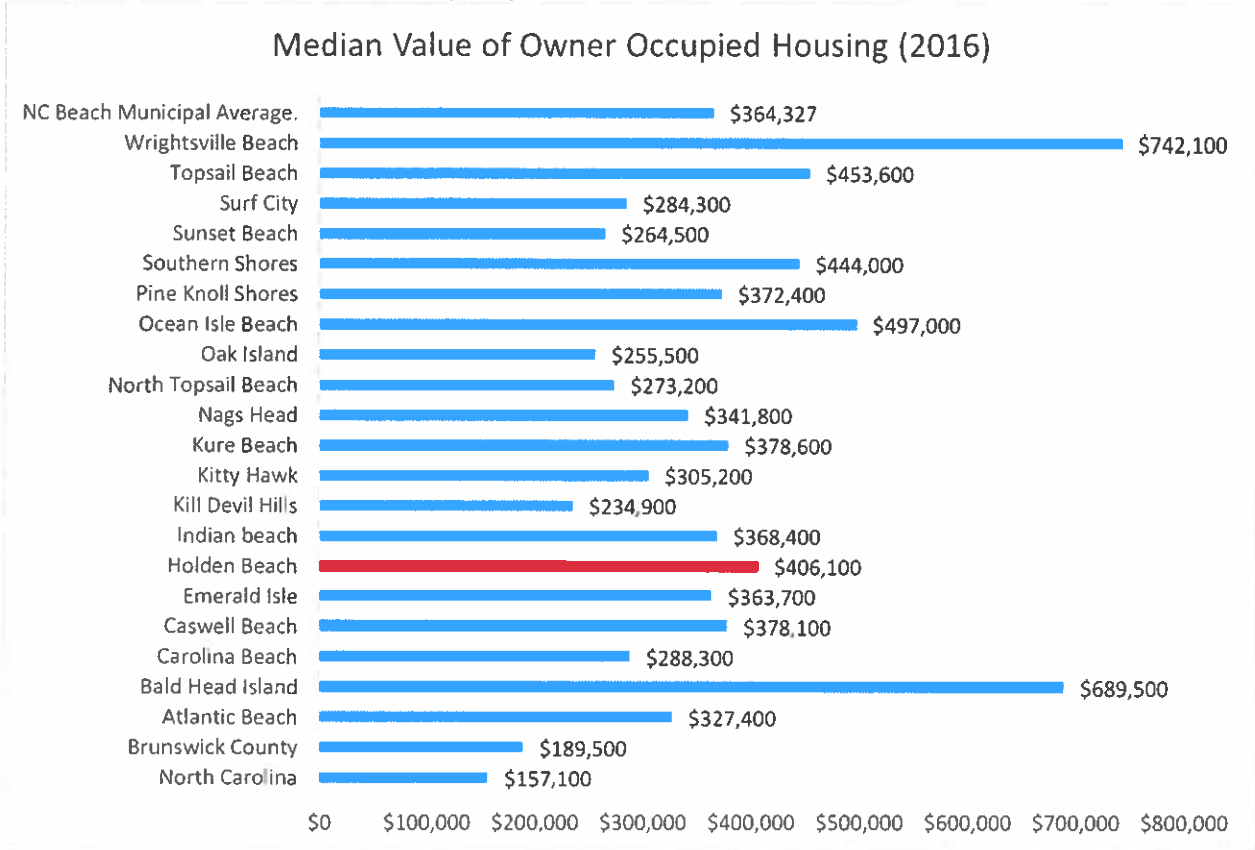
Source: US Census Bureau 2016 American Community Survey

Housing Value	Holden Beach		Ocean Isle Beach		Oak Island	
	2016	Percent Total	2016	Percent Total	2016	Percent Total
Less Than \$99,999	0	0%	5	1.71%	63	3%
\$100-149,999	13	2.85%	5	1.71%	292	12%
\$150-199,999	11	2.41%	7	2.39%	438	17%
\$200-299,999	45	9.87%	32	10.92%	818	33%
\$300-499,999	236	51.75%	107	36.52%	573	23%
\$500,000-999,999	133	29.17%	115	39.25%	302	12%
\$1,000,000+	18	3.95%	22	7.51%	28	1%
Total	456	100%	293	100%	2,514	100%

Compared with other North Carolina coastal municipalities, owner-occupied housing values are the sixth highest in Holden Beach. The coastal municipalities with a higher median value for owner occupied housing include Southern Shores, Topsail Beach, Ocean Isle Beach, Bald Head Island, and Wrightsville Beach (see Figure 2.4).

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

Source: US Census Bureau 2016 American Community Survey



INCOME

In the Town of Holden Beach, the median household income for occupied households is around 50% higher than Brunswick County. Around 230 occupied households or 46% of total occupied households have a household income above \$75,000. Brunswick County has 29% of its occupied housing within this category. In addition, the median family income is nearly \$30,000 higher than in Brunswick County and the per capita income is nearly double that of Brunswick County (See Table 2.10).

Table 2.10: Median Household Income – Occupied Households

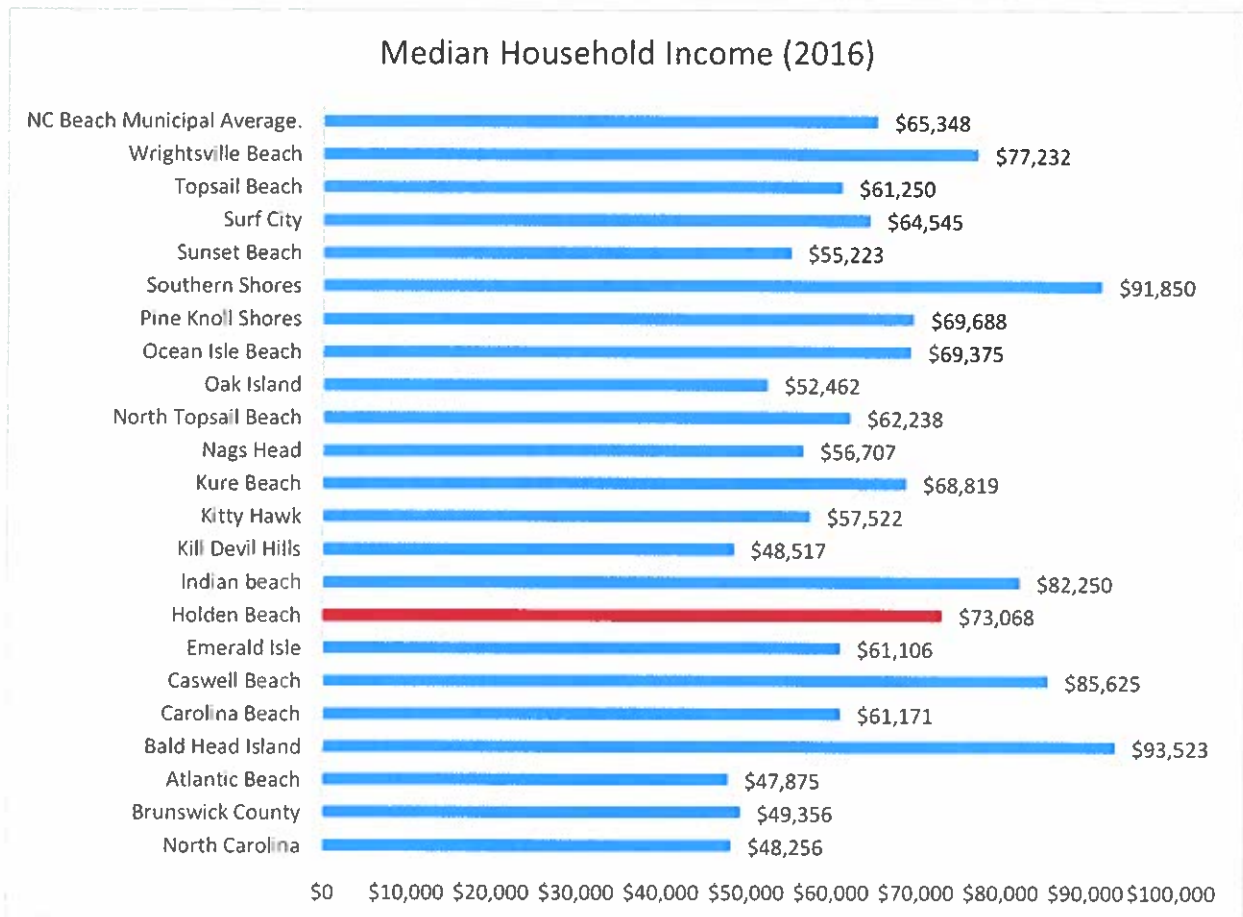
Source: US Census Bureau 2016 American Community Survey

Income Range	Holden Beach		Brunswick County	
	Number	Percent	Number	Percent
Less than \$10,000	13	3%	3,540	7%
\$10,000 to \$14,999	5	1%	2,805	6%
\$15,000 to \$24,999	26	5%	5,664	11%
\$25,000 to \$34,999	35	7%	5,882	12%
\$35,000 to \$49,999	68	14%	7,675	15%
\$50,000 to \$74,999	117	24%	10,007	20%
\$75,000 to \$99,999	46	9%	6,275	12%
\$100,000 to \$149,999	110	22%	5,496	11%
\$150,000 to \$199,999	27	5%	1,744	3%
\$200,000 or more	47	10%	1,474	3%
Total Households	494	100%	50,562	100%
Median Household Income	\$73,068		\$49,356	
Median Family Income	\$89,375		\$59,436	
Per Capita Income	\$51,605		\$28,694	

Among other coastal municipalities in North Carolina, Holden Beach's median household income is the sixth highest (see Table 2.11). The Town's median household income of \$73,068 is also much higher than that of the state overall. The median household income in North Carolina in 2016 was \$48,256. 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: US Census Bureau 2016 American Community Survey



LOCAL ECONOMY

Like many smaller coastal communities, the traditional local economy is predominantly driven by seasonal tourism, coastal real estate, housing maintenance services, and recreation. Holden Beach is located close to both North Myrtle Beach, SC and Wilmington, NC. Both of these areas are expanding as a regional commercial centers with large-scale retail, recreation, entertainment, and service industries.

As described previously, there are fewer year-round residents of the Town compared to other coastal communities. This implies that the local economy of Holden Beach is primarily dependent on seasonal tourism, recreation, and rental housing activity for generating economic revenue.

SEASONAL ACCOMMODATION ACTIVITY

While seasonal vacationers are vital to the local economy, most of the seasonal rental activity is of single-family homes, duplexes, and condos.

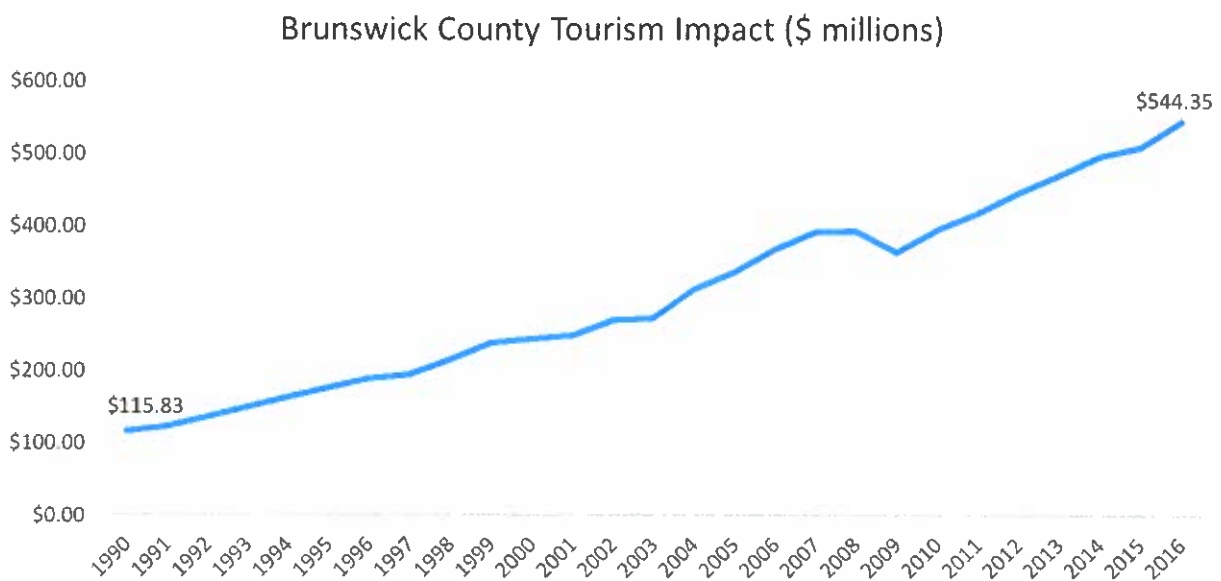
Of the year-round population aged 16 years and over, less than 42% are considered part of the labor

force. According to census data, individuals classified as “not in the labor force” consist mainly of students, homemakers, retired workers, seasonal workers interviewed in an off-season who were not looking for work, and people doing only incidental unpaid family work (less than 15 hours during the reference week). Accordingly, retired workers make up the most significant portion of the persons not considered to be part of the Town’s labor force.

Further evidence of the importance of the tourism to the Town is the financial impact experienced throughout Brunswick County. Even when adjusting for inflation, the economic impact of tourism in Brunswick County has experienced a meteoric rise over the last twenty years. In 2016, the economic impact of tourism in Brunswick County was over \$544 million.

Figure 2.6: Brunswick County Tourism

Source: NC Commerce Travel Impact Model



SUMMARY

Based on the statistics contained within this chapter, and the comparative data provided in Table 2.11, it is clear that the Town of Holden Beach is among the more exclusive and upscale coastal communities in North Carolina. Furthermore, the change in population from the off-season to the peak season is likely one of the most substantial increases of all coastal communities in the state, with a multiplying factor of nearly 28 times the permanent population. As with Brunswick County, the Town will continue experience population growth over the next thirty years as the coast of North Carolina continues to be huge draw for retirees and those seeking the lifestyle offered by such. 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 Holden Beach, the permanent population increased from 241 to 633 residents from 1980 to 2016. This is an increase of around 260%.
- The median age in Holden Beach is 61.4.
- It is estimated that an additional 1,000 to 2,000 day-trip visitors may be on the island during a

peak day. These visitors utilize other available non-permanent parking spaces such as the right-of-way. Based on these figures, it is estimated that approximately 20,000 people visit, reside, or stay overnight within the town limits on a peak summer day.

- In 2035, the permanent population of Holden Beach is projected to be 935 people. This is an increase of about 300 people or around 48%.
- As of 2016, nearly 20% of the housing units in Holden Beach were occupied year-round; a low percentage even for a coastal community. For example, Sunset Beach both has a higher year-round occupancy rate at 36.3%, noting that Sunset Beach has a much larger mainland/year-round population compared to Holden Beach.
- Compared with all of North Carolina's coastal municipalities, owner-occupied housing values are the 6th highest in Holden Beach.
- Of the year-round population aged 16 years and over, less than 42% are considered part of the labor force.

Table 2.11: Demographic Characteristics of Selected North Carolina Beach Communities

Source: US Census Bureau 2016 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	38.3	85.7%	62.6%	\$48,256	\$59,667	\$26,779	65.2%	\$157,100
Brunswick County	50.9	61.9%	51.3%	\$49,356	\$59,436	\$28,694	64.1%	\$189,500
Atlantic Beach	53.8	18.6%	64.8%	\$47,875	\$57,292	\$35,102	34.6%	\$327,400
Bald Head Island	66.3	13.5%	31.6%	\$93,523	\$92,188	\$76,996	89.5%	\$689,500
Carolina Beach	44.2	45.8%	63.3%	\$61,171	\$86,677	\$36,701	35.6%	\$288,300
Caswell Beach	66.8	30.4%	37.5%	\$85,625	\$110,250	\$57,823	54.3%	\$378,100
Emerald Isle	53.7	27.5%	52.8%	\$61,106	\$76,750	\$40,499	56.6%	\$363,700
Holden Beach	61.4	19.8%	41.9%	\$73,068	\$89,375	\$51,605	85.8%	\$406,100
Indian Beach	61.8	6.7%	39.7%	\$82,250	\$129,375	\$52,857	8.4%	\$368,400
Kill Devil Hills	38.7	43.5%	75.0%	\$48,517	\$58,011	\$25,985	78.7%	\$234,900
Kitty Hawk	50.0	47.4%	72.1%	\$57,522	\$61,000	\$32,527	66.3%	\$305,200
Kure Beach	56.4	46.0%	52.5%	\$68,819	\$82,938	\$39,743	62.0%	\$378,600
Nags Head	44.3	25.2%	67.2%	\$56,707	\$83,333	\$37,290	82.0%	\$341,800
North Topsail Beach	46.1	22.5%	62.4%	\$62,238	\$61,750	\$40,048	37.0%	\$273,200
Oak Island	55.9	40.2%	48.4%	\$52,462	\$60,577	\$35,280	82.4%	\$255,500
Ocean Isle Beach	61.6	10.7%	47.9%	\$69,375	\$90,833	\$58,762	68.4%	\$497,000
Pine Knoll Shores	62.7	32.5%	42.7%	\$69,688	\$82,083	\$40,113	52.0%	\$372,400
Southern Shores	56.0	48.1%	58.7%	\$91,850	\$103,250	\$44,390	97.0%	\$444,000
Sunset Beach	67.5	36.3%	31.4%	\$55,223	\$67,788	\$36,637	58.3%	\$264,500
Surf City	40.5	31.9%	59.8%	\$64,545	\$75,792	\$36,576	61.6%	\$284,300
Topsail Beach	58.4	14.2%	58.5%	\$61,250	\$74,792	\$47,308	84.5%	\$453,600
Wrightsville Beach	43.3	43.0%	67.4%	\$77,232	\$101,250	\$60,431	42.0%	\$742,100
NC Beach Municipal Average	53.6	34.15%	54.07%	\$65,348	\$80,200	\$42,824	62.10%	\$364,327
Holden Beach Rank	7th Highest	6th Lowest	5th Lowest	6th Highest	7th Highest	6th Highest	3rd Highest	6th Highest

CHAPTER 3: NATURAL SYSTEMS ANALYSIS

Protecting and enhancing Holden Beach’s natural systems is critical to the quality of life of residents and visitors. 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 of Holden Beach 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 Holden 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 of Holden Beach.

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 Holden Beach, public water supplies and natural and cultural resources 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 that includes the Town's sounds, marshes, and surrounding shorelines. The system includes 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)*). Holden Beach's estuarine waters include the Intracoastal Waterway (ICWW), Shallotte River, Lockwood Folly River, canal waters, and others.

Estuaries are extremely productive natural systems. See Map 3.1 Areas of Environmental Concern.

Estuarine waters in and around Holden 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 (15NCAC 7H.0209). For non-Outstanding Resource Waters (ORW), the estuarine shoreline is defined as 75 feet landward from mean high water line (MHWL) [See Map 3.1]. For ORW waters, the distance is 575 feet. However, there are no ORW waters within Holden Beach. CAMA permits control development within the shoreline areas. Generally, development in this area may not weaken natural barriers to erosion, must have limited hard surfaces, and must take steps to prevent pollution of the estuary by sedimentation and runoff.

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 Holden 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 Needlebrush, 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, Holden Beach has coastal wetlands of the brackish saltwater variety and a limited area considered freshwater marsh. There are 583.8 acres of wetlands within the Town's corporate limits. Throughout the corporate limits, 357.5 acres are coastal wetlands, both salt water and fresh water marsh, and 226.2 acres are considered non-coastal wetlands. See Map 3.1 Areas of Environmental Concern depicting coastal wetlands. Coastal wetlands are considered to be unsuitable for all development activities and other land uses that alter their natural functions.

PUBLIC TRUST AREAS

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

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

- All waters in artificially created water bodies where the public has acquired rights by prescription, custom, usage, dedication or any other means (CAMA Handbook for Development in Coastal North Carolina).

Accordingly, the Town of Holden Beach's public trust waters include all estuarine waters, their tributaries, and the Atlantic Ocean. Since the submerged tidal waters are held in trust for the public, the state's policy is to ensure that the public is able to maintain access to these waters. 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.

OCEAN HAZARD SYSTEM

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

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

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 (15 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.

Erosion rates vary significantly throughout Holden Beach, with the most significant rates found on the east end of the island.

INLET HAZARD AREA

The inlet hazard area AEC covers the land at the eastern and western ends of the island [See Map 3.1]. The *Inlet Hazard Area* extends inland a sufficient distance to encompass the area where the state reasonably expects the inlet could migrate in the future (15 NCAC 7H .0304). Development within the inlet hazard area must comply with three key use standards: (1) it must comply with setbacks for the ocean erodible area found in the preceding section; (2) the density for commercial and residential structures is limited to no more than three units per acre; and, (3) only residential structures of four units or less, or commercial structures less than 5,000 square feet or less, are allowed.

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. Currently, there is no unvegetated beach area within the Holden Beach planning jurisdiction.

SOIL CHARACTERISTICS

Soils found on Holden Beach have limited development potential for onsite sewage disposal systems (OSDS) due to poor filtration or being wet with poor filter. However, these soil conditions are of limited importance because Holden Beach is served by a central sewer system. Soils found on the Island include Newhan Fine Sand, consisting of gently sloping, excessively drained sands located throughout the island in upland areas and built-upon lots or those suitable for future development. These soils also consist of dredge spoil that are often found along the edges of the mainland and in the areas where the canals were dredged to create the current Island configuration. Carteret loamy sands make up much of the undeveloped land on the island, which consists of very poorly drained sandy soils often found in tidal marshes. They are saturated continuously with water and flooded twice daily by tides. Generally, tidal marsh areas have limited suitability for development.

HAZARDS

The Town of Holden Beach is located along the southern coast of Brunswick County. It is a barrier island bordered by the Atlantic Ocean and the ICWW. Due to its geographic location, 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. The majority of Holden Beach lies within the 100-year flood plain [See Special Flood Hazard Areas Map 3.2]. The flood plain in Holden 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;
- **AO zones:** Special flood hazard areas inundated by the 100-year flood (one percent chance of a hundred year flood event); typically sheet flow on sloping terrain;
- **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.

The majority of Holden Beach is located in the AE zone. However, most of the Town's oceanfront lots/structures are comprised of VE zones (See Table 3.1). Unlike the majority of barrier islands in southeastern North Carolina, there are isolated areas of Holden Beach that are not considered part of the 100-year floodplain. These areas are considered within the 500-year floodplain and are depicted by green shading on Map 3.2. These areas are concentrated on the east end of the island.

Due to recently adopted flood maps, substantial portions of the Island moved from a coastal VE zone to a coastal AE zone. Furthermore, much of the portions of the Island that changed from VE zones to AE zones included a reduction in the base flood elevation from 17/18 feet to 12/13 feet. For future development, this change modifies the elevation at which the first habitable floor of a structure may be constructed – in some cases lowering the requirement by six feet.

It is important to note, that although some areas of Holden Beach have been reclassified from Zone VE to Zone AE, portions of the AE Zone are potentially vulnerable to wave action at a 1-percent-annual-chance flood event. This area is referred to as the Limit of Moderate Wave Action (LiMWA) and identifies the seaward side of the A Zone that is potentially vulnerable. Typically land located within a LiMWA zone are subject to VE Zone construction standards. Currently, there has not been a LiMWA identified within the Town of Holden Beach.

Table 3.1: Housing Units within a Special Flood Hazard Area

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

Special Flood Hazard Area*	
AE	2,134
AO	26
VE	142

FEMA FLOOD INSURANCE

According to the Federal Emergency Management Agency (FEMA), there are 4,406,664 flood insurance policies in force. Flood insurance is available in 19,859 participating communities nationwide including Holden Beach, where 1,827 policies are in force valued at \$496,705,500. Since 1978, there have been 2,125 documented losses with payments exceeding \$12,500,000.

One way to help minimize these losses and lower flood insurance premiums is to participate in the National Flood Insurance Program’s (NFIP) 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. There are 994 communities receiving flood insurance premium discounts based on their implementation of local mitigation, outreach, and educational activities that go beyond minimum NFIP requirements. While premium discounts are one benefit of participating in the CRS, the real benefit is that these activities help save lives and reduce property damage. Holden Beach participates in the CRS; the Town is a Class 8, which allows property owners to receive a 10 percent savings on their flood insurance policy.

Table 3.2: Flood Insurance Policies (As of July 31, 2018)Source: FEMA, Insurance Policies: <https://bsa.nfipstat.fema.gov/reports/1011.htm>

	Policies In-Force	Insurance In-Force
Holden Beach	1,827	\$496,705,500
North Carolina	134,306	\$33,713,887,700

Table 3.3: Loss Statistics for Holden Beach, Brunswick County and North Carolina (1978 – July 2018)Source: FEMA, Loss Statistics: <https://bsa.nfipstat.fema.gov/reports/1040.htm#37>

	Total Losses	Total Payment
Holden Beach	2,125	\$12,556,478.02
Ocean Isle	1,799	\$8,313,945.04
Brunswick County	439	\$4,525,946.14
North Carolina	83,790	\$1,238,516,628.11

HURRICANES

One of the main flooding threats is from hurricanes. A hurricane is a cyclonic storm that originates in tropical ocean waters. As a hurricane develops, barometric pressure at its center falls while its winds increase. Winds at or exceeding 39 miles per hour result in a named tropical storm that is closely monitored by the National Oceanic and Atmospheric Administration's (NOAA's) National Hurricane Center [Table 3.4]. 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 storms as the most severe) [Table 3.4]. 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 Holden Beach has been impacted by Hurricanes Matthew, Michael, and Florence. Each storm had the potential to cause catastrophic damage from wind and flooding. Ultimately, the most substantial damage occurred to inland communities some fifty miles from the coast. However, damage was sustained on the island from those storm events.

Table 3.4: Hurricanes and the Saffir-Simpson Scale

Source: National Hurricane Center: <http://www.nhc.noaa.gov/aboutshws.php> and Hurricane Zone.net <http://www.hurricanezone.net/articles/saffirsimpsonscale.html>

Category	Wind Speed (mph)	Types of Damage	Storm Surge
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.	Storm surge 3 to 5 feet above normal. Low lying roads inundated. Minor pier damage.
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.	Storm surge 6 to 8 feet above normal. Low lying roads inundated. Low lying escape routes cut by rising water two to four hours before storm's arrival. Considerable pier damage. Marinas flooded. Evacuation of some shoreline and low lying areas required.
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.	Storm surge 8 to 12 feet above normal. Serious flooding at coast and many smaller structures near the coast destroyed. Larger structures near the coast damaged by battering waves and floating debris.
4	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.	Storm surge 13 to 18 feet above normal. Major damage to lower floors of structures near the shore due to flooding and battering by waves and floating debris. Major beach erosion.
5	>155	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.	Storm surge possibly greater than 18 feet above normal. Major damage to lower levels of all structures less than 15 feet above mean sea level

STORM SURGE AREAS

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

Wind is a major determinant in the classification of a hurricane. Any tropical storm with sustained winds of 74 mph is classified as 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 storms as the most severe). The speed and strength of the storm is important in estimating the impact of the storm that can be determined by the National Oceanic and Atmospheric Administration (NOAA) Sea, Lake, and Overland Surges from Hurricanes (SLOSH) model. 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 island most likely to be impacted by storm surge are located in the VE Flood Zone as shown on Map 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 occur more frequently than hurricanes and while their damage is less, they can cause coastal flooding, wind damage, and severe beach erosion. A number of nor'easters have impacted North Carolina in recent decades. However, it is typically southwest winds, the opposite of a nor'easter, that have the greatest impact on southern facing beaches like Holden Beach. In fact, remnants of Hurricane Michael resulted in a greater amount of sand loss than Hurricane Florence, due to Michael's prevailing southwesterly winds.

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. The Fujita-Pearson Tornado Scale rates tornadoes based on path, length, width, and intensity [Table 3.5]. 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). Beginning in 2007, the Enhanced Fujita Scale, or EF Scale, replaced the now-obsolete Fujita scale. The scale has been 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 3.5.

Tornadoic 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 3.5: Fujita-Pearson Tornado Scale

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

EF-Scale	Damage	Winds (mph)	Path Length (mi)	Mean Width (mi)
EF 0	Light	65-85	<1	<0.01
EF 1	Moderate	86-110	1-3.1	0.01 – 0.03
EF 2	Considerable	111-135	3.2 – 9.9	0.04 – 0.09
EF 3	Severe	136-165	10 – 31	0.1 – 0.31
EF 4	Devastating	166-200	32 – 99	0.32 – 0.99
EF 5	Incredible	>200	>100	>1

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 Holden 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

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 (DEQ) Division of Water Resources (DWR) assigns classifications to water bodies [See Map 3.3]. 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 Holden 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.

There are no areas within the jurisdiction of Holden Beach known to have chronic waste treatment malfunctions. This is due to the centralized sewage treatment system. The system has no chronic malfunctions and operates within its National Pollution Discharge Elimination System (NPDES) permit conditions.

The waters surrounding Holden Beach are classified as SAHQW – tidal salt waters suitable for shellfishing with excellent biological and physical/chemical characteristics. High Quality Waters. The ocean side of Holden 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

There are a number of waters in and adjacent to the Town of Holden Beach that are closed to shellfishing. These areas are illustrated graphically (shown with red hatching) on the figure below as well as on the NCDEQ Division of Marine Fisheries website. These closures are due primarily to stormwater runoff and other nonpoint sources of pollution, both from within the Town of Holden Beach and surrounding areas in the County located within the watershed.

Figure 3.1: Holden Beach Area Shellfish Closures

Source: North Carolina Division of Environmental Quality Shellfish Maps



Closed shellfish areas are areas where shellfish harvesting is prohibited by law due to unsafe levels of pollutants caused by conditions such as wastewater discharge and non-point source stormwater run-off. In waters within and around Holden Beach, shellfishing is prohibited in portions of the Intracoastal Waterway (ICWW) and canal areas. Portions of the ICWW on the western portion of the island are considered Conditionally Approved Open (no hatching). Conditionally Approved Open shellfish areas are those that remain open subject to a closure from a large rain event – typically a half inch or more of rain. See the NCDEQ Division of Marine Fisheries website to view the entire shellfish closure map.

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 near the Town of Holden Beach, but not within the Town's corporate limits. 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. There are approximately 1,705 acres of primary fish nursery areas around Holden Beach's corporate limits. These areas are in the Shallotte River, west of Holden Beach, and the Lockwood Folly River, located east of Holden Beach.

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.

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 secondary nursery areas or special secondary nursery areas located in Holden Beach.

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 Holden Beach, there are 226.2 acres of non-coastal wetlands. The largest type of non-coastal wetland is estuarine shrub/ scrub, which makes up approximately 95% of the total non-coastal wetlands. The remaining 5% of non-coastal wetlands are represented by managed pine land. The percentages and acreage of all wetlands in the corporate limits of Holden Beach can be found in Table 3.6.

A description of the types of non-coastal wetlands found in the planning jurisdiction is below can be seen on Map 3.4.

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).

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.

Table 3.6: Types of Non-Coastal Wetlands in Holden Beach

Source: NCDEQ, National Wetlands Inventory.

Types	Acres	Percent of Total
Estuarine Shrub/ Scrub	215	36.82%
Managed Pineland	11.35	1.98%
Coastal Wetlands	357.5	61.2%
Total	583.85	100%

WATER SUPPLY AND WELLHEAD PROTECTION AREAS

There are no surface water supply waters or watersheds in the vicinity of Holden Beach. Drinking water is provided by Brunswick County. 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 Holden Beach is located within or adjacent to fragile areas. Many of these areas have previously been discussed. This section describes natural heritage areas and the areas containing endangered species.

NATURAL HERITAGE AREAS

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

There are no significant natural heritage areas identified within the corporate limits of Holden Beach. However, there are two identified natural heritage areas near Holden Beach; Shallotte Creek Sandhills located approximately 1.5 miles NW of the corporate limits and Secession Maritime Forest located approximately 0.17 miles NE of the corporate limits. [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 of Holden Beach include the dry sand areas of the oceanfront beach, dunes, and the marshes

along the estuarine shoreline. Endangered animals identified on Holden Beach include various types of birds including the piping plover, a variety of sea turtles, and other transitory wildlife. In order to help preserve endangered wildlife, turtle nesting areas are marked each year in order to protect the nests. 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.

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.

WATER QUALITY AND NATURAL ENVIRONMENT

Goal 3.1: Maintain, protect and where possible enhance the natural environment and water quality in all coastal wetlands, rivers, streams, and estuaries.

Objective 3.1: Protect the Natural Environment of Holden 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 Holden Beach.

Policy 3.1.A: Areas of Environmental Concern. The Town will support and enforce through its CAMA Minor Permitting capacity, the State policies and permitted uses in AECs. Acceptable uses within the individual AECs of the estuarine system shall be those requiring water access or those that cannot function elsewhere. Such uses shall be consistent with the general use standards for coastal wetlands, estuarine waters, and public trust areas stated in 15NCAC subchapter 7H.

Policy 3.1.B: Appropriate Land Use in Areas of Environmental Concern: The Town will conserve and manage estuarine waters, coastal wetlands, public trust areas, and shorelines, as an interrelated group of AECs, so as to safeguard and perpetuate their biological, social, economic, and aesthetic values and to ensure that development occurring within the AECs is compatible with natural characteristics so as to minimize the likelihood of significant loss of private property and public resources.

Policy 3.1.C: Coastal Wetlands: Acceptable land uses in Coastal Wetlands may include utility easements, fishing piers, and docks. Examples of uses not permitted include restaurants, businesses, residences, apartments, motels, hotels, parking lots, private roads, and highways.

Policy 3.1.D: Estuarine Shorelines: Residential, recreational, research, educational, and commercial land uses are all appropriate types of use along the estuarine shoreline provided all standards of 15NCAC Subchapter 7H relevant to estuarine shoreline AECs are met, and the proposed use is consistent with the Town's Zoning Regulations.

Policy 3.1.E: Low Impact Development (LID). The Town supports Low Impact Development practices implemented in the Lockwood Folly watershed and other similar coastal watersheds. Such LID practices may include retaining/infiltrating most of the runoff on-site, maximizing the use of permeable pavements, reducing the amount of impervious coverage, and clustering housing to allow a profitable development density while maximizing open space.

Policy 3.1.F: Marsh Damage from Bulkhead Installation: Damage to existing marshes by bulkhead installation shall be minimized where possible. Maintenance and repair of existing bulkheads is required.

Policy 3.1.G: Development of Sound and Estuarine System Islands: The Town only supports development of sound and estuarine system islands that is consistent with the Town's Zoning Ordinance and Subdivision Regulations.

Policy 3.1.H: Sewage Treatment: The Town will continue to partner with Brunswick County Utilities for tertiary wastewater treatment within its incorporated area as a means to preserve water quality.

Policy 3.1.I: Surface Water Quality and Watershed Restoration: Where practicable, the Town shall encourage protection and enhancement of surface water quality through implementation of Watershed Restoration Plans.

Recommended Action 3.1.I.1: Develop a Watershed Management Plan and/or Stormwater Management Master Plan with a principle focus on reduction of stormwater runoff volumes. Partnership with regional local governments or agencies may be required.

Recommended Action 3.1.I.2: Pursue grant funds to assist in developing a Watershed Restoration Plan. 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 Governments 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 3.1.I.3: 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 3.1.J: Stormwater Management: The Town will continue to implement its stormwater management ordinance to ensure that all new commercial and residential development treats stormwater onsite using appropriate Best Management Practices (BMPs).

Policy 3.1.K: Reduction of Existing Stormwater Discharges: The Town shall utilize structural and non-structural BMPs designed to reduce the quantity and increase the quality of existing stormwater discharges.

Recommended Action 3.1.K.1: When state roads are repaired or resurfaced, where practicable, work with the Department of Transportation (DOT) to use infiltration systems and other structural or nonstructural BMPs necessary to treat stormwater generated from road surfaces. When Town roads are repaired or resurfaced, the Town should consider seeking state funding to assist with its efforts to treat stormwater generated by road surfaces using infiltration devices and other structural and nonstructural BMPs.

Recommended Action 3.1.K.2: Continue efforts to educate homeowners about actions they can take to reduce stormwater runoff from their property.

Policy 3.1.L: Stormwater Discharges from Municipal Sources: Where practicable, the Town shall eliminate stormwater discharges resulting from municipal activities. Where elimination is not possible, the Town shall mitigate the sources of stormwater discharges to the maximum extent practicable.

Recommended Action 3.1.L.1: The Town shall make the appropriate efforts to identify and eliminate stormwater discharges resulting from the Town's municipal activities.

Policy 3.1.M: Personal Watercraft and Public Trust Resources: The Town supports the responsible use of jet skis and other watercraft within the Public Trust Areas of Holden Beach to protect the marshes and other shallow water estuaries where damage to the resource is likely.

Policy 3.1.N: Commercial and Recreational Fisheries: The Town supports federal and state projects which increase the productivity of coastal and estuarine waters. Projects such as dredging to increase flushing along tidal waters, oyster reseeded programs, and properly constructed artificial reefs will be supported.

Policy 3.1.O: Shellfishing Waters: The Town supports and promotes the activities of the State's Shellfish Management Program. The Town promotes estuarine water quality through its soil erosion and sedimentation provisions and by supporting the CAMA major permitting regulations.

Policy 3.1.P: Restrictions on Menhaden Fishing: The Town supports the efforts of many coastal communities to restrict Menhaden fishing activities to an area outside one nautical mile of the Holden Beach coastline and to ban gill net fishing throughout the year.

Policy 3.1.Q: Aquaculture: The Town does not support aquaculture activities that restrict maritime navigation or inhibit scenic vistas.

Policy 3.1.R: Support for NC Division of Marine Fisheries: The Town supports the NC Division of Marine Fisheries' efforts to develop regulations and policies that help protect ocean and estuarine water quality.

Policy 3.1.S: Prime Wildlife Habitats: The Town will continue to protect its prime wildlife habitats by enforcing the CAMA major and minor permitting program.

Policy 3.1.T: Turtle Nesting Areas: The Town supports the protection of habitat areas used for turtle nesting.

Policy 3.1.U: Protection of Wetlands of Highest Functional Significance: It is Town policy to protect freshwater wetlands, marshes, and 404 wetlands within its planning jurisdiction in accordance with applicable laws and regulations.

Policy 3.1.V: Living Shorelines: The Town supports the development of living shorelines to protect areas vulnerable to erosion.

Policy 3.1.W: Local Clean-up Efforts: The Town supports local beach cleanup programs and all similar efforts to enhance the cleanliness of the natural environment.

Policy 3.1.X: Solid Waste Disposal and Recycling: The Town supports measures to recycle and reduce the amount of solid waste generated by residents, visitors, and businesses.

Recommended Action 3.1.X.1: Consider implementation of an island-wide recycling program similar to solid-waste pickup.

Recommended Action 3.1.X.2: Consider the installation of recycling bins at public beach locations.

NATURAL HAZARD AREAS

Goal 3.2: Conserve and maintain barrier dunes, beaches, flood plains, coastal wetlands, and other coastal features for their natural storm protection functions and their natural resources giving recognition to public health, safety, and welfare issues.

Objective 3.2: 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 (2016)*.

Policy 3.2.A: Development in Hazardous Areas: The Town shall use a variety of methods, including CAMA setback requirements, the Flood Damage Prevention Ordinance, and all ordinances related to land use development to discourage the development of property that can be reasonably foreseen as potentially in the area of high risk. This policy shall consider the rights of private property owners.

Policy 3.2.B: Ocean Hazard Areas: The Town supports State policies for ocean hazard areas as set forth in Chapter 15NCAC subchapter 7H of the State CAMA regulations. Suitable land uses in ocean hazard areas include ocean shoreline erosion control activities, dune establishment and stabilization. Residential, commercial, and recreational land uses and parking lots for beach access are also acceptable uses in ocean hazard areas provided they meet all general and specific standards of 15NCAC subchapter 7H.

Policy 3.2.C: Flooding and Storm Surge: As a participant in the National Flood Insurance Program, the Town supports hazard mitigation and participates in the regular phase of the insurance program. The Town also supports continued enforcement of the CAMA and 404 wetlands development permit processes in areas potentially susceptible to flooding.

Policy 3.2.D: Flood Prone Areas: All uses allowed in the Town's Zoning Ordinance shall be permissible in the 100-year flood zones, provided that all new construction and substantial improvements comply strictly to the Town's Flood Damage Prevention Ordinance and all ordinances related to land development which have been adopted in conjunction with Holden Beach's participation in the National Flood Insurance Program.

Policy 3.2.E: Flood Insurance: The Town shall take actions necessary to reduce the cost of flood insurance to property owners by maintaining or improving the Community Rating System Status (CRS).

Policy 3.2.F: Wave Action and Shoreline Erosion: The Town supports the CAMA development permit process for estuarine shoreline areas and the requisite development standards which may encourage both shoreline stabilization and facilitation of proper drainage.

Policy 3.2.G: Erosion Control on Ocean Shorelines: The Town shall continually evaluate existing and new methodology for shoreline stabilization, with focus on technologies that increase resiliency with minimal risk of upstream or downstream negative impacts. The Town is not in favor of hardened structures on the Town of Holden Beach ocean shoreline.

Policy 3.2.H: Land Acquisition: The Town supports the acquisition of property that is unsuitable for development due to coastal hazards when such acquisition may serve a useful public purpose such as access to the beach or sound. The Town also supports acquisition, where practicable, of property that is suitable for development. Acquisition of appropriate properties is also encouraged by federal and state agencies.

Policy 3.2.I: Funding for Land Acquisition and Coastal Amenities: The Town shall investigate outside funding sources for land acquisition, public access, and coastal amenities and shall encourage gifts and donations for tax credits as a mitigation measure for future storm events.

Policy 3.2.J: Relocation of Structures: The Town supports the relocation of structures that may be moved off property subject to erosion and relocated elsewhere so long as that movement meets the requirements of Town Ordinances and building codes.

Recommended Action 3.2.J.1: Consider taking inventory of properties at risk from erosion to determine the scope of the issue in Holden Beach.

Policy 3.2.K: High Winds: The Town supports enforcement of the NC State Building Code. The Town will continue to enforce the State Building Code on wind resistant construction with design standards of 130 mph wind loads.

Policy 3.2.L: Minimize Potential Fire Damage: The Town shall continue to support efforts to reduce the risk of damage from urban fires as a result of future development.

Recommended Action 3.2.L.1: Work with the Planning and Zoning Board to explore options to reduce fire damage through practices such as fire friendly landscaping, coordination with rental agencies, and other methods implemented throughout other North Carolina beach communities.

Policy 3.2.M: Coastal Storm Damage Reduction: The Town of Holden Beach supports coastal storm damage reduction programs. Such activities must be done in an environmentally sensitive fashion and with respect to impacts on surrounding properties.

Recommended Action 3.2.M.1: Continue to advocate for financial support for coastal storm damage reduction activities with federal, state and county officials.

Recommended Action 3.2.M.2: Develop a strategy for sustainable, long-term sources of funding for ongoing coastal storm damage reduction in the event that federal or state funding for coastal storm damage reduction projects is reduced.

Policy 3.2.N: Beach Management Plan: The Town supports the continued long-term planning for coastal storm damage reduction, renourishment, and maintenance of inlets.

Recommended Action 3.2.N.1: Continue to prepare annual Beach Monitoring Plans to ensure storm damage reduction and renourishment projects are appropriately tracked and analyzed as to their effectiveness.

Recommended Action 3.2.N.2: Work with the Inlet and Beach Protection Board to prepare an update to the Town's long-range Beach Management Plan.

Policy 3.2.O: Dredging: The Town seeks to control dredging so it does not directly or indirectly increase beach or waterway erosion on the island. In all dredging cases, spoil resulting should be located on the island so as to mitigate the effects of past erosion or to prevent additional erosion.

Policy 3.2.P: Lockwood Folly Inlet: The Town strongly supports the long-term commitment made by the U.S. Army Corps of Engineers to ensure the Lockwood Folly Inlet and Intracoastal Waterway remain navigable and the Town strongly supports the U.S. Army Corps of Engineers' least cost policy of dredged sand placement, with beneficial placement of dredged spoils on Holden Beach.

Policy 3.2.Q: Spoil Sites for Coastal Storm Damage Reduction: The Town shall continue to provide direct assistance to the US Army Corps of Engineers by helping obtain or provide spoil sites for coastal storm damage reduction projects.

Policy 3.2.R: Bulldozing: The practice of bulldozing on the beach shall be discouraged in accordance with CAMA 7H guidelines.

Policy 3.2.S: Hurricane Preparedness Plan: The Town shall update its Hurricane Preparedness Plan on an annual basis each spring in concert with county and state emergency management officials, and with input from Town residents. The plan shall encompass pre-storm and immediate post storm activities and policies of the Town. Issues addressed in the Hurricane Preparedness Plan should include:

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

Policy 3.2.T: Evacuation Shelters: In conjunction with the Brunswick County Emergency Management Department, the Town shall advocate that all evacuation shelters are well-publicized, accessible, and meet national standards for public safety and supplies.

Policy 3.2.U: Public Education: The Town supports education efforts to ensure that the public is aware of the risks of different types of natural hazards to reduce their personal exposure to natural hazards.

Recommended Action 3.2.U.1: Continue to implement a public education program designed to help inform the public about their exposure to natural hazards and actions they can take to mitigate potential damage to public health, safety, and property from natural disasters. This includes, but is not limited to:

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

Policy 3.2.V: Post-Storm Recovery: In the period following a hurricane, severe weather event, or other disaster, the Town will work as quickly as possible to restore essential services related to public health, safety and welfare.

Recommended Action 3.2.V.1: Following each major storm or event requiring evacuation or storms impacting the island rated Category 2 or higher, the Town shall complete and publish an After Action Report. This document shall include public input, areas for improvement, and lessons learned.

Policy 3.2.W: Redevelopment of Developed Areas: It is the policy of the Town to allow redevelopment of previously developed areas consistent with CAMA regulations and provisions of the Flood Damage Prevention Ordinance.

Policy 3.2.X: Mutual Aid: The Town shall maintain established mutual aid agreements and where necessary develop new agreements to assist with post-storm event clean-up, damage assessment, and reconstruction activities.

Policy 3.2.Y: Staging Schedule for Reconstruction and Repair: The Town will work to restore essential services related to public health, safety, and welfare first. The staging schedule for the re-establishment of essential services and the reconstruction and repair of properties damaged in a storm event depends on the severity of the storm and the damage inflicted. Properties suffering minor damage will be issued permits as expeditiously as possible. Properties suffering major damage will generally be allowed to implement temporary protective measures designed to protect their property from further damage or to correct public safety problems.

Policy 3.2.Z: Building Permits: The Town shall issue building permits as expeditiously as possible to property owners who have received damage after storm events.

Policy 3.2.AA: Public Infrastructure Repair and Replacement: The Town shall maintain assessments of current infrastructure usage and need for expansion, repair, or replacement. Following major storm events, the Town will work with all applicable agencies to assess damage to public infrastructure at the earliest possible time. Damage that affects public health and safety will be corrected as soon as practicable. Damage to existing infrastructure will also be evaluated for potential opportunities for repair or expansion consistent with existing capital improvement and repair needs. Long term repair or replacement of infrastructure will be prioritized based on resources available, impact on the integrity of the infrastructure, mitigation of future hazard situations, the Town's capital improvement program.

Policy 3.2.BB: Post-Storm Hazard Mitigation: Develop specific and timely recommendations for implementing hazard mitigation measures contained in the *Southeastern NC Regional Hazard Mitigation Plan (2016)* following a state or federally declared natural disaster.

Recommended Action 3.2.BB.1: In the event that the President declares Holden Beach a disaster area, the Planning Department shall apply for funding from the Hazard Mitigation Grant Program (HMGP) for priority projects.

Town of Holden Beach



2019 Land Use Plan

Map 3.1 Areas of Environmental Concern (AECs)

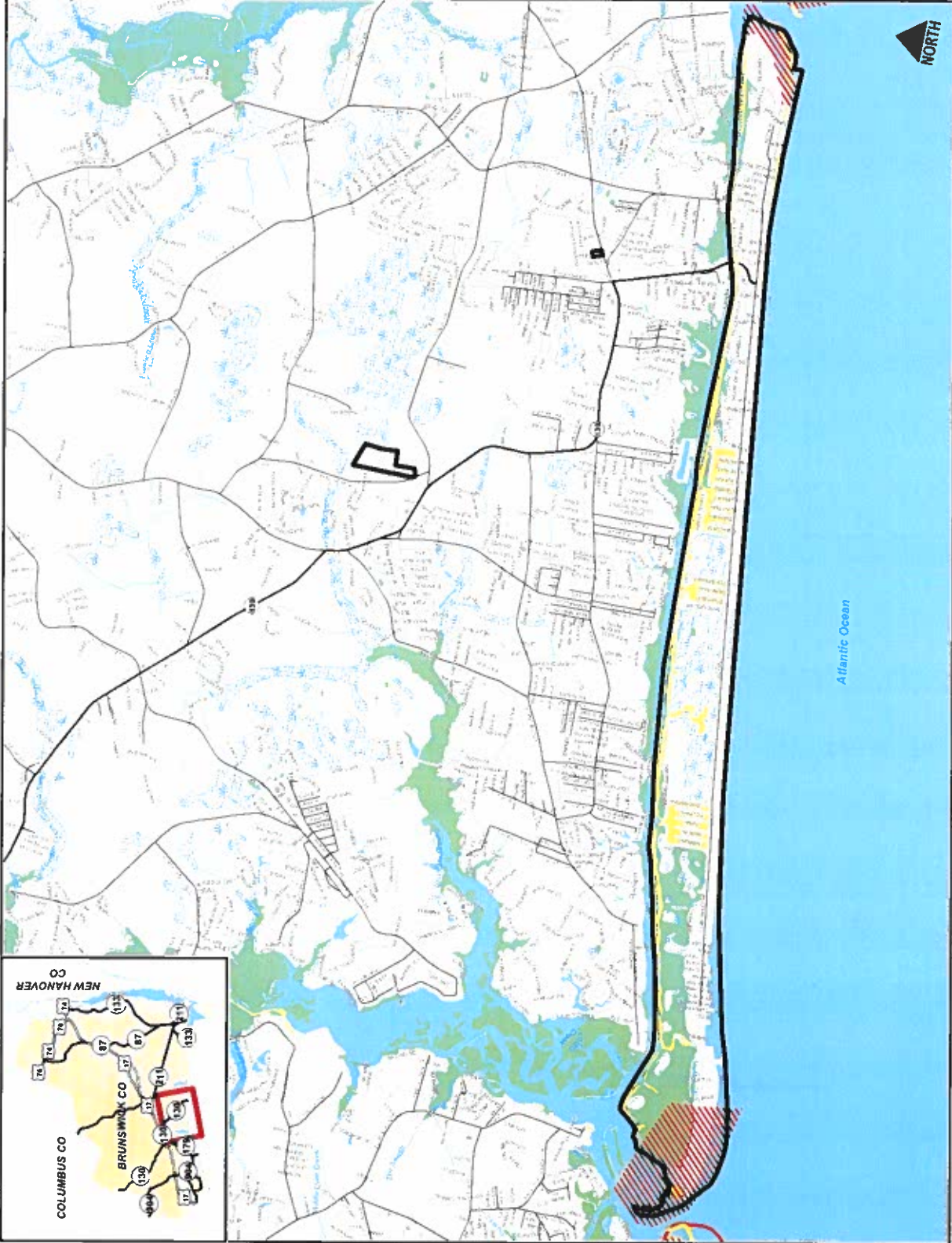
Legend

- Waterbody
- Swamp/Marsh
- Corporate Limits
- Inlet Hazard Area
- Coastal Wetlands
- 75' Estuarine Shoreline AEC

Map is to be used for general purposes only. Spatial data used to generate this map was gathered from disparate sources and represent a condition at a fixed period in time. 100% accuracy of spatial data to current circumstances cannot be guaranteed. The Cape Fear Council of Governments is not legally responsible for the misuse of this map.



Map prepared by Cape Fear Council of Governments. Data sources: Brunswick Co., NCDEC, NCDOT, USGS.



**Town of
Holden Beach**



2019 Land Use Plan
Map 3.2 Special Flood
Hazard Areas (SFHA)

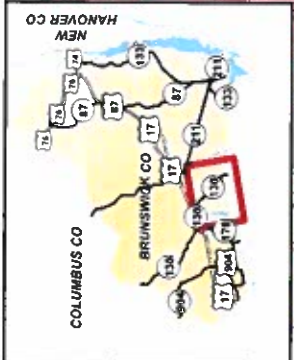
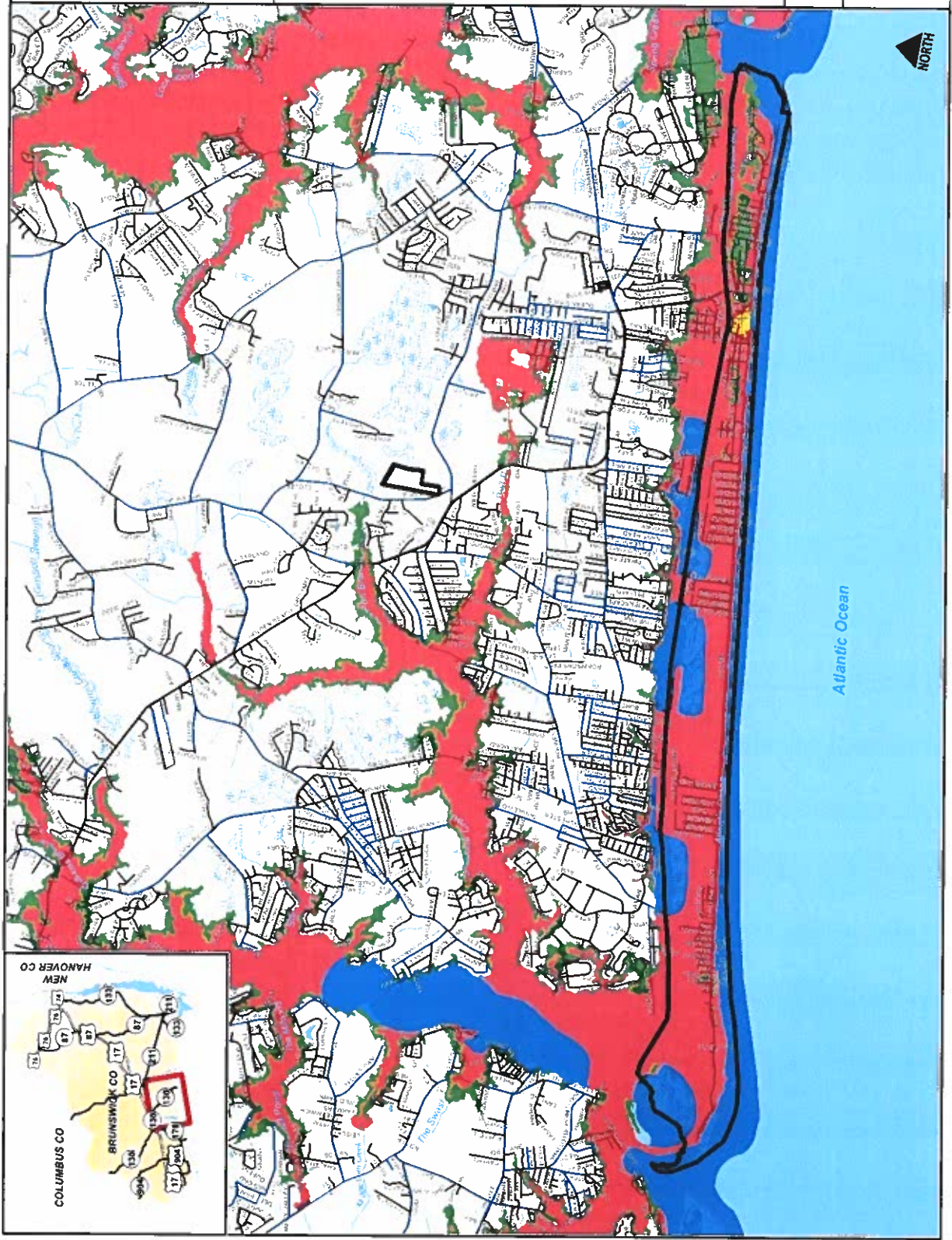
Legend

- Waterbody
- Swamp/Marsh
- Corporate Limits
- 2018 Flood Hazard Areas
- 0.2% Annual Chance
- AE
- AO
- VE

Map is to be used for general purposes only. Spatial data used to generate this map was gathered from disparate sources and represent a condition at a fixed period in time. 100% accuracy of spatial data to current circumstances cannot be guaranteed. The Cape Fear Council of Governments is not legally responsible for the misuse of this map.



Map prepared by Cape Fear Council of Governments. Data sources: Brunswick Co., NC Floodmaps, NCDEQ, NCDOT, USGS.



**Town of
Holden Beach**



**2019 Land Use Plan
Map 3.3 Surface Water
Classifications**

Legend

-  Waterbody
-  Swamp/Marsh
-  Corporate Limits

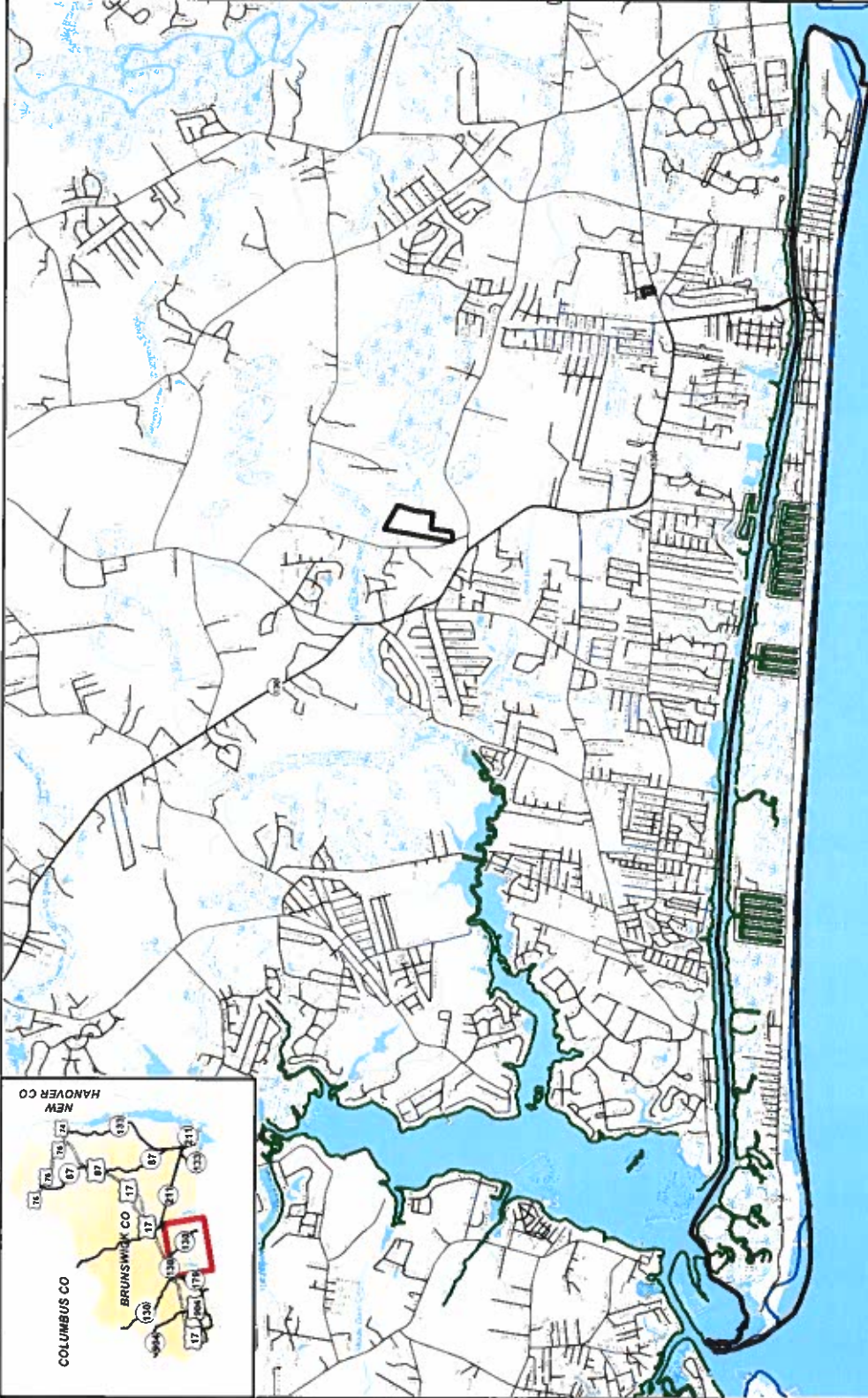
Surface Water Classifications

-  SA-HQW
-  SB

Map is to be used for general purposes only. Spatial data used to generate this map was gathered from disparate sources and represent a condition at a fixed period in time. 100% accuracy of spatial data to current circumstances cannot be guaranteed. The Cape Fear Council of Governments is not legally responsible for the misuse of this map



Map prepared by Cape Fear Council of Governments. Data sources: Brunswick Co., NC Floodmaps, NCDEQ, NCDOT, USGS.



Atlantic Ocean



SA: HQW = Market Shellfishing and High Quality Water
SB = Primary Saltwater Recreation










**Town of
Holden Beach**



2019 Land Use Plan

Map 3.4 Wetlands

Legend

-  Waterbody
-  Swamp/Marsh
-  Corporate Limits
-  Coastal Wetlands
-  Freshwater Marsh
-  Salt/Brackish Marsh
-  Non-Coastal Wetlands
-  Estuarine Shrub/Scrub
-  Managed Pineland

Map is to be used for general purposes only. Spatial data used to generate this map was gathered from disparate sources and represent a condition at a fixed period in time. 100% accuracy of spatial data to current circumstances cannot be guaranteed. The Cape Fear Council of Governments is not legally responsible for the misuse of this map.

0 0.3 0.6 1.2 Miles

Map prepared by Cape Fear Council of Governments. Data sources: Brunswick Co., NC Floodmaps, NCDEQ, NCDOT, USGS.



Atlantic Ocean






A detailed description of each wetland type can be found in Chapter 3 of the text.

Town of Holden Beach



2019 Land Use Plan Map 3.5 Primary Nursery Areas & Significant Natural Heritage Areas

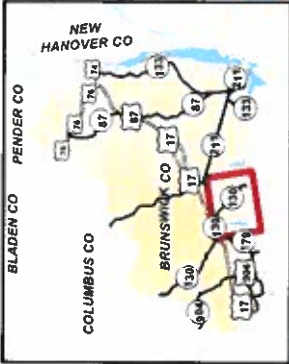
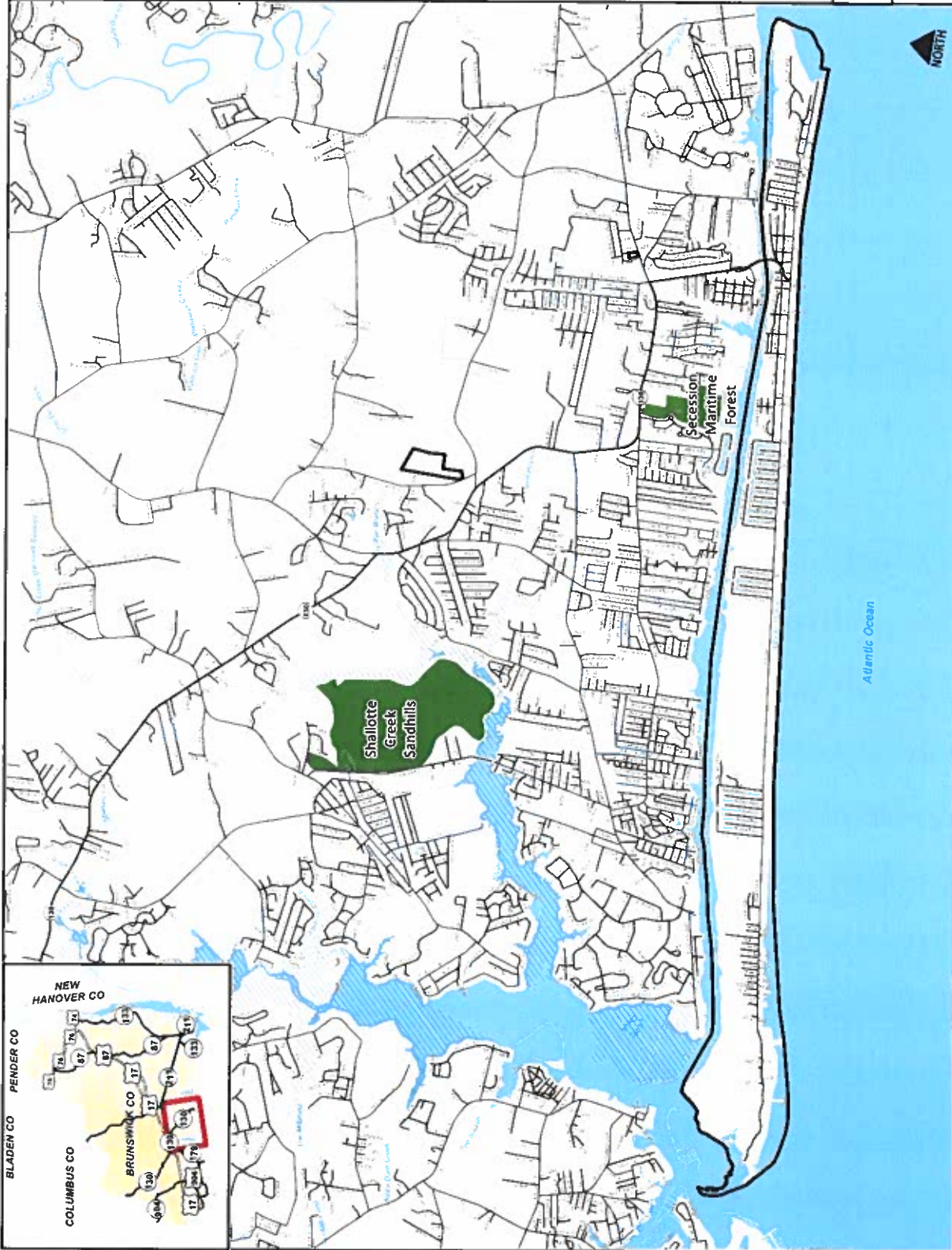
Legend

-  Corporate Limits
-  Primary Nursery Areas
-  Natural Heritage Areas

Map is to be used for general purposes only. Spatial data used to generate this map was gathered from disparate sources and represent a condition at a fixed period in time. 100% accuracy of spatial data to current circumstances cannot be guaranteed. The Cape Fear Council of Governments is not legally responsible for the misuse of this map.



Map prepared by Cape Fear Council of Governments. Data sources: Brunswick Co., NC Floodmaps, NCDOT, USGS.



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

WATER SUPPLY SYSTEM

In Holden Beach, the water supply system currently has 3,050 residential connections, including irrigation connections. According to the 2017 Holden Beach Local Water Supply Plan, the finished storage capacity of the Town's water system is 300,000 gallons. In total, there are approximately 20 miles of water lines serving the Town, ranging in diameter from two to twelve inches. The Town replaced approximately 30 feet of these distribution lines in 2017.

The Town purchases water from the Brunswick County Utility Department, where the primary water source is the Cape Fear River (Lower Cape Fear Water and Sewer Authority). The Town's water is treated at the Northwest Water Treatment Plant (Northwest WTP). Water supplied to the Northwest WTP is purchased from the Lower Cape Fear Water and Sewer Authority, which pumps surface water from the King's Bluff Reservoir, located up river from Lock and Dam No. 1 on the Cape Fear River. Water is distributed to the Town by two mains paralleling the bridge and Seagull Drive.

In response to concerns regarding water quality from the Cape Fear River, Brunswick County is proceeding with the installation of a full scale Reverse Osmosis (RO) Plant to remove poly-fluoroalkyl substances (PFAS) such as GENX.

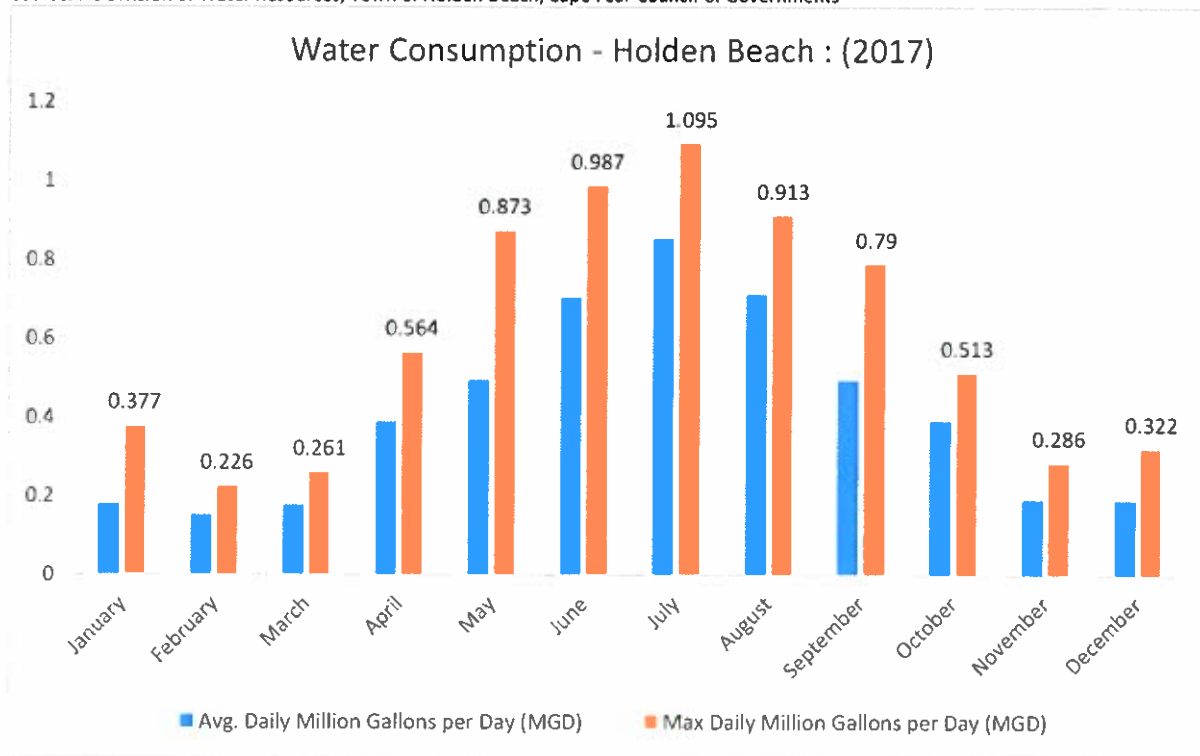
WATER DEMAND STATUS AND TRENDS

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. Water demand "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" (FEMA: October 2009. U.S. Fire Administration Water Supply Systems and Evaluation Methods, Volume 1, Chapter 5).

According to the 2017 Local Water Supply Plan, February accounted for the lowest max water demand at 0.226 Million Gallons Daily (MGD) and July, the greatest, at 1.095 MGD. Figure 4.1 displays water consumption figures for 2017. The demand for potable water is the highest in July and the lowest in February, which coincides with seasonal visitation and irrigation patterns. For planning purposes, the Town must also account for peak day usage. In 2017, the peak day usage occurred in July, with a total flow of 1.095 MGD – approximately 110% of total capacity. Additionally, the average daily usage for 2017 was 0.41 MGD with the average max daily usage 0.60 MGD.

Figure 4.1: Water Consumption – Holden Beach (2017)

Source: NC Division of Water Resources, Town of Holden Beach, Cape Fear Council of Governments



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. 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).

According to the 2017 Local Water Supply Plan, Holden Beach has the capacity to meet the anticipated demand through the year 2050 for all its existing and future customers – including visitors. However, water demand is expected to exceed the available supply by 2060. This calculation includes estimated population projections for seasonal and permanent residents, but is based only on the annual average daily usage. The Water Supply Plan anticipates that by the year 2060, future water demand will account for 101% of the available one million gallons per day (MGD). 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.

As provided in Chapter 2 of this plan, there is an estimated peak overnight population of 16,811. This figure can be used to determine the peak demand for gallons per capita per day. In July 2017, the peak day demand equates to 65.14 gallons per capita per day (max daily usage / seasonal population = gallons per capita per day). Assuming that gallons per capita per day remains unchanged (65.14), a seasonal population of 25,000 will result in a peak day demand of 1.69 MGD, which will exceed the 1.0 MGD capacity. According to current Brunswick County supply plans, there is sufficient capacity that may be purchased to meet growing demand. It should be noted that significant growth is predicted for Brunswick County over the next decade, which will lead to increases in both residential and commercial properties.

WASTEWATER SYSTEM STATUS AND TRENDS

WASTEWATER SYSTEM

Holden Beach's wastewater is treated by Brunswick County's West Brunswick Wastewater Treatment Plant (WWTP). The Town has an agreement with Brunswick County Utilities for the facility to treat 1 MGD. The facility has a current overall capacity of 6 MGD. Connection to the public sewer system is required for all residents and businesses within the Town and the system has a total of 2,412 connections within Holden Beach.

In July of 2017, the Town's average daily wastewater flow (0.48 MGD) was 48% of the total available capacity. Table 4.2 shows the amount of wastewater discharged per month and average discharge per day for Holden Beach in 2017. In 2018, the date of the peak day daily flow for the West Brunswick WWTP was May 29th (Memorial Day Weekend), which saw approximately 5.8 MGD. This facility's permitted capacity is 6.0 MGD. This indicates that expansion of facility capacity may be needed as Brunswick County continues to grow.

Table 4.1: West Brunswick Wastewater Treatment Plant Serving Holden Beach

Source: NC Division of Water Resources and Brunswick County Utility Department

Facility	Capacity	Annual Average Daily Flow (2018)	Maximum Daily Flow (2018)
West Brunswick WWTP	6.00 MGD*	3.1 MGD	5.76 MGD (5/29/2018)

Table 4.2: Holden Beach Wastewater Discharge (2017)

Source: NC Division of Water Resources, Town of Holden Beach

Month	Discharge/Month (MGD)	Average Daily Discharge (MGD)	Percent of Total Capacity
January	2.015	0.065	3.25%
February	1.68	0.06	3.00%
March	2.542	0.082	4.10%
April	4.83	0.161	8.05%
May	6.665	0.215	10.75%
June	9.81	0.327	16.35%
July	14.725	0.475	23.75%
August	11.067	0.357	17.85%

September	9.63	0.321	16.05%
October	5.084	0.164	8.20%
November	4.86	0.162	8.10%
December	1.736	0.056	2.80%
Average Usage Statistics	6.22	0.204	10.20%

Currently there are plans for expansion of the West Brunswick WWTP to allocate an additional 750,000 gallons daily for the City of Southport. The Town of Holden Beach is in the process of up-fitting its lift stations. This project includes elevating the lift stations to reduce flood hazard vulnerability.

TREATED WASTEWATER AS A RESOURCE

The West Brunswick Regional WWTP is a non-discharge plant. Historically, once treated wastewater leaves a wastewater treatment plant it is discharged into a stream or river. Brunswick County's older WWTPs do operate this way, but all newer WWTPs have been permitted as non-discharge facilities. Rather than discharging treated wastewater to a stream or river, a non-discharge WWTP uses the highly treated wastewater for large-scale irrigation. The highly treated wastewater is termed "Reuse Water." Brunswick County operates over 25 miles of reuse force mains that supply reuse water for irrigation to eleven golf courses and 1,040 acres of dedicated tree farms and turf farms at four different locations. Using reuse water for irrigation has several advantages. One major advantage is that reuse water replaces potable water from the County's water system that would have been used for irrigation. This reduces the peak loading on the water system. Additionally, using reuse water for irrigation allows golf courses to reduce the amount of fertilizer spread on the golf course.

STORMWATER SYSTEM

The Town's stormwater management ordinance became effective in 1998. The stormwater ordinance was adopted to administer and enforce stormwater quantity and quality, and to address issues related to building and other development, such as placement of fill materials on the island. The purpose of the local ordinance is to provide greater protection than offered through state regulations and to retain stormwater on individual lots to ensure residential development does not adversely impact adjacent properties.

Two types of stormwater systems exist within the Town of Holden Beach: systems owned and operated by the NC Department of Transportation (DOT) and private systems. New development within the Town is required to install a stormwater system by using swales or catch basins that flow into a subsurface system.

Several stormwater projects have been completed to date. The Marker 55 Subdivision has seen improvements from Brunswick Avenue East along Marker Fifty Five to High Point Street. These improvements provide cumulative drainage from the east and northeast to the Intracoastal Waterway. The Point West Subdivision has also had improvements to the stormwater system on Point West Drive, Tide Ridge Drive, and Coquina Cove Drive. In addition, there have been repairs to the storm water system made along the street encompassing right-of-way between 145 and 160 Scotch Bonnet Drive.

Future stormwater projects may include improvements to the areas of Tarpon Drive, Marlin Drive, Tuna Drive, Dolphin Drive, Lion's Paw, Scotch Bonnet Drive, Greensboro Street, Charlotte Street, Durham Street, Burlington Street, Sanford Street, Fayetteville Street, Lumberton Street, High Point Street, and Carolina Avenue. Additional stormwater projects will address the main corridor on the island and improve 126-315 Ocean Boulevard East, 159-223 Ocean Boulevard West, 337-301 Ocean Boulevard West, and 699-752 Ocean Boulevard West. See Map 4.1 for completed and future stormwater projects.

TRANSPORTATION SYSTEMS

The Holden Beach Bridge across the ICWW is the only means of ingress and egress to the Town of Holden Beach from the mainland. Accordingly, traffic on the bridge during summer months is common as is traffic congestion at major intersections on and adjacent to the island. The Holden Beach Bridge and Roadway design capacity are discussed in the following sections.

HOLDEN BEACH BRIDGE

The Holden Beach Bridge is operated and maintained by the North Carolina Department of Transportation (NCDOT). Based upon information provided by the NCDOT Bridge Maintenance Unit, the Holden Beach Bridge was constructed of pre-stressed concrete in 1985. The Holden Beach Bridge was designed for seven percent of traffic to be trucks and for a maximum of 40-mph speeds. In the first year of operation (1985), the annual average daily traffic (AADT) was 2,000 vehicles. The design year set at 2005 had an estimated AADT of 3,300 vehicles. The 2017 AADT measured less than a mile north of the Holden Beach Bridge (at PTC Station 900031) was 7,700 – greatly exceeding the design capacity. However, several businesses and residences are situated between the point of measurement and the bridge which suggests that the traffic volume over the bridge itself may be different. Although the design year AADT is set 20 years from the construction date, the design life for the bridge project is typically 50 years or more.

Figure 4.2 Holden Beach Bridge

Source: Cape Fear Council of Governments



In January of 2018, NCDOT performed bridge maintenance to repair concrete erosion. The DOT Bridge Maintenance Unit inspects the bridge every two years; the most recent inspection was conducted in

February of 2018. Currently, there are plans to install railing along the bridge for safety measures related to bicycle and pedestrian use. Following the railing installation, planned maintenance will take place. During periods of severe weather with sustained winds of 45-mph or greater, the bridge is closed to traffic, and entry or exit to the island is prohibited.

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 Holden 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.

On Holden Beach, the highest AADT counts are found on Ocean Blvd. West, which the NCDOT reports has an AADT of 4,100. The next highest counts are found on Ocean Blvd. East which has an AADT of 2,500. See Map 4.2 for more information.

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

2040 LONG RANGE TRANSPORTATION PLAN

In 2012, Holden Beach became a member of the Grand Strand Area Transportation Study (GSATS). The 2010 Census reported continued growth for the area and, for the first time, the Myrtle Beach UZA (renamed the Myrtle Beach-Socastee SC/NC Urbanized Area) extended into the southern portions of Brunswick County. As a result, in 2012, Holden Beach became a member of GSATS. NCDOT, South Carolina Department of Transportation (SCDOT), Brunswick County, and the Towns of Calabash, Carolina Shores, Ocean Isle Beach, Shallotte, Sunset Beach and Varnamtown have all entered into a memorandum of understanding with GSATS to create a bi-state Metropolitan Planning Organization (MPO). GSATS is responsible for the development of the area's Long Range Transportation Plan (LRTP) and the identification and ranking of projects for funding through an adopted Transportation Improvement Program (TIP). The North Carolina portion of the GSATS Study Area extends from the South Carolina state line northward to the Lockwood Folly River and from the Atlantic Ocean westward to just beyond US 17 to include the Town of Shallotte.

The development of the GSATS LRTP coincides with and complements NCDOT’s prioritization process. The Strategic Transportation Investments (STI) law created a process to determine how NCDOT, in partnership with local governments, will fund and prioritize transportation projects in the state of North Carolina. Under STI, all modes compete for the same funding. This means that roadway projects compete with ferry projects which will compete with public transportation projects, bicycle/pedestrian, aviation, and rail.

The Strategic Prioritization Office of Transportation (SPOT) develops quantitative scores for all projects. Only the highest scoring projects are selected to be included in the NCDOT Statewide Transportation Improvement Plan (STIP). The STIP, which identifies the transportation projects that will receive funding during a 10-year period, is a state and federal requirement. Federal law requires it to be updated at least every four years. NCDOT, however, updates it every two years. Currently, Holden Beach does not have any projects included in the 2018-2027 STIP. However, one project related to the Town is recommended in the GSATS 2040 Long Range Transportation Plan. This project is described in Table 4.3.

Table 4.3: Holden Beach GSATS 2040 Long Range Transportation Plan Project Recommendation

Source: GSATS Long Range Transportation Plan 2040

Roadway	Description	Improvement	Cost Estimate
Holden Beach Rd.	Widen NC 130 to a multi-lane facility from Sabbath Home Intersection to the foot of the Holden Beach Bridge with sidewalks	Widen to 4-Lane with sidewalks	\$6.58 Million (2017)

NON-MOTORIZED TRANSPORTATION

Non-motorized transportation is increasingly important nationwide and particularly for tourist destinations such as Holden Beach. Non-motorized transportation refers to alternative travel choices such as cycling or walking. While non-motorized transportation is often considered a leisure travel mode, it can also be utilized to travel from point A to B for utilitarian purposes. In the past, residents have expressed interest in expanding options for cycling and pedestrian travel in the Town.

Currently, the Town has nearly six miles of pedestrian infrastructure in the form of sidewalks. These sidewalks extend the majority of the island on Ocean Boulevard East and Ocean Boulevard West. The sidewalk infrastructure makes the island walkable year-round which reduces traffic related congestion.

While Holden Beach does lack physical bicycle infrastructure, different bicycle routes have been identified. The “Olden Holden Bike Tour” includes three bike routes that include 23 marked historical or significant features. These routes include the Eastern Route, Middle Route, and Western Route and extend approximately 20 miles. Each of these routes cover a different area of the island and offer a unique beauty and history. See Map 4.3 for bike and pedestrian routes.

Holden Beach hopes to increase pedestrian and bicyclist safety, foster better access to community destinations, create opportunities for active and healthy lifestyles and enhance the quality of life in Holden Beach.

FIRE AND EMS SERVICES

The Tri-Beach Volunteer Fire Department provides firefighting and other emergency services to the Town of Holden Beach. The Department has both volunteer and full-time firefighters as well as three stations, one of which is located directly on the island. Vehicles owned by the Department include an ATV, two ladder trucks, and three pumper trucks. A recent engineering report indicated that the Town meets the state's minimum fire flow requirements for water pressure.

Emergency Medical Services (EMS) are provided to the Town by Brunswick County EMS. This service is provided to the whole county, with its closest substation – Base 1 – less than 5 miles from the Holden Beach Bridge.

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. Parking for those visiting these amenities is discussed in Chapter 2 of this plan.

PARKS AND RECREATION

Bridgeview Park

Bridgeview Park, along Davis Street, is one of the more recent park additions to the Town of Holden Beach. This Park offers a variety of recreational facilities including a basketball/pickle ball court, bocce ball courts, playground, picnic area, splashpad, bathroom, shower, overnight and transient dock, and kayak launch. This site offers great views of the ICWW and the Holden Beach Bridge.

Figure 4.3 Bridgeview Park

Source: Cape Fear Council of Governments



Holden Beach Pavilion

Holden Beach Pavilion is located adjacent to the Holden Beach Bridge and is next to the boating access facility. The Pavilion was constructed in 2007 and acts as a gathering place for the Town’s festivals and summer concerts. Next to the pavilion there is a fishing and observation pier that extends to the ICWW. Restrooms are provided in an adjacent lot. Additional features of the site include a paved dancefloor, covered picnic shelters, electrical outlets, Wi-Fi, and potable water. Wheelchair access is available on the boardwalk leading to the pavilion and fishing pier.

Figure 4.4 Holden Beach Pavilion

Source: Cape Fear Council of Governments



Figure 4.5 Halstead Street Park

Source: Cape Fear Council of Governments



Halstead Street Park

Halstead Park is located east of the Holden Beach Bridge on the north end of Halstead Street. The park overlooks the ICWW and is around 0.14 acres in size. This park functions as a neighborhood park providing a picnic shelter, fishing pier, small open lawn space, as well as uncovered picnic tables near the water. There is off-street parking for four cars as well as bike racks for cyclists. This site is accessible to those with disabilities. The park does not provide water access.

Holden Beach Fitness Trail/PAR Course

In 2012, the Town of Holden Beach developed the Holden Beach Fitness Trail/PAR Course. The trail consists of nine exercise stations located along the Ocean Blvd. West sidewalk between Greensboro Street and Scotch Bonnet Drive. Each exercise station includes different exercise apparatus with instructions for their use. The fitness trail extends approximately ¼ mile between the first and last station.

Figure 4.6 Holden Beach Fitness Trail/PAR Course

Source: Cape Fear Council of Governments

**Sand Dollar Park**

Sand Dollar Park is located at the end of Sand Dollar Drive and is 5.83 acres in size. The majority of the park area is made up of coastal marsh along the ICWW that has no paved walking paths. This park provides access to the water that supports fishing, an informal kayak launch, and viewing of the marsh area. There are two picnic tables located at this site in a grassy area.

Figure 4.7 Sand Dollar Park

Source: Cape Fear Council of Governments

**Sailfish Park**

Sailfish Park is located at the end of Sailfish Street and is 9.75 acres in size. Similar to Sand Dollar Park, the park primarily functions as a scenic estuarine shoreline along the ICWW. Sailfish Park offers several amenities including a grassy area by the water with several picnic tables and a small observation/fishing deck.

Figure 4.8 Sailfish Park

Source: Cape Fear Council of Governments

**EXISTING PUBLIC ACCESS SITES**

There are 20 existing public access sites along the approximately 7 miles of oceanfront beach in the Town Limits equating to one access site every 1,848 feet. These sites are primarily located along Ocean Boulevard East and Ocean Boulevard West. The majority of the public access sites on the island are used primarily as dune crossovers. See Table 4.4 and Map 4.4 for more information.

Figure 4.9 Holden Beach CAMA Access Sign

Source: Cape Fear Council of Governments

**BOATING ACCESS FACILITIES**

There are three formally-designated public access sites on the Intracoastal Waterway side of the island. One public access site is a boat ramp located under the Holden Beach Bridge. This site is maintained by the North Carolina Wildlife Resources Commission (WRC) and features a floating dock as a component

of the boat ramp. The other public access site is a fishing and observation pier that is located adjacent to the boat ramp. This pier is a component of the Holden Beach Pavilion. Lastly, the recently developed Bridgeview Park includes a pier, transient dock, and kayak launch. The site is located at the end of Davis Street west of the Holden Beach Pavilion.

Table 4.4 CAMA Public Beach Access Locations

Source: Town of Holden Beach, NCDEQ, Holden Beach Parks and Recreation Master Plan

Location	Comment
East end of McCray Street	Parking available w/2 handicapped slots
220 Ocean Blvd East	Parking available adjacent
317 Ocean Blvd East: End of Ave D	Parking available adjacent
End of Dunescape Dr	Neighborhood access with no adjacent parking
End of Avenue B	Parking available adjacent
End of Avenue A	Parking available adjacent
End of Ferry Road	Parking available adjacent
Adjacent to 124 Ocean Blvd East	Parking available w/ public beach access
Quinton Street Handicapped (112 Ocean Blvd East)	Parking available on side street adjacent
End of Jordan Blvd	Parking, handicapped ramp, gazebo, shower
Between Jordan Blvd. and the bridge	Regional access with parking and public bath
Adjacent to 289 Ocean Blvd West	Neighborhood access with parking on Neptune Street
Adjacent to 301 Ocean Blvd West	Parking on Neptune Street.
Adjacent to 329 Ocean Blvd West	Parking on Neptune Street
Adjacent to 357 Ocean Blvd West	Parking on High Point Street
Adjacent to 389 Ocean Blvd West	Parking on Fayetteville Street
Adjacent to 567 Ocean Blvd West	Parking on Starfish Street. Handicapped parking available
Adjacent to 679 Ocean Blvd West	Neighborhood access with no adjacent parking
Adjacent to 800 Ocean Blvd West	Parking across the street on north side of road
Adjacent to 885 Ocean Blvd West	Parking on Swordfish Drive
Adjacent to 917 Ocean Blvd West	Parking on Marlin Drive
Adjacent to 1017 Ocean Blvd West	Neighborhood access with no parking
Adjacent to 1089 Ocean Blvd West	Neighborhood access with no parking

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 Town Services: Continue to provide a range of services to residents within the incorporated areas within the Town. Connection to water and sewer lines will be at the expense of the developer. If water or sewer facility upgrades or expansions are required for new development, the needed improvements would be at the expense of the developer. This may include any additional non-Town-supplied utilities.

Policy 4.1.B: Operation of Water Facilities: The Town shall ensure efficient, uninterrupted operation of water facilities for Town residents and visitors during both normal and peak demand periods.

Recommended Action 4.1.B.1: Continue to encourage homeowners to adopt practices that lead to water conservation.

Recommended Action 4.1.B.2: Monitor water consumption figures and plan for the purchase of additional supply from the County.

Policy 4.1.C: Operation of Wastewater Facilities: The Town shall ensure efficient, uninterrupted operation of wastewater facilities for Town residents.

Recommended Action 4.1.C.1: As a means to enhance water quality of the Intracoastal Waterway, encourage the County to provide additional sewage treatment to residents outside of town boundaries.

Policy 4.1.D: Potable Water Supply: The Town supports and encourages the treatment of water supply sources received by the Brunswick County Utilities Department to ensure safe drinking water is provided to residents and visitors of Holden Beach.

Policy 4.1.E: Bridge & Road Improvements: The Town supports State and Federal bridge and road improvement programs and efforts to reduce traffic congestion on the island and along the road corridors leading to the bridge.

Recommended Action 4.1.E.1: Continue to work with NCDOT and GSATS to help improve traffic conditions both on the island and in surrounding areas as a result of a growing seasonal population, and growing population on the mainland in areas near Holden Beach.

Recommended Action 4.1.E.2: Work with developers to incorporate transportation improvements into new commercial and residential development projects when applicable.

Policy 4.1.F: Seasonal Traffic Counts: Partner with the Grand Strand Area Transportation Study (GSATS) to develop seasonal traffic counts on an annual basis at one or more key locations to better estimate demand for parking and the number of day-trippers visiting the island.

Policy 4.1.G: Golf Carts: The Town supports the safe operation of street legal golf carts.

Recommended Action 4.1.G.1: Work with the Planning and Zoning Board to explore policies and regulations concerning the operation of golf carts in the Town.

Policy 4.1.H: Pedestrian and Bicycle Facilities: The Town encourages pedestrian and bicycle access along the island to help alleviate traffic problems and improve public access to the shoreline.

Recommended Action 4.1.H.1: Pursue federal and state grant opportunities to construct sidewalks, crosswalks, greenways, bike lanes, and other bicycle and pedestrian facilities at strategic locations on the island.

Recommended Action 4.1.H.2: Pursue grant funds to complete an official NCDOT Comprehensive Bicycle and/or Pedestrian Transportation Plan. Grant applications are typically due November/December of each year. A 10% local cash match is required.

Policy 4.1.I: Maintaining Adequate Emergency Response: The Town will provide support to police and volunteer fire services as needed to keep pace with the demands of the growing seasonal population.

Policy 4.1.J: Rezoning Analysis: The Town shall conduct an analysis of infrastructure before rezoning parcels to allow for more intensive development or changing development standards to allow for higher densities and intensities. This analysis shall determine if existing infrastructure can provide adequate service to the Town as a whole in light of the proposed rezonings or development standard changes. The infrastructure analysis shall review road

capacity, water and sewer capacity, fire flow capacity, public access, and other infrastructure demands related to future development.

PUBLIC ACCESS AND RECREATION

Goal 4.2: Maximize public access to the beaches and public trust waters of the Town of Holden 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 identify ways to improve existing access sites and improve handicapped access.

Policy 4.2.B: Maximize Public Access and Recreation Facilities: The Town will continue its efforts towards maintaining and improving and where practicable expanding public access to the ocean and ICWW and seek federal, state, or county funds to develop new public access and recreation facilities.

Recommended Action 4.2.B.1: Consider updating the 2012 Parks and Recreation Master Plan as necessary.

Policy 4.2.C: Signage: The Town shall improve the signage of existing public access sites located along the Intracoastal Waterway and beach.

Policy 4.2.D: Public Acquisition of Hazardous Areas: The Town should consider purchasing parcels located in hazard areas or rendered unbuildable by storms or other events, for the purpose of public water access and conservation of open space if funding, including state or federal funding, is available.

Policy 4.2.E: Public Access Parking: The Town supports public access parking.

Recommended Action 4.2.E.1: Continue monitoring the need for public parking.

Policy 4.2.F: Supporting Federal and State Programs to Expand Access: The Town is committed to county, state, and federal programs that maximize public access to the beaches and public trust waters of the Town of Holden Beach. The programs include but are not limited to the Coastal Area Management Act, the North Carolina Public Beach Access Program, Federal channel maintenance and inlet projects and beach nourishment projects.

Policy 4.2.G: Reduce User Conflicts: The Town will manage conflicting uses of its beaches and public trust waters.

Policy 4.2.H: Dune Protection: Public pedestrian access is limited to designated dune crossover areas in order to minimize damage to dunes and vegetation. Walking on dunes or acting in any manner that causes damage to dunes and vegetation is against state and local ordinances. The Town, through its CAMA minor permit program, may allow the construction of private crossovers over the dune structures for access to the beach at private access points.

Recommended Action 4.2.H.1: Consider establishing policies and regulations concerning dune walkovers.

Policy 4.2.I: Off-Road Vehicles: The Town will not allow off-road vehicles on the dunes or on the shoreline area, with the exception of public service or emergency vehicles and inherited commercial fishing right access.

Policy 4.2.J: Floating Homes: The Town will not approve floating home development within the Town's planning jurisdiction.

Policy 4.2.K: Moorings: Commercial seafood vessel dockage along the Intracoastal Waterway is deemed acceptable. All moorings in that regard must conform to CAMA and State regulations.

Policy 4.2.L: Maintenance of Navigation Channels: Holden Beach supports the proper maintenance of channels, particularly the Intracoastal Waterway due to the impact of this channel on commercial and recreational fisheries and general boating.

Policy 4.2.M: Blocking or Impairing Navigational Channels: Projects that would directly or indirectly block or impair existing navigational channels shall be prohibited. This includes but is not limited to projects that deposit spoils below mean high water, extend piers beyond the established pier head line or any projects determined to be detrimental to navigation of the public trust waters.

Policy 4.2.N: Safe Boating: The Town shall encourage public awareness of safe boating rules.

**Town of
Holden Beach**



2019 Land Use Plan

Map 4.1

Storm Water Projects

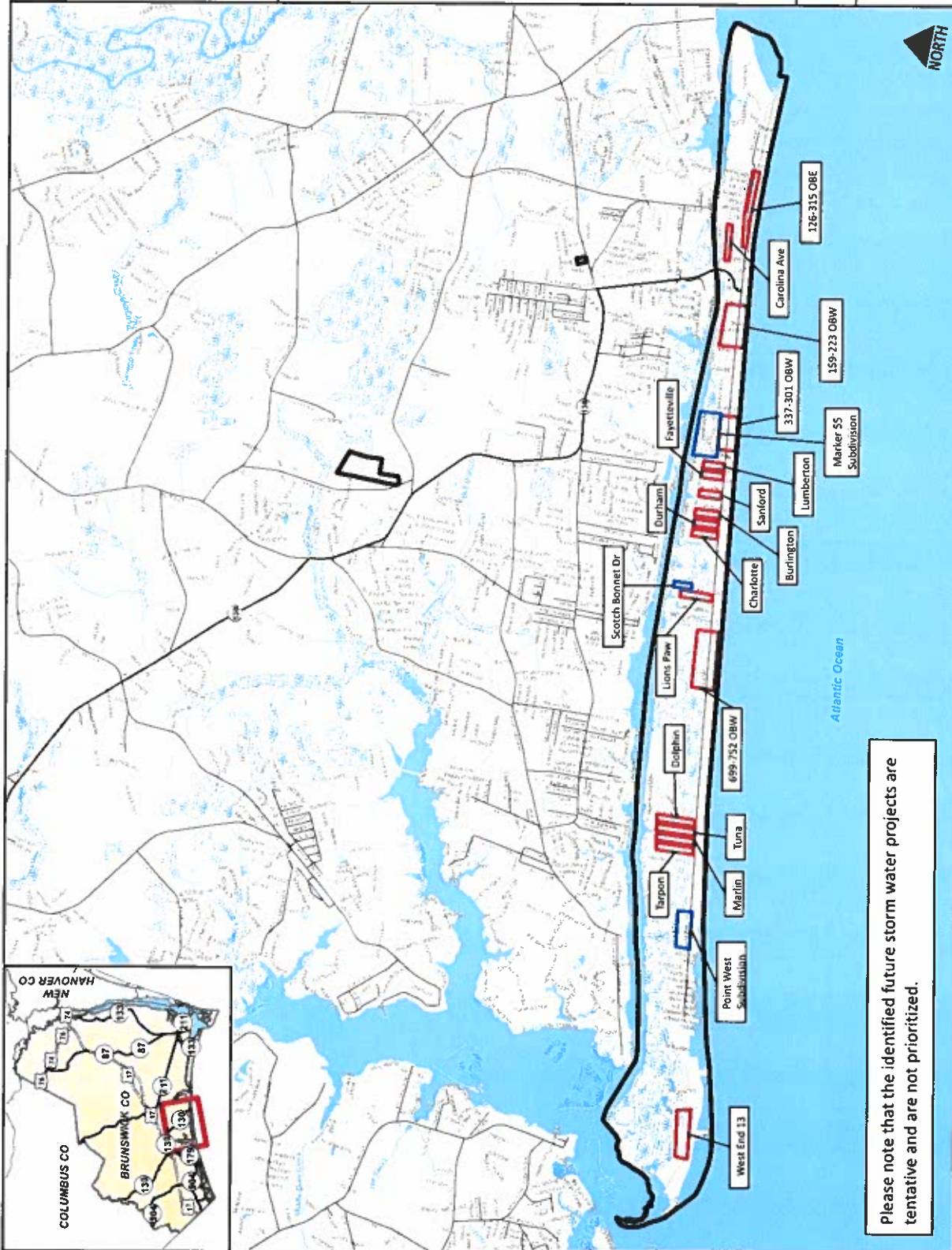
Legend

- Waterbody
- Swamp/Marsh
- Corporate Limits
- Complete Projects
- Future Projects

Map is to be used for general purposes only. Spatial data used to generate this map was gathered from disparate sources and represent a condition at a fixed period in time. 100% accuracy of spatial data to current circumstances cannot be guaranteed. The Cape Fear Council of Governments is not legally responsible for the misuse of this map.



Map prepared by Cape Fear Council of Governments. Data sources: Brunswick Co., NCDEQ, NCDOT, USGS.



Please note that the identified future storm water projects are tentative and are not prioritized.

Town of Holden Beach



2019 Land Use Plan

Map 4.2

Annual Average Daily Traffic (AADT)

Legend

Waterbody

Swamp/Marsh

Corporate Limits

2017 NCDOT Traffic Data

9 - 499

500 - 1,999

2,000 - 4,999

5,000 - 9,999

10,000 - 12,000

Map is to be used for general purposes only. Spatial data used to generate this map was gathered from disparate sources and represent a condition at a fixed period in time. 100% accuracy of spatial data to current circumstances cannot be guaranteed. The Cape Fear Council of Governments is not legally responsible for the misuse of this map.

0 0.325 0.65 1.3 Miles

Map prepared by Cape Fear Council of Governments. Data sources: Brunswick Co., NCDEQ, NCDOT, USGS.



Atlantic Ocean

Town of Holden Beach



2019 Land Use Plan

Map 4.3 Bike and Pedestrian Facilities

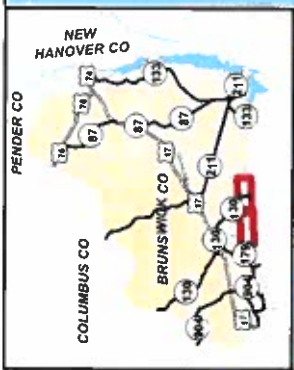
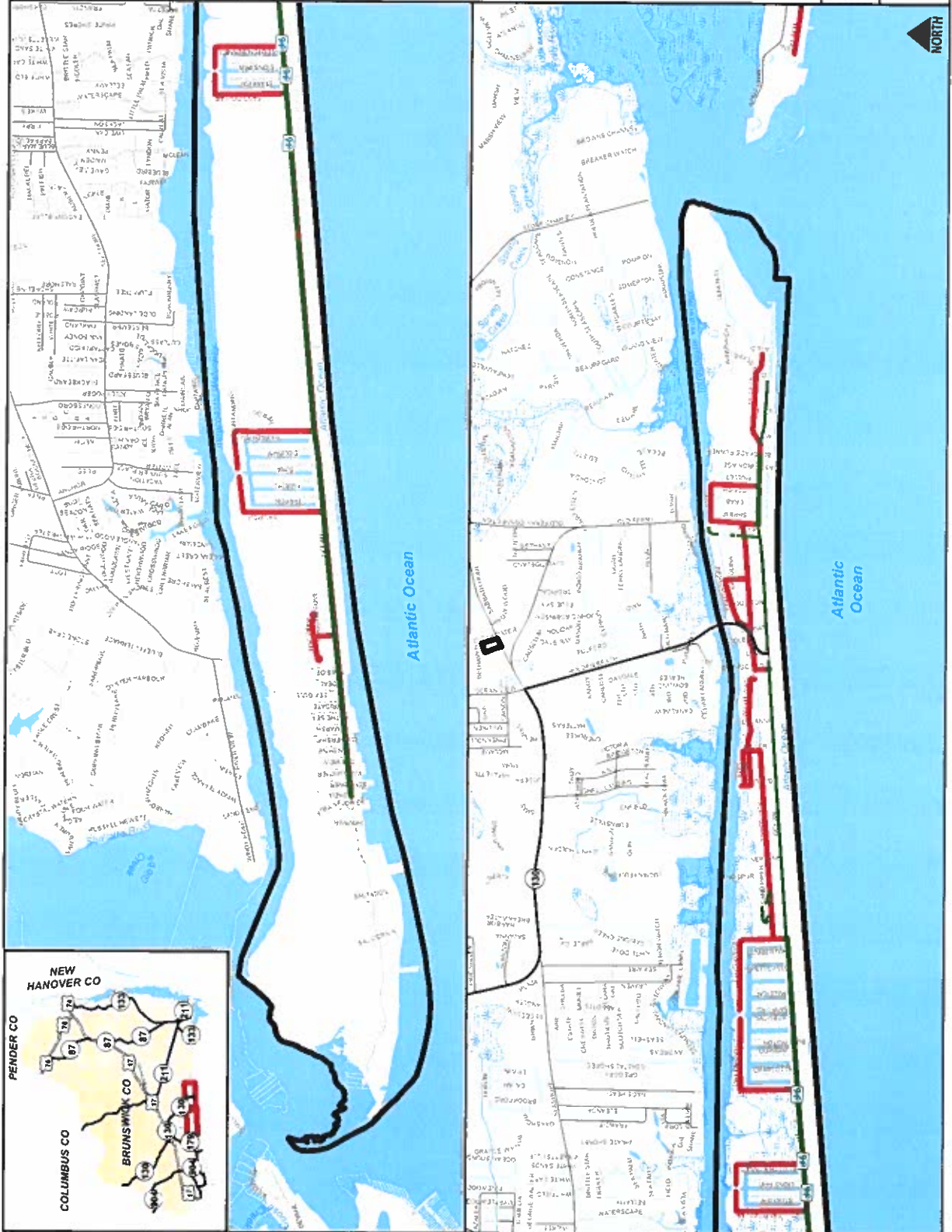
Legend

- Waterbody
- Swamp/Marsh
- Corporate Limits
- Bike Parking
- Sidewalks
- Bike Route

Map is to be used for general purposes only. Spatial data used to generate this map was gathered from disparate sources and represent a condition at a fixed period in time. 100% accuracy of spatial data to current circumstances cannot be guaranteed. The Cape Fear Council of Government is not legally responsible for the misuse of this map.

2,000 1,000 0 2,000 Feet

Map prepared by Cape Fear Council of Governments. Data sources: Brunswick Co., NCDOT, USGS.



Town of Holden Beach



2019 Land Use Plan

Map 4.4 Recreation Facilities

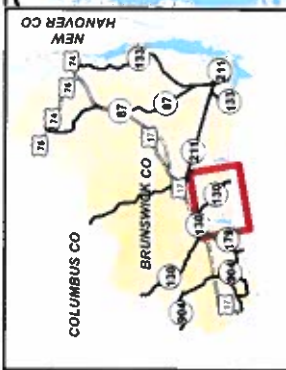
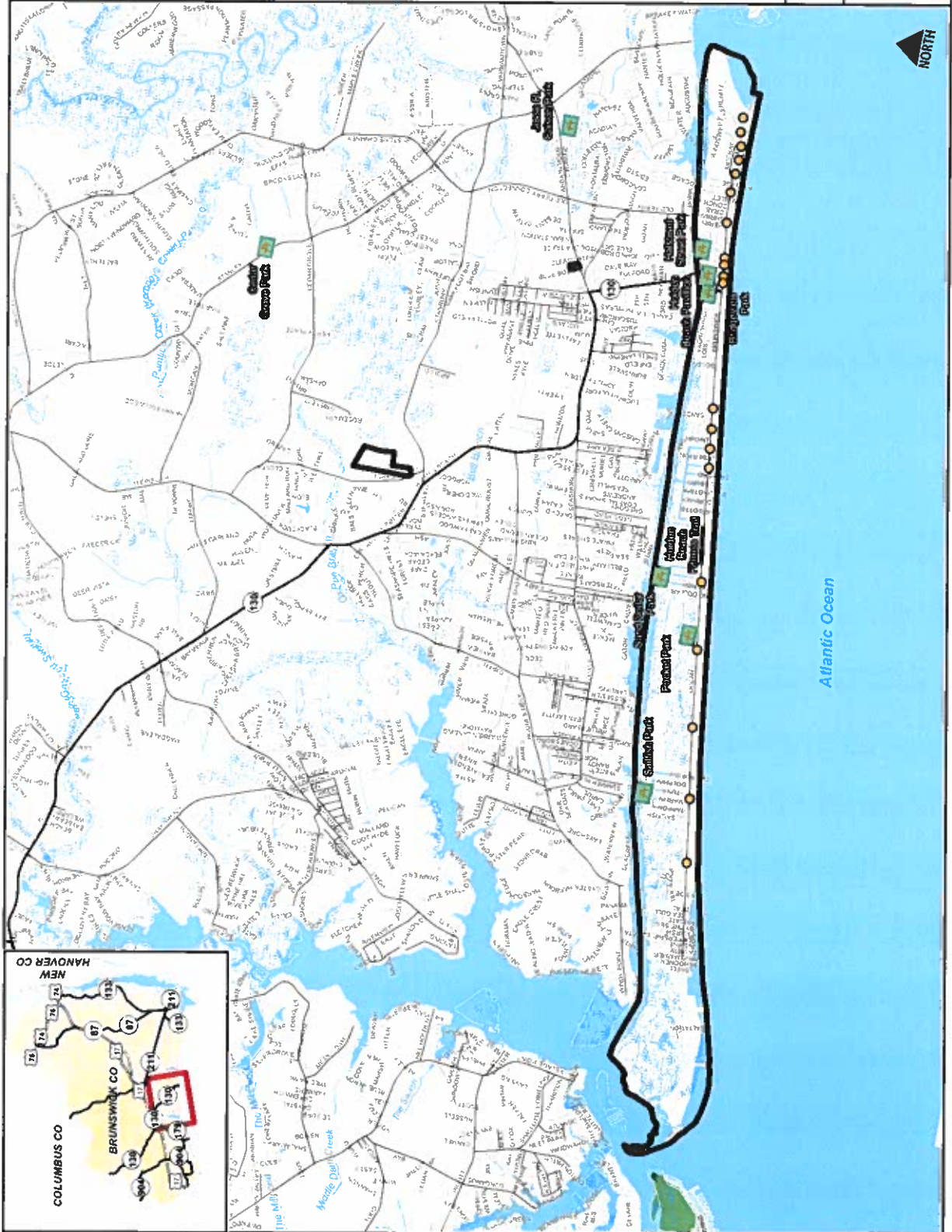
Legend

- Waterbody
- Swamp/Marsh
- Corporate Limits
- Local Parks Point
- CAMA Public Access
- Holden Beach Fitness Trail

Map is to be used for general purposes only. Spatial data used to generate this map was gathered from disparate sources and represent a condition at a fixed period in time. 100% accuracy of spatial data to current circumstances cannot be guaranteed. The Cape Fear Council of Governments is not legally responsible for the misuse of this map.



Map prepared by Cape Fear Council of Governments. Data sources: Brunswick Co., NC Floodmaps, NCDEQ, NCDOT, USGS



Chapter 5: LAND USE AND GROWTH MANAGEMENT

This chapter outlines existing development patterns in the Town of Holden Beach planning jurisdiction 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 desired growth 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 the local elected officials, appointed boards, citizens, and local planning staff with an overall ‘picture’ of the existing land use patterns in the planning jurisdiction. 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 in close proximity to 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 Brunswick County Tax Records updated in 2018 as well as full-color orthophotos (map quality aerial photos) taken in 2018. A review of the previous land use plan also provided data and support for the existing land use analysis.

LAND USES IDENTIFIED IN THE PLANNING JURISDICTION

The existing land uses in the planning jurisdiction include:

- Residential
 1. Single-Family (Two-family included)
 2. Multi-Family (3 or more dwelling units attached)
- Commercial
 1. Retail shops/stores
 2. Entertainment (including pier, etc.)
 3. Restaurants (all food service)
- Civic/Institutional (includes churches, parks, government facilities)
- Vacant (undeveloped land)
- Utilities
- Marsh/Spoil (areas where development of the parcel is unlikely due to environmental constraints)
- Unbuildable (land subject to coastal erosion)

EXISTING LAND USE IN THE PLANNING JURISDICTION

Table 5.1 re-caps the land, water, and size characteristics of the planning jurisdiction and shows that approximately 863 acres in the entire planning jurisdiction (Corporate Limits) are “above the mean high water (MHW) line”, meaning it is generally dry land and not inundated during high tide. A description of the vacant land by zoning jurisdiction is provided later in the chapter. An estimation of potential development by vacant zoning jurisdiction can provide an indication of future growth potential.

Table 5.1: Planning Jurisdiction Characteristics

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

Area	Acreage (Approximations)
"Land Above Mean High Water"	863
"Water/Marsh/Spoil"	1,374
Total Planning Jurisdiction	2,237

The Existing Land Use Table (Table 5.2) provides a breakdown of the planning jurisdiction by each particular land use category. The land use classifications are summarized by the total number of parcels and respective acreage found within Holden Beach. The existing land use categories are also classified throughout the entire planning jurisdiction.

Table 5.2: Existing Land Use

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

Land Use Type by Area	Parcel Count	Acres	Percent of Total
Civic/Institutional	14	10.77	0.48%
Commercial	29	12.67	0.57%
Common Area (Private)	2	22.06	0.99%
Water/Marsh/Spoil	104	1,374	61.42%
Multi-family Residential	66	23.98	1.07%
Single-family Residential	2,235	519.55	23.23%
Unbuildable	121	42.31	1.89%
Utilities	5	0.66	0.03%
Vacant Land	884	231	10.33%
Total	3,460	2,237.00	100.00%

According to the existing land use analysis, the largest land use category within the planning jurisdiction is the water/marsh/spoil land use type which consists of nearly 1,400 acres of undeveloped land. Single-family residential land accounts for the largest percentage of developed land within the Holden Beach planning jurisdiction. Throughout the planning jurisdiction there are approximately 884 vacant parcels consisting of more than 230 acres of land. Commercial as well as multi-family residential development is limited throughout the planning jurisdiction and accounts for less than 3% of Town's acreage.

BUILD-OUT ANALYSIS

Based on a schematic analysis of vacant land by zoning district, it is possible that within the Town's planning jurisdiction an additional 949 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 residential uses. While this analysis assumes development will be generally residential, it offers a more reasonable estimation by examining parcels that have already been subdivided as well as parcels that may or may not be suitable for subdivision. Few large tracts remain that are suitable for further subdivision. Current zoning rules permit residential uses within all of the Town's commercial zoning districts with the exception of the Conservation and Rural Special Use Districts. As such, it is feasible that much of the commercial zoning district will be developed for residential purposes. As stated previously, the vast majority of developed land has been constructed for residential purposes.

Table 5.3: Vacant Land by Zoning District

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

Zoning District	Parcels	Acres	Potential Dwelling Units
C: Conservation	46	10.54	0
R: Rural	4	0.97	4
RS: Rural Special Use	7	0.64	0
R-1: Residential District	743	167.41	865
R-2: Residential District	47	43.1	47*
C-1: Commercial District	37	7.95	37**
Total	884	230.61	949

*Additional dwelling units may be accommodated if a portion of the vacant lots were developed for duplex or multi-family purposes.

**This assumes vacant commercially zoned land will be occupied by residential development

Within Holden Beach, there is approximately 231 acres of vacant land – the majority of which is zoned primarily for single-family and duplex residential uses (R-1)(See Map 5.2). If all the vacant land were developed for single-family residential purposes, then an additional 949 residential units could be built. This would equate to an additional 7,592 persons – during the summer months – based upon an occupancy of 8 persons per unit. When added to the current peak seasonal overnight population (16,797), the total estimated peak seasonal overnight population at build-out is 24,389. This estimate does not include day visitors. Assuming there are no significant changes to density regulations over the next thirty years, and no significant increase in hotels/motels, then the peak seasonal population at build-out will likely be less than 30,000 persons.

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), the Intracoastal Waterway (ICWW) Army Corps of Engineers (COE) regulatory easement and disposal areas, and coastal wetlands in Chapter 3. These potential land use conflicts are shown on Map 5.3. 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 COE ICWW easement serves the purpose of providing perpetual access to dispose of spoil and dredged material, which may limit development. The CAMA 75' Estuarine AEC serves to limit impervious surfaces adjacent to sensitive natural areas such as coastal wetlands and marshes.

Within Holden Beach, there are limited potential land use conflicts with vacant land. Vacant lots found adjacent to coastal wetlands and within the COE ICWW easement and the estuarine shoreline are the primary conflict areas. Future development of these lots may pose environmental and federal/state regulatory constraints.

Minimal vacant lots exist within the Inlet Hazard Areas (IHA) on the East and West Ends of Holden Beach. Risks associated with inlet erosion shall fall on the property owners of such lots as required by the CAMA permitting process. It should be noted that the location of the IHA boundaries will likely change pending adoption of new IHA maps as proposed by the Coastal Resources Commission (CRC). Further discussion regarding development within Inlet Hazard Areas is found in Chapter 3.

FUTURE LAND USE

The Future Land Use Classification Map is created to provide guidance for zoning and land use decisions. In Holden Beach, the Future Land Use Classification Map (Map 5.4) 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 growth 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's planning jurisdiction, it is the Town's Official Zoning Map and Zoning Ordinance that codifies the actual development regulations within the planning jurisdiction.

FUTURE LAND USE CLASSIFICATION GUIDELINES

This section defines the future land use classification guidelines for Holden 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 Board of 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 Zoning Ordinance. 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 Holden 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.

COMMERCIAL

The Commercial future land use category is intended to support permanent and seasonal populations inhabiting Holden Beach. Restaurants, cafes, food markets, and retail establishments that are compatible with the residential and family-friendly atmosphere in Holden Beach are supported. Adequate buffering should be applied where development within this land use category abuts single-family or duplex residential uses.

Example Desired Uses:

Commercial

- Commercial/Retail
- Office & Institutional/Government
- Mixed Use
- Multi-family Residential and Two-family Residential Dwellings
- Water-based Commercial and Recreation

Example Undesired Uses:

- Industrial, manufacturing, and big-box retail
- Automobile-oriented uses such as gas stations or establishments with drive-through operations
- New construction of beach resorts and hotels/motels

Implementation Considerations:

- Discouragement of commercial encroachment on existing residential neighborhoods
- Consideration of Mixed Use and/or Upper Story Residential uses
- Inclusion of bicycle and pedestrian facilities

MULTI-FAMILY RESIDENTIAL

Where existing multi-family residential development currently exists, the land has been classified as Multi-family Residential on the future land use map. The Town should continue to allow multi-family residential development in locations it currently exists. However, based on strong public input concerns, expansion of multi-family development should be curtailed in favor of single-family or duplex residential development. Buffering and landscape material should be utilized when multi-family residential development abuts single-family residential uses.

Example Desired Uses:

- Single-family Residential uses
- Multi-family Residential uses
- Duplex Residential uses

Multi-family Residential

Example Undesired Uses:

- Commercial development, including hotels and motels

Implementation Considerations:

- Buffering and landscape material when Multi-family Residential uses abut lower density residential uses
- Provisions for open space
- Inclusion of bicycle and pedestrian facilities

RESIDENTIAL

Within Holden Beach, the predominant land use pattern consists of single-family or duplex residential development. The intent of this future land use category is to protect, maintain, and encourage the continued development of single-family and duplex residential dwellings for seasonal or permanent use. Infill single-family and duplex residential development and replacement of aging structures will occur within the Residential land use category. Encroachment of multi-family residential or commercial development shall be discouraged in the Residential future land use category.

Example Desired Uses:

- Single-family Residential uses
- Two-family Residential uses

Residential

Example Undesired Uses:

- Non-residential development
- Multi-family Residential uses
- Commercial-Oriented Rental Homes

Implementation Considerations:

- Preservation of existing Single-family and Duplex Residential neighborhoods
- Encouragement of quality construction to mitigate potential storm damage

CONSERVATION

The Conservation category is intended to preserve and protect fragile estuarine environments from incompatible uses and to encourage public open space/recreational opportunities. Coastal wetlands and saltwater marsh areas are included within this future land use category. 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.

Desired Uses:

- Preserved open space
- Nature trails
- Parks, piers, and docks
- Public access points
- Passive recreation areas
- Active recreation areas in suitable locations

Conservation

Example Undesired Uses:

- Commercial or residential development

Implementation Considerations:

- Protection of fragile estuarine environments
- Preservation of coastal wetlands for recreation, natural habitat, fishing, boating, and storm/flood mitigation

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 Holden Beach by encouraging single-family and duplex residential development, compatible business establishments, preserved natural resource areas, and parks/recreation facilities.

Policy 5.1.A: New Development: All new development and redevelopment will adhere to the Town's building and development regulations and to the density requirements set forth in the Zoning and Subdivision Ordinance.

Policy 5.1.B: Height Limits: The Town shall limit building height to 31 feet from the Design Flood Elevation where located within a Special Flood Hazard Area (SFHA) and 35 feet within the X Zone.

Policy 5.1.C: Aesthetics: The Town will work with developers to ensure that development is done in a manner that is consistent with existing aesthetic and architectural characteristics. In addition, the Town supports the use of native plant material which contributes to the coastal aesthetic of the island.

Recommended Action 5.1.C.1: Consider pursuing grant funds to create an Urban/Maritime Forestry Management Plan.

Policy 5.1.D: Commercial Development: The Town does not support expanding the limits of the Commercial Zoning. Restaurants, cafes, food markets, and retail establishments that are compatible with the residential and family-friendly atmosphere in Holden Beach are supported within the Commercial Zoning District. Intense commercial development, beyond that necessary to serve tourists and residents, is not encouraged. Hotels, motels, and beach resorts are discouraged on the island.

Policy 5.1.E: Beach Clubhouse: Beach clubhouse facilities shall only be permitted within the Town's Commercial Zoning District.

Policy 5.1.F: 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.F.1: Consider submitting an application for the Town of Holden 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.G: Mixed Use: The Town supports the concept of appropriately sized proposals for mixed use development in the Commercial Zoning District in order to revitalize these areas and preserve the economic viability of existing commercial property. The height of mixed use projects is limited to 35 feet.

Recommended Action 5.1.G.1: Review the Zoning Ordinance for proposed amendments needed to accommodate mixed use development projects in the Commercial Zoning District.

Policy 5.1.H: Single-family and Duplex Residential Development: The Town shall maintain areas exclusively for conventional single-family and duplex residential development. The Town shall retain the predominantly single-family residential character of the island. Conversion of single-family and duplex homes to multi-family residential uses shall be discouraged.

Policy 5.1.I: Incompatible Residential Development: The Town does not support the development commercial-oriented rental homes that deviate from the family-friendly residential character of the Town.

Recommended Action 5.1.I.1: Consider updating the Town's Zoning Ordinance as necessary to address any incompatible single-family residential development that disrupts existing neighborhood character.

Policy 5.1.J: Development Impacts on Conservation Zones: New development and redevelopment within the Conservation Zoning District shall not be permitted which would act to degrade the quality of natural and scenic resources at Holden Beach.

Recommended Action 5.1.J.1: Work with other public and nongovernmental organizations to preserve existing green space and acquire or otherwise protect conservation areas, and other sensitive natural areas to ensure their long-term protection.

Recommended Action 5.1.J.2: Work with willing land owners and encourage them to gift lands to the Town that can be used for public access, recreation, or conservation purposes.

Policy 5.1.K: Development of Sound and Estuarine Areas: Estuarine islands and spoil islands are subject to the zoning and subdivision regulations as provided in the Town's Zoning and Subdivision Ordinance.

Policy 5.1.L: Industrial Impacts: The Town shall prohibit any form of industry other than those associated with tourism.

Policy 5.1.M: Marinas: The Town supports the development of water-based marinas within or where adjacent to Commercial Zoning Districts and in accordance with CAMA regulations.

Recommended Action 5.1.M.1: Consider updating the Town's Zoning Ordinance with marina land use and development regulations.

Policy 5.1.N: Dry Stack Storage: The Town discourages dry stack storage of boats on the Island.

Policy 5.1.O: Tourism: The Town supports and promotes tourism as an essential economic activity having direct positive impact of future development.

Policy 5.1.P: Future Development on the Mainland: The Town supports efforts by the County and other local jurisdictions to manage the density and appearance of development along the Intracoastal Waterway (ICWW) and Causeway in order to protect water quality, maintain natural resources, and promote an inviting and attractive commercial corridor.

Recommended Action 5.1.P.1: Explore options to influence the land use and development on the mainland along the ICWW and Causeway.

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

Recommended Action 5.1.Q.1: Continue to utilize standing committees and boards to involve the public in planning decisions whenever practicable.

Recommended Action 5.1.Q.2: Continue to utilize the Town's website and other methods to keep citizens informed of planning and land use decisions whenever practicable.

Policy 5.1.R: Commitment to State and Federal Programs: The Town supports state and federal programs such as CAMA, beach nourishment, erosion control, public access, highway improvements, dredging (channel maintenance and beach nourishment), and other similar programs provided the Town finds these programs to be appropriate and consistent with Town Policies.

Policy 5.1.S: Land Use Plan Implementation Status Report: The Town shall 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 Board of Commissioners by the Planning and Zoning Board Chairman. The Town shall prepare an implementation status report for the Division of Coastal Management every two years.

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

Town of Holden Beach



2019 Land Use Plan

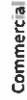
Map 5.1 Existing Land Use

Legend



Corporate Limits

Land Uses



Commercial



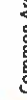
Civic/Institutional



Utilities



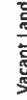
Residential



Common Area (Private)



Marsh/Spoil



Vacant Land

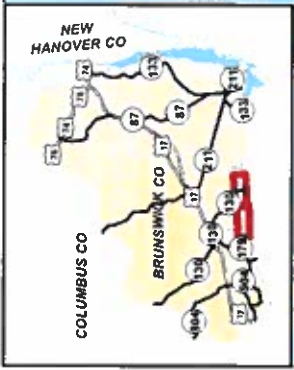
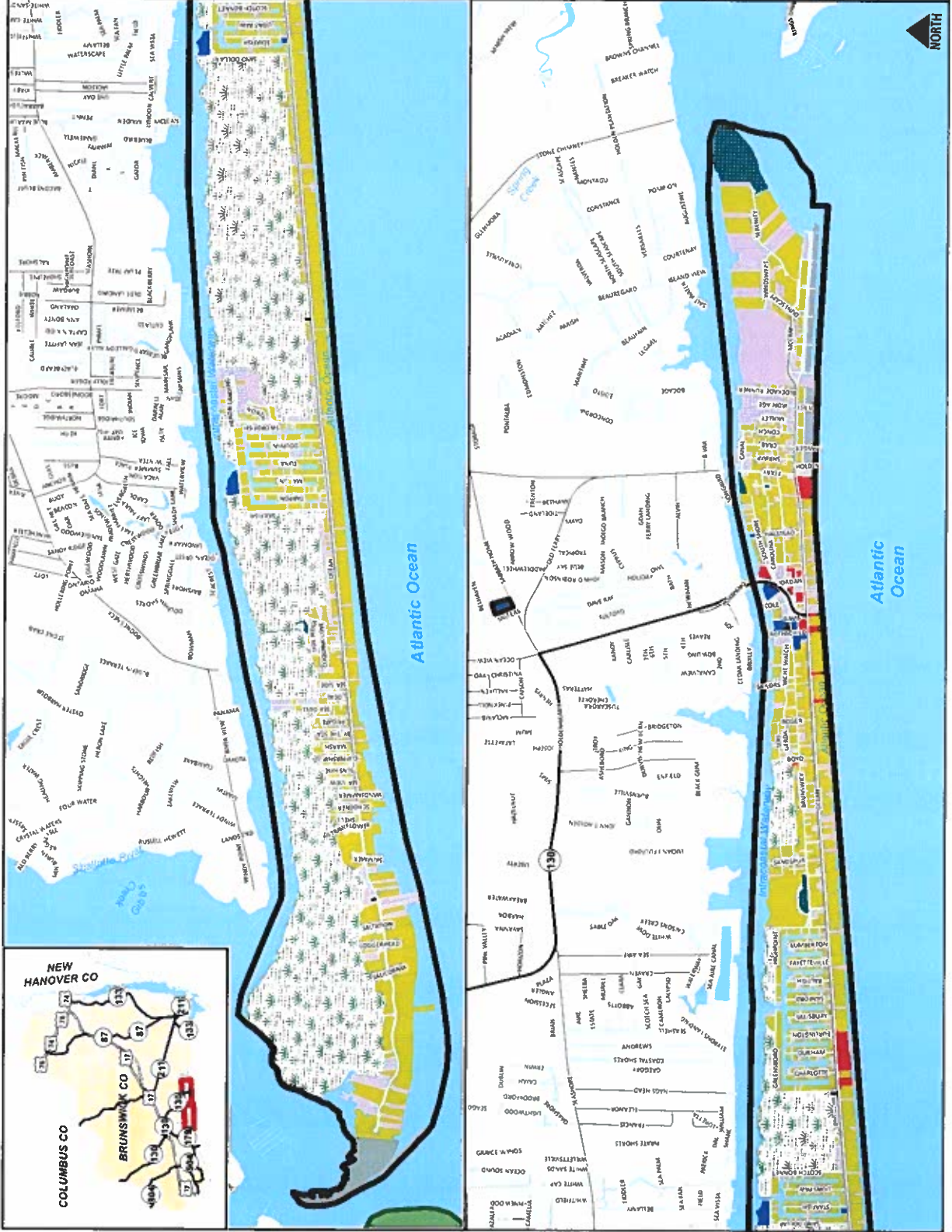


Unbuildable

Map is to be used for general purposes only. Spatial data used to generate this map was gathered from disparate sources and represent a condition at a fixed period in time. 100% accuracy of spatial data to current circumstances cannot be guaranteed. The Cape Fear Council of Governments is not legally responsible for the misuse of this map.

1,800 900 0 1,800 Feet

Map prepared by Cape Fear Council of Governments. Data sources: Brunswick Co., NCDOT, USGS.



Town of Holden Beach



2019 Land Use Plan

Map 5.2
Vacant Land by Zoning District

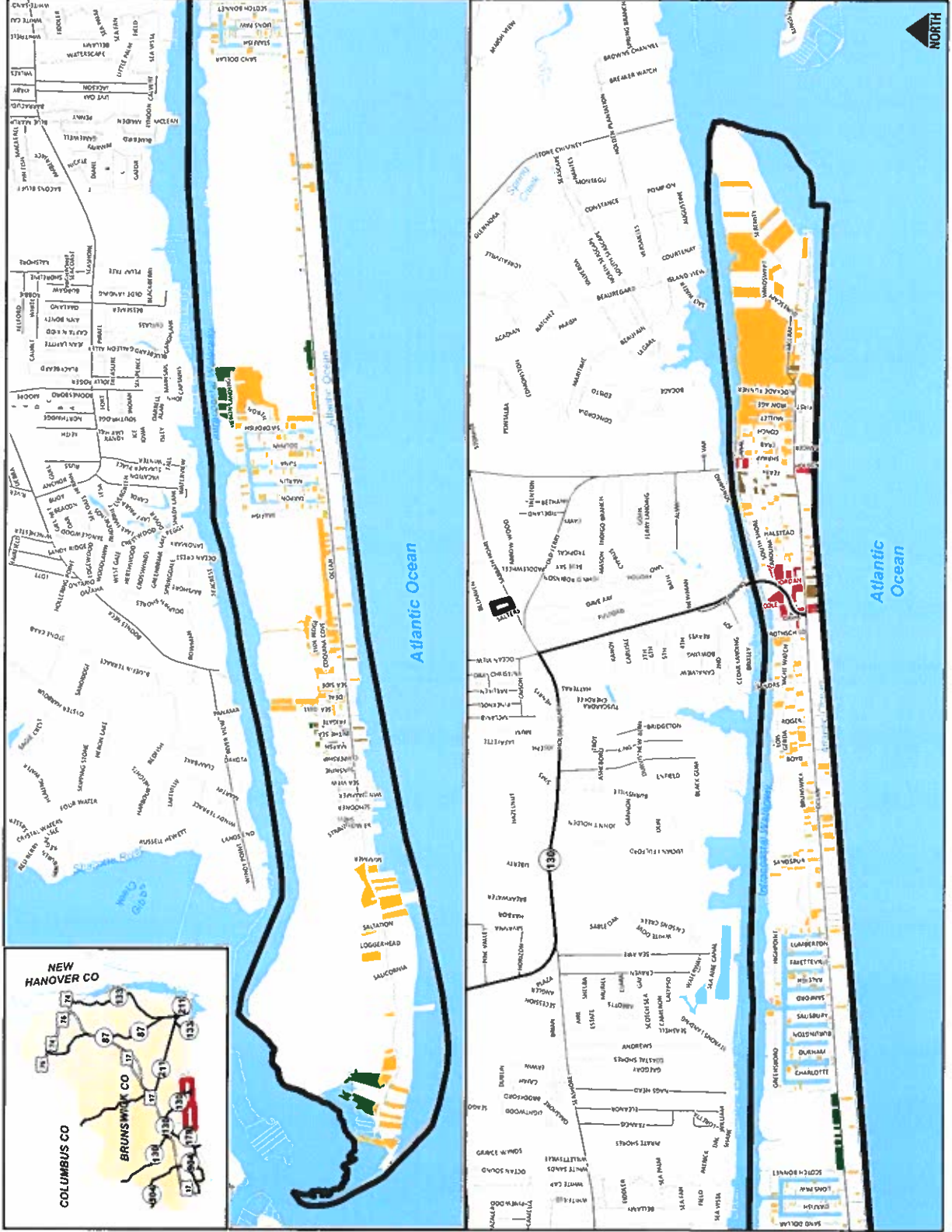
Legend

- Corporate Limits
- Vacant Zoning
- C: Conservation
- C-1: Commercial
- R: Rural
- R-1: Residential (One and Two Family)
- R-2: Residential (Multi-family)
- RS: Rural Special Use

Map is to be used for general purposes only. Spatial data used to generate this map was gathered from disparate sources and represent a condition at a fixed period in time. 100% accuracy of spatial data to current circumstances cannot be guaranteed. The Cape Fear Council of Governments is not legally responsible for the misuse of this map.



Map prepared by Cape Fear Council of Governments. Data sources: Brunswick Co., NCDEQ, NCDOT, USGS.



Town of Holden Beach



2019 Land Use Plan

Map 5.3 Potential Land Use Conflicts

Legend

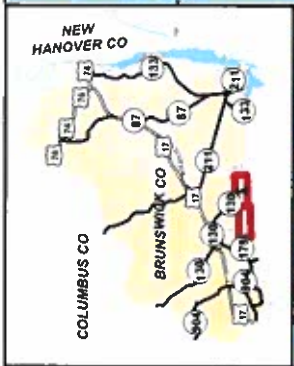
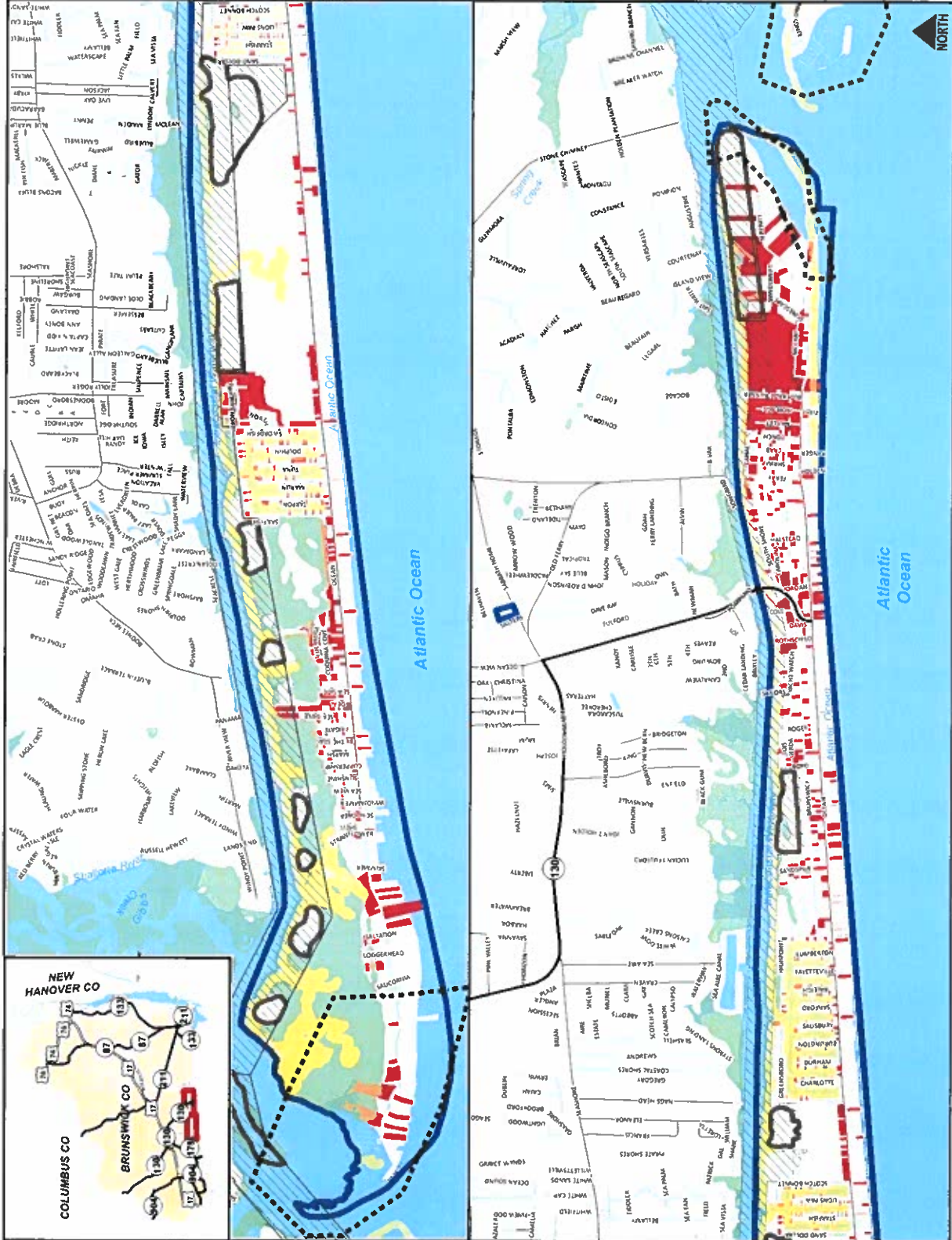
- Corporate Limits
- Vacant Parcels
- COE Disposal Areas
- COE Easement
- Inlet Hazard Area
- 75' Estuarine Shoreline AEC
- Coastal Wetlands

*COE = Army Corps of Engineers

Map is to be used for general purposes only. Spatial data used to generate this map was gathered from disparate sources and represent a condition at a fixed period in time. 100% accuracy of spatial data to current circumstances cannot be guaranteed. The Cape Fear Council of Governments is not legally responsible for the misuse of this map.



Map prepared by Cape Fear Council of Governments. Data sources: Brunswick Co., NCDEQ, NCDOT, USGS.



**Town of
Holden Beach**



2019 Land Use Plan

**Map 5.4
Future Land Use Map**

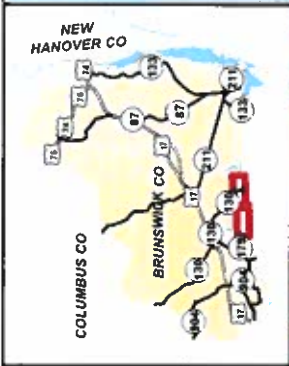
Legend

- Corporate Limits
- Future Land Use Categories**
- Commercial
- Multi-family Residential
- Residential
- Conservation

Map is to be used for general purposes only. Spatial data used to generate this map was gathered from disparate sources and represent a condition at a fixed period in time. 100% accuracy of spatial data to current circumstances cannot be guaranteed. The Cape Fear Council of Governments is not legally responsible for the misuse of this map.



Map prepared by Cape Fear Council of Governments. Data sources: Brunswick Co., NCDEQ, NCDOT, USGS.



CHAPTER 6: TOOLS FOR MANAGING DEVELOPMENT

This section of the Land Use Plan describes Holden 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 Holden 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 Holden Beach’s Comprehensive Land Use Plan will manage future land use and development.

EXISTING DEVELOPMENT MANAGEMENT PROGRAM

The Town of Holden Beach operates under the authority of a Commissioner-Manager form of government. Five Commissioners and the Mayor sit on the Town Board of Commissioners. The Holden Beach Planning and Inspections Department oversees development-related issues and construction inspections within the planning jurisdiction. The Town has a five member Planning and Zoning Board that reviews and comments on certain proposed developments. There is a five member Board of Adjustment that reviews appeals, conditional use permits, and variances.

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

HOLDEN BEACH’S LAND DEVELOPMENT REGULATIONS

The Town of Holden Beach, like other municipalities in the state, has been granted general statutory authority by the North Carolina General Statutes to enact necessary ordinances designed to protect and promote the health, safety and the general welfare of its citizens. Local plans and policies are enforced through ordinances adopted by the Board of Commissioners, which is granted this authority by the Charter ratified February 14, 1969. Below is a listing of Town Ordinances and enforcement provisions related to land use and development.

Holden Beach Zoning Code: The zoning ordinance is the most prominent land development regulatory tool used by the Town of Holden Beach. The zoning ordinance was originally adopted in 1972 and in 1985 all existing ordinances were incorporated into the Code of Ordinances. The ordinance regulates location and height of buildings, establishes minimum building lot sizes, and establishes districts in which uses related to residential, commercial, and institutional uses are either allowed or prohibited. In addition to the uses allowed within each district, certain conditional uses are permitted on a case-by-case review process.

Subdivision Regulations: Since 1969, the Town of Holden Beach has enforced subdivision regulations which guide the general design of newly developing areas within the Town’s jurisdiction. A subdivision is the division of any parcel or tract of land into two or more lots for the purpose of development. The

purpose of the subdivision regulations is to establish procedures and standards for the development and subdivision of land within the territorial jurisdiction of the Town of Holden Beach.

Building Code: The Town of Holden 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 Inspectors issue building permits and inspect construction to ensure strict compliance with all code enforcement.

Flood Damage Prevention Ordinance: The Town of Holden 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.

Dune Protection: Holden Beach protects its dunes by enforcing its CAMA permitting and the Building Code provisions and by forbidding vehicular traffic on the beach as regulated by the Traffic Code. Moreover, walkways are provided at each beach access and fences line these walkways which guide pedestrian traffic from disturbing the dunes.

Stormwater Management Plan and Ordinance: In 1998, Holden Beach adopted a comprehensive Stormwater Management Ordinance that was contained in a Stormwater Management Plan prepared under State DCM contract. The ordinance addresses problems associated with building and other development, especially placement of fill materials on the island. The intent of the ordinance is to control stormwater as much as possible within property boundaries, so that stormwater runoff does not adversely affect neighboring property.

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
Water Quality and Natural Environment		
3.1.I.1: Develop a Watershed Management Plan and/or Stormwater Management Master Plan with a principle focus on reduction of stormwater runoff volumes. Partnership with regional local governments or agencies may be required.	FY 2020 – 2021	Planning & Inspections, Public Works
3.1.I.2: Pursue grant funds to assist in developing a Watershed Restoration Plan. 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 Governments 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. 	FY 2019 – 2020	Planning & Inspections
3.1.K.1: When state roads are repaired or resurfaced, where practicable, work with the Department of Transportation (DOT) to use infiltration systems and other structural or nonstructural BMPs necessary to treat stormwater generated from road surfaces. When Town roads are repaired or resurfaced, the Town should consider seeking state funding to assist with its efforts to treat stormwater generated by road surfaces using infiltration devices and other structural and nonstructural Best Management Practices (BMPs).	Ongoing	Planning & Inspections, Public Works

Action Item	To be done in Fiscal Year	Department Responsibility
3.1.K.2: Continue efforts to educate homeowners about actions they can take to reduce stormwater runoff from their property.	Ongoing	Planning & Inspections, Public Works
3.1.L.1: The Town shall make the appropriate efforts to identify and eliminate stormwater discharges resulting from the Town's municipal activities.	Ongoing	Public Works
3.1.X.1: Consider implementation of an island-wide recycling program similar to solid-waste pickup.	FY 2019 – 2020	Administration/Finance, Public Works
3.1.X.2: Consider the installation of recycling bins at public beach locations.	FY 2020 – 2021	Public Works
Natural Hazard Areas		
3.2.J.1: Consider taking inventory of properties at risk from erosion to determine the scope of the issue in Holden Beach	FY 2020 – 2021	Planning & Inspections
3.2.L.1: Work with the Planning and Zoning Board to explore options to reduce fire damage through practices such as fire friendly landscaping, coordination with rental agencies, or other methods implemented throughout other North Carolina beach communities.	FY 2019 – 2020	Planning & Inspections
3.2.M.1: Continue to advocate for financial support for coastal storm damage reduction activities.	Ongoing	Administration/Finance
3.2.M.2: Develop a strategy for sustainable, long-term sources of funding for ongoing coastal storm damage reduction in the event that federal or state funding for coastal storm damage reduction projects is reduced.	Ongoing	Administration/Finance, Planning & Inspections
3.2.N.1: Continue to prepare annual Beach Monitoring Plans to ensure storm damage reduction and renourishment projects are appropriately tracked and analyzed as to their effectiveness.	Ongoing	Planning & Inspections
3.2.N.2: Work with the Inlet and Beach Protection Board to prepare an update to the Town's long-range Beach Management Plan.	Ongoing	Administration/Finance
3.2.U.1: Continue to implement a public education program designed to help inform the public about their exposure to natural hazards and actions they can take to mitigate potential damage to public health, safety, and property from natural disasters. This includes, but is not limited to: <ul style="list-style-type: none"> • Ensure local libraries maintain documents about flood insurance, flood protection, floodplain 	Ongoing	Planning & Inspections

Action Item	To be done in Fiscal Year	Department Responsibility
<p>management, and natural and beneficial functions of floodplains. Many documents are available free of charge from the Federal Emergency Management Agency (FEMA);</p> <ul style="list-style-type: none"> • Encourage builders, developers and architects to become familiar with the NFIP’s land use and building standards by attending annual workshops presented by the NC Division of Emergency Management (DEM); • Provide local real estate agents with handouts advising potential buyers to investigate potential flood hazards for the property they are considering purchasing; • Advertise the availability of flood insurance on an annual basis; and, • Post hazard related information on the Town’s website and distribute appropriate educational materials. 		
<p>3.2.V.1: Following each major storm or event requiring evacuation or storms impacting the island rated Category 2 or higher, the Town shall complete and publish an After Action Report. This document shall include public input, areas for improvement, and lessons learned.</p>	Ongoing	Administration/Finance, Planning & Inspections
<p>3.2.BB.1: In the event that the President declares Holden Beach a disaster area, the Planning Department shall apply for funding from the Hazard Mitigation Grant Program (HMGP) for priority projects.</p>	Ongoing	Planning & Inspections
Infrastructure Carrying Capacity		
<p>4.1.B.1: Continue to encourage homeowners to adopt practices that lead to water conservation.</p>	Ongoing	Planning & Inspections, Public Works
<p>4.1.B.2: Monitor water consumption figures and plan for the purchase of additional supply from the County.</p>	Ongoing	Administration/Finance, Public Works
<p>4.1.C.1: As a means to enhance water quality of the Intracoastal Waterway, encourage the County to provide additional sewage treatment to residents outside of town boundaries.</p>	Ongoing	Administration/Finance, Planning & Inspections
<p>4.1.E.1: Continue to work with NCDOT and GSATS to help improve traffic conditions both on the island and in surrounding areas as a result of a growing seasonal population, and growing</p>	Ongoing	Planning & Inspections

Action Item	To be done in Fiscal Year	Department Responsibility
population on the mainland in areas near Holden Beach.		
4.1.E.2: Work with developers to incorporate transportation improvements into new commercial and residential development projects when applicable.	Ongoing	Planning & Inspections
4.1.G.1: Work with the Planning and Zoning Board to explore policies and regulations concerning the operation of golf carts in the Town.	FY 2019 – 2020	Planning & Inspections
4.1.H.1: Pursue federal and state grant opportunities to construct sidewalks, crosswalks, greenways, bike lanes, and other bicycle and pedestrian facilities at strategic locations on the island.	Ongoing	Planning & Inspections
4.1.H.2: Pursue grant funds to complete an official NCDOT Comprehensive Bicycle and/or Pedestrian Transportation Plan. Grant applications are typically due November/December of each year. A 10% local cash match is required.	FY 2020 – 2021	Planning & Inspections
Public Access and Recreation		
4.2.A.1: Continue to identify ways to improve existing access sites and improve handicapped access.	Ongoing	Planning & Inspections
4.2.B.1: Consider updating the 2012 Parks and Recreation Master Plan as necessary.	FY 2020 – 2021	Parks & Recreation
4.2.E.1: Continue monitoring the need for public parking.	Ongoing	Planning & Inspections
4.2.H.1: Consider establishing policies and regulations concerning dune walkovers.	FY 2020 – 2021	Planning & Inspections
Land Use Compatibility		
5.1.C.1: Consider pursuing grant funds to create an Urban/Maritime Forestry Management Plan.	FY 2019 – 2020	Administration/Finance, Planning & Inspections
5.1.F.1: Consider submitting an application for the Town of Holden Beach to become a member of the AARP Network of Age-Friendly Communities and WHO Global Network of Age-Friendly Cities and Communities.	FY 2019 – 2020	Administration/Finance, Planning & Inspections
5.1.G.1: Review the Zoning Ordinance for proposed amendments needed to accommodate mixed use development projects in the Commercial Zoning District.	FY 2019 – 2020	Planning & Inspections
5.1.I.1: Consider updating the Town's Zoning Ordinance as necessary to address any	FY 2019 – 2020	Planning & Inspections

Action Item	To be done in Fiscal Year	Department Responsibility
incompatible single-family residential development that disrupts existing neighborhood character.		
5.1.J.1: Work with other public and nongovernmental organizations to preserve existing green space and acquire or otherwise protect conservation areas, and other sensitive natural areas to ensure their long-term protection.	Ongoing	Parks & Recreation, Planning & Inspections
5.1.J.2: Work with willing land owners and encourage them to gift lands to the Town that can be used for public access, recreation, or conservation purposes.	Ongoing	Parks & Recreation, Planning & Inspections
5.1.M.1: Consider updating the Town's Zoning Ordinance with marina land use and development regulations.	FY 2019 – 2020	Planning & Inspections
5.1.P.1: Explore options to influence the land use and development on the mainland along the Intracoastal Waterway and Causeway.	FY 2020 – 2021	Administration/Finance, Planning & Inspections
5.1.Q.1: Continue to utilize standing committees and boards to involve the public in planning decisions whenever practicable.	Ongoing	Planning & Inspections
5.1.Q.2: Continue to utilize the Town's website and other methods to keep citizens informed of planning and land use decisions whenever practicable.	Ongoing	Planning & Inspections

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
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