

# Town of Emerald Isle



## Comprehensive Land Use Plan

Adopted: November 14, 2017  
Certified: January 24, 2018

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<b>Matrix for Land Use Plan Elements - 15A NCAC 7B.0702</b>	
	<b>Page Reference(s)</b>
<b>Organization of the Plan</b>	
<ul style="list-style-type: none"> <li>Matrix that shows the location of the required elements as set forth in this Rule.</li> </ul>	TC-4 to TC-8
<b>Community Concerns and Aspirations</b>	
<ul style="list-style-type: none"> <li>Description of the dominant growth-related conditions that influence land use, development, water quality and other environmental conditions in the planning area.</li> </ul>	1-7
<ul style="list-style-type: none"> <li>Description of the land use and development topics most important to the future of the planning area including:                             <ul style="list-style-type: none"> <li>Public Access</li> <li>Land Use Compatibility</li> <li>Infrastructure Carrying Capacity</li> <li>Natural Hazard Areas</li> <li>Water Quality</li> </ul> </li> </ul>	1-7 5-8 5-9 5-11 5-12 5-13
<b>Community Vision</b>	
<ul style="list-style-type: none"> <li>Description of the general physical appearance and form that represents the local government’s plan for the future. It shall include objectives to be achieved by the plan and identify changes that may be needed to achieve the planning vision.</li> </ul>	1-7 to 1-9
<b>Existing and Emerging Conditions</b>	
<b>Population, Housing, and Economy</b>	
Discussion of the following data and trends:	
<ul style="list-style-type: none"> <li>Permanent population growth trends using data from the two most decennial Censuses.</li> </ul>	2-1 to 2-2
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<ul style="list-style-type: none"> <li>Key population characteristics including age and income.</li> </ul>	2-1 to 2-8
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<b>Natural Systems</b>	
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<ul style="list-style-type: none"> <li>Areas of Environmental Concern (AECs) as set forth in Subchapter 15A NCAC 07H.</li> </ul>	3-9 to 3-15
<ul style="list-style-type: none"> <li>Soil characteristics, including limitations for septic tanks, erodibility, and other factors related to development.</li> </ul>	3-6, Appendix E
<ul style="list-style-type: none"> <li>Environmental Management Commission (EMC) water quality classifications and related use support designations.</li> </ul>	3-6 to 3-9, 3-18 to 3-20

Natural Systems (continued)	Page Reference(s)
● Division of Marine Fisheries (DMF) shellfish growing areas and water quality conditions.	3-17 to 3-18
● Flood and other natural hazard areas.	3-2 to 3-6
● Storm surge areas.	3-2 to 3-6
● Non-coastal wetlands, including forested wetlands, shrub-scrub wetlands and freshwater wetlands.	3-11 to 3-12
● Water supply watersheds or wellhead protection areas.	3-7
● Primary nursery areas.	3-17 to 3-18
● Environmentally fragile areas, such as wetlands, natural heritage areas, areas containing endangered species, prime wildlife habitats, or maritime forests.	3-9 to 3-16, Appendix F, Appendix G
● Additional natural features or conditions identified by the local government.	N/A
<b>Environmental Conditions</b> Discussion of environmental conditions within the planning jurisdiction to include an assessment of the following conditions and features:	
● Status and changes of surface water quality, including: <ul style="list-style-type: none"> <li>○ Impaired streams from the most recent Division of Water Resources (DWR) Basin Planning Branch reports.</li> <li>○ Clean Water Act 303 (d) list.</li> <li>○ Other comparable data.</li> </ul>	3-6 to 3-7, 3-18 to 3-19
● Current situation and trends on permanent and temporary closures of shellfishing waters as determined by the Report of Sanitary Survey by the Shellfish Sanitation and Recreational Water Quality Section of the DMF.	3-17 to 3-18
● Areas experiencing chronic wastewater treatment malfunctions.	3-28 to 3-29
● Areas with water quality or public health problems related to non-point source pollution.	3-7
● Areas subject to recurrent flooding, storm surges, and high winds.	3-2 to 3-6
● Areas experiencing significant shoreline erosion as evidenced by the presence of threatened structures or public facilities.	3-13
● Environmentally fragile areas (as defined in Part (c)(2)(A)(ix) of this Rule) or areas where resource functions are impacted as a result of development.	3-9
● 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.	3-9

Existing Land Use and Development	Page Reference(s)
<ul style="list-style-type: none"> <li>● Map of existing land use patterns.                             <ul style="list-style-type: none"> <li>○ Description of the existing land use patterns.</li> <li>○ Estimates of the land area allocated to each land use category.</li> <li>○ Characteristics of each land use category.</li> </ul> </li> </ul>	<p>3-34</p> <p>3-33</p> <p>3-33</p> <p>3-33 to 3-38</p>
<ul style="list-style-type: none"> <li>● Map of historic, cultural, and scenic areas designated by a state or federal agency or by the local government.                             <ul style="list-style-type: none"> <li>○ Descriptions of the historic, cultural, and scenic areas.</li> </ul> </li> </ul>	<p>3-32</p>
<p><b>Community Facilities</b></p> <p>Evaluation of existing and planned capacity, location and adequacy of community facilities to include:</p>	
<ul style="list-style-type: none"> <li>● Map of existing and planned public and private water supply service areas.                             <ul style="list-style-type: none"> <li>○ Description of existing public and private water supply systems to include:                                     <ul style="list-style-type: none"> <li>- Existing condition.</li> <li>- Existing capacity.</li> <li>- Documented overflows, bypasses, or other problems that may degrade water quality or constitute a threat to public health as documented by the DWR.</li> <li>- Future water supply needs based on population projections.</li> </ul> </li> </ul> </li> </ul>	<p>Appendix H</p> <p>3-27 to 3-28</p> <p>4-5 to 4-6</p>
<ul style="list-style-type: none"> <li>● Map of existing and planned public and private wastewater service areas.                             <ul style="list-style-type: none"> <li>○ Description of existing public and private wastewater systems to include:                                     <ul style="list-style-type: none"> <li>- Existing condition.</li> <li>- Existing capacity.</li> <li>- Documented overflows, bypasses, or other problems that may degrade water quality or constitute a threat to public health as documented by the DWR.</li> <li>- Future wastewater system needs based on population projections.</li> </ul> </li> </ul> </li> </ul>	<p>Appendix H</p> <p>3-28 to 3-29</p> <p>4-6</p>
<ul style="list-style-type: none"> <li>● Map of existing and planned multimodal transportation systems and port and airport facilities.                             <ul style="list-style-type: none"> <li>○ Description of any highway segments deemed by the NC Department of Transportation (NCDOT) as having unacceptable service as documented on the most recent NCDOT Transportation and/or Thoroughfare Plan.</li> <li>○ Description of highway facilities on the current thoroughfare plan or current transportation improvement plan.</li> <li>○ Description of the impact of existing transportation facilities on land use patterns.</li> <li>○ Description of the existing public stormwater management system.</li> <li>○ Identification of existing drainage problems and water quality issues related to point source discharges of stormwater runoff.</li> </ul> </li> </ul>	<p>4-10</p> <p>4-8</p> <p>3-31</p> <p>3-31</p> <p>3-29</p> <p>3-29</p>

	Policy Citation(s)	Page Reference(s)
<b>Future Land Use</b>		
<b>Policies</b>		
<ul style="list-style-type: none"> <li>● Policies that exceed the use standards and permitting requirements found in Subchapter 7H, State Guidelines for Areas of Environmental Concern.</li> </ul>	N/A	5-7
Policies that address the Coastal Resources Commission's (CRC's) management topics:		
<b>Public Access</b> Management Goal: <i>Maximize public access to the beaches and the public trust waters of the coastal region.</i>		
The planning objectives for public access are local government plan policies that:		
<ul style="list-style-type: none"> <li>● Address access needs and opportunities.</li> </ul>	1-10	5-8 to 5-9
<ul style="list-style-type: none"> <li>● Identify strategies to develop public access.</li> </ul>	1, 2, 3, 4	5-8
<ul style="list-style-type: none"> <li>● Address provisions for all segments of the community, including persons with disabilities.</li> </ul>	2	5-8
<ul style="list-style-type: none"> <li>● For oceanfront communities, establish access policies for beach areas targeted for nourishment.</li> </ul>	1	5-8
<b>Land Use Compatibility</b> Management Goal: <i>Ensure that development and use of resources or preservation of land balance protection of natural resources and fragile areas with economic development, and avoids risks to public health, safety, and welfare.</i>		
The planning objectives for land use compatibility are local government plan policies that:		
<ul style="list-style-type: none"> <li>● Characterize future land use and development patterns.</li> </ul>	11-26	5-9 to 5-11
<ul style="list-style-type: none"> <li>● Establish mitigation criteria and concepts to minimize conflicts.</li> </ul>	11-26	5-9 to 5-11
<b>Infrastructure Carrying Capacity</b> Management Goal: <i>Ensure that public infrastructure systems are sized, located, and managed so the quality and productivity of AECs and other fragile areas are protected or restored.</i>		
The planning objectives for infrastructure carrying capacity are local government plan policies that:		
<ul style="list-style-type: none"> <li>● Establish service criteria.</li> </ul>	27-34	5-11 to 5-12
<ul style="list-style-type: none"> <li>● Ensure improvements minimize impacts to AECs and other fragile areas.</li> </ul>	33	5-12



	Policy Citation(s)	Page Reference(s)
<b>Natural Hazard Areas</b> Management Goal: <i>Conserve and maintain barrier dunes, beaches, floodplains, and other coastal features for their natural storm protection functions and their natural resources giving recognition to public health, safety, and welfare issues.</i>		
The planning objectives for natural hazard areas are local government plan policies that:		
<ul style="list-style-type: none"> <li>● Establish mitigation and adaptation concepts and criteria for development and redevelopment, including public facilities.</li> </ul>	35-48	5-12 to 5-13
<ul style="list-style-type: none"> <li>● Minimize threats to life, property, and natural resources resulting from erosion, high winds, storm surge, flooding, or other natural hazards.</li> </ul>	35-48	5-12 to 5-13
<b>Water Quality</b> Management Goal: <i>Maintain, protect, and where possible, enhance water quality in all coastal wetlands, rivers, streams, and estuaries.</i>		
The planning objectives for water quality are local government plan policies that:		
<ul style="list-style-type: none"> <li>● Establish strategies and practices to prevent or control nonpoint source pollution.</li> </ul>	49-60	5-14
<ul style="list-style-type: none"> <li>● Establish strategies and practices to maintain or improve water quality</li> </ul>	49-60	5-14
<b>Future Land Use Map</b>		<b>Page Reference(s)</b>
<ul style="list-style-type: none"> <li>● Map of future land uses that depicts the policies for growth and development and the desired future patterns of land use and development with consideration given to natural system constraints and infrastructure.                             <ul style="list-style-type: none"> <li>○ Descriptions of land uses and development associated with the future land use map designations.</li> </ul> </li> </ul>		4-11 to 4-17
<b>Tools for Managing Development</b>		
<ul style="list-style-type: none"> <li>● Description of the role of plan policies, including the future land use map, in local decisions regarding land use and development.</li> </ul>		6-1 to 6-3
<ul style="list-style-type: none"> <li>● Description of the community’s development management program, including local ordinances, codes, and other plans and policies.</li> </ul>		6-1 to 6-3
<b>Action Plan and Implementation Schedule</b>		
<ul style="list-style-type: none"> <li>● Description of actions that will be taken by the local government to implement policies that meet the CRC’s management topic goals and objectives, specifying fiscal year(s) in which each action is anticipated to start and finish.</li> </ul>		5-8 to 5-15 6-1 to 6-3
<ul style="list-style-type: none"> <li>● Identification of specific steps the local government plans to take to implement the policies, including adoption and amendment of local ordinances, other plans, and special projects.</li> </ul>		6-1 to 6-3

# Section 1. Introduction

## PLAN PURPOSE

The Town of Emerald Isle has evolved as one of the most appealing vacation and second home communities on the coast of North Carolina. Establishment of this quaint and naturally rich destination was initiated in the early 1950s when twelve miles of beach, now known as Emerald Isle, was purchased by a group of investors from Red Springs, North Carolina. This group of investors immediately established a vision of Emerald Isle's future which involved the maintenance of the Island's natural beauty. This model remains in place to this day, which is evident to all who frequent this unique barrier island community.

Since the 1950s, Emerald Isle has flourished into one of the largest and most successful beach towns in the State. Development is predominantly comprised of single-family home development. Additionally, the Town has managed to maintain a healthy and functioning commercial center intended to provide a range of goods and services to permanent residents and visitors alike. To that end, the purpose of this Comprehensive Plan is to provide a community-based vision for growth and development, while also synthesizing community desires and preserving Emerald Isle's unique sense of place.

## WHAT IS A COMPREHENSIVE PLAN?

Specifically, this process will result in the adoption of an official Comprehensive Plan for the Town of Emerald Isle. This planning process will be considered an update to the Town's existing CAMA Land Use Plan initially adopted in 2004. A Comprehensive Plan is a long-range policy document with a particular time horizon – fifteen years in the case of Emerald Isle. The plan will include an assessment of existing conditions, a summary of public input, projection of future needs for topics relating to land use and development, and a comprehensive listing of goals, policies, and strategies. Because the

Town of Emerald Isle is located in one of North Carolina's twenty Coastal Area Management Act (CAMA) counties, the plan will also address issues relating specifically to coastal growth and development.

### What is CAMA?

CAMA is the North Carolina Coastal Area Management Act (NCGS 113A-100, *et seq.*), which establishes a cooperative program of coastal area management between local and state governments. The Act, originally passed in 1974 and since amended, states that local governments shall have the initiative for planning, while the state government establishes areas of environmental concern. With regard to planning, the state government is directed to act primarily in a supportive, standard-setting, and review capacity, except in situations where local governments do not elect to exercise their initiative.

In addition, CAMA establishes the Coastal Resources Commission within the Department of Environmental Quality, whose duties include approval of Coastal Habitat Protection Plans and designation of Areas of Environmental Concern (AEC). After designation of these areas, the Commission is responsible for issuing all permits. *Source: National Oceanic and Atmospheric Administration, Coastal Services Center.*



North Carolina Counties Covered by CAMA

In North Carolina, a Comprehensive Plan is the legal foundation for development regulations. While the Comprehensive Plan is not a regulatory document, it does provide guidance relating to future land use and development changes. Specifically, the plan should be used whenever zoning decisions are made by the Planning Board and/or Board of Commissioners. More detail relating to these specifics is contained in the concluding section of the plan.

The following is included as part of the Comprehensive Planning process:

- Community and Demographic Profile
- Assessment of Existing Conditions
- Projection of Future Population and Supporting Infrastructure Needs
- Future Land Use and Transportation Needs
- Goals and Implementing Strategies

### DEVELOPMENT OF THE COMPREHENSIVE PLAN

The Emerald Isle Board of Commissioners adopted a citizen participation plan (CPP) at the outset of the project (see Appendix A). The CPP established the Comprehensive Plan Advisory Committee (CPAC) to guide development of the plan. The CPAC members, as appointed by the Emerald Isle Board of Commissioners, are listed below.

- Jim Normile (Commissioner)
- Ken Sullivan (Planning Board)
- Larry Watson (Retail/Restaurant/Business)
- Bruce Hedreen (Retail/Restaurant/Business)
- Carole Lanier (Tourism-Oriented Business)

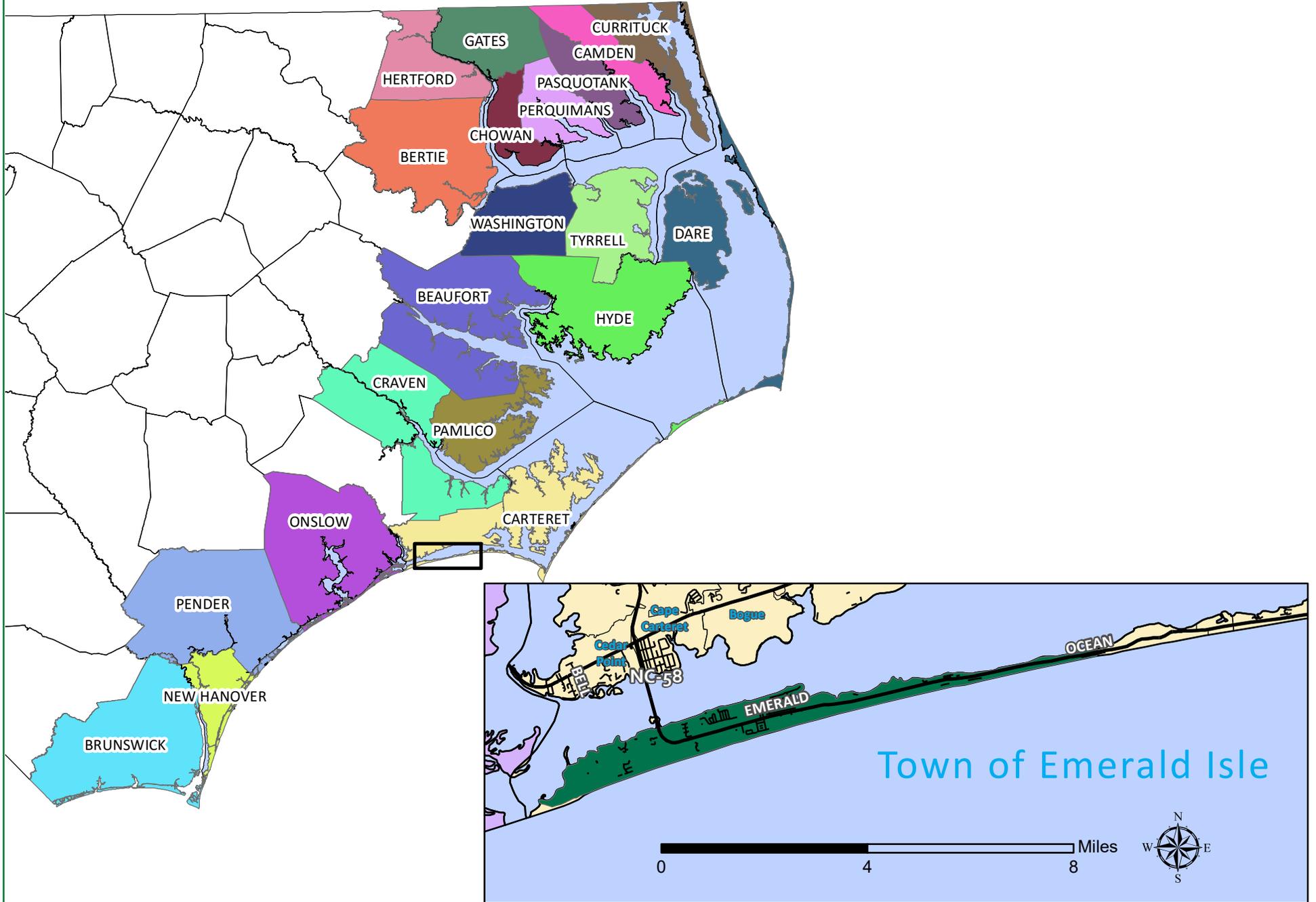
- Malcolm Boartfield (Real Estate/Developer/Contractor)
- Nathan Wax (Vacation Rental Company)
- Georgia Ricks (Campground/RV Park/MH Park)
- Amy Reardon (Second Homeowner)
- Ron Harkless (Second Homeowner)
- Mike Campbell (Permanent Resident)
- Chad MacAvery (Permanent Resident)
- Randy Campbell (Permanent Resident)

### REGIONAL SETTING & CONTEXT

Emerald Isle is located along a stretch of coastline known as Bogue Banks in Carteret County, North Carolina. Bogue Banks is comprised of the Towns of Emerald Isle, Indian Beach, Pine Knoll Shores, and Atlantic Beach, as well as some unincorporated portions of Carteret County. Bogue Banks is one of the few south facing barrier island communities in North Carolina.

The primary transportation route serving Emerald Isle is NC Highway 58. Highway 58 enters the Town from Cape Carteret to the north by way of the Cameron Langston Bridge. Highway 58 traverses the extent of the Town's corporate limits leading to the Towns of Indian Beach and Pine Knoll Shores, ultimately reaching Atlantic Beach where NC 58 connects back to the mainland into Morehead City. A majority of the Town is served by narrow local access streets that are owned and maintained by the Town of Emerald Isle. Map 1 provides the regional location.

# MAP 1. REGIONAL LOCATION



## HISTORY

500 A.D. to Colonial Times  
Algonquin Indians  
inhabited the lands now  
known as Emerald Isle.



Source: [www.wikipedia.org](http://www.wikipedia.org).

1730 to 1950

The Town was inhabited by a limited number of pioneering individuals.



Source: [www.pineknollhistory.blogspot.com](http://www.pineknollhistory.blogspot.com).

1730

English Colonists began to  
arrive on the shores of  
Bogue Banks.



Source: [www.outerbanksrentals.com](http://www.outerbanksrentals.com).

1950

Small family cottages  
began to be constructed  
on the island.



Source: [Town of Emerald Isle](http://Town of Emerald Isle).

1951

Twelve miles of what is now Emerald Isle was purchased for \$350,000.

1952

Property was subdivided into blocks.

1957

The Town of Emerald Isle was incorporated.



Source: Town of Emerald Isle.

1960

Ferry service from the mainland to Emerald Isle was established.

1971

The Cameron Langston Bridge was completed from Cape Carteret to Emerald Isle.



Source: [www.ncpedia.org](http://www.ncpedia.org)

After 1971

Steady residential growth resulting in the current built environment.



## PAST PLANNING EFFORTS

As part of the planning process, past policy documents, capital improvements plans, and CAMA Land Use Plans were analyzed for significant findings relating to Emerald Isle’s future. These past planning efforts help to provide a broader sense of understanding for the issues facing Emerald Isle today. The following planning projects were utilized to gather information, research past public input priorities, and understand growth and development that has occurred over the past two decades.

- Pamlico Sound Regional Hazard Mitigation Plan
- Updates to the Emerald Isle Unified Development Ordinance
- Cherry Point Regional JLUS Study
- Carteret County Comprehensive Plan
- Bogue Banks Master Beach Nourishment Plan

## PLAN OVERVIEW

The Emerald Isle Comprehensive Plan is divided into six independent components that focus on various aspects of the community. The following provides a brief synopsis of what will be addressed within each plan element:

### Section 1. Introduction

This plan element provides a general overview of the plan, planning process, and enabling legislation regarding the establishment and use of Comprehensive/Land Use Plan in local government decision-making.

### Section 2. Community Profile

This plan element provides a general overview of existing conditions throughout the Town of Emerald Isle with regard to population, housing age and condition, and economic indicators. This section

serves as a basic overview of the Town’s current state of affairs and as a baseline for discussion regarding growth, development, and public policy.

### Section 3. Existing Conditions

This plan element focuses on existing environmental and land use conditions throughout Emerald Isle’s planning jurisdiction including environmental factors, facilities and services, transportation, land use/suitability, and neighborhoods. This information provides the data and analysis necessary to make sound decisions regarding development of the Town’s Future Land Use Map.

### Section 4. Future Demand/Projections

This section of the plan focuses on future growth and demand which may have an impact on land use and transportation. Citizen input garnered as a result of the plan is also summarized in this section. Forecasts of growth and demand are, at best, difficult. Constantly changing local, regional, national, and international factors significantly influence the Town of Emerald Isle and the surrounding region. Additionally, the Future Land Use element defines the framework for future growth and development throughout the Town of Emerald Isle.

### Section 5. Goals and Implementing Actions

The discussion of goals and policies/implementing actions will serve as a guide for the integration of the Comprehensive Plan into the Town’s day-to-day decision-making process. Additionally, the goals and policies/implementing actions defined within this plan element will establish an organized and thorough listing of strategies intended to provide for sound principles relating to future growth, economic development, modifications of service delivery, and infrastructure expansion.

## Section 6. Tools for Managing Development

This section of the plan provides narrative and tools for implementing the strategies outlined in Section 5 of the plan. It is intended that this document be an integral part of the Emerald Isle decision-making process concerning future land use.

Land use development, water quality, and other environmental conditions in the planning area are influenced by the substantial seasonal population influx, protection of vital natural resources, establishment of sustainable infrastructure, improvement of traffic flow/congestion, and consistent and compatible land uses and zoning considerations. In addition, the following CAMA issues will be discussed: public access, land use compatibility, infrastructure carrying capacity, natural hazard areas, and water quality.

## VISION STATEMENT

### Emerald Isle Vision Statement

*We the people of Emerald Isle seek to shape a future for our Town that preserves our history and enhances its natural features and rich family-centric beach heritage, while providing the services and amenities that characterize a healthy, vibrant community. Emerald Isle's distinguishing characteristics are the spectacular coastal resources, small town identity and our citizens. These characteristics molded our past and will continue to frame our future.*

## Core Purpose, Envisioned Principles & Objectives for the Future

*We the people of Emerald Isle recognize that to nurture the qualities that are valuable to residents, business owners, property owners and visitors alike, we must establish and renew principles and objectives that guide our future proceedings.*

*Emerald Isle is renowned for its family-friendly water-based lifestyle, natural maritime forests and the Emerald Drive Gateway extending from Cameron Langston Bridge to Coast Guard Road. Native vegetation and magnificent dunes dominate the skyline – not over-commercialization and tall buildings.*

*Emerald Isle retains its small town character and charm and will continue to enhance the bicycle and pedestrian multi-use path for the benefit and added value of all to enjoy.*

*Most Emerald Isle businesses are located in specified compact "downtown" corridors and tracts. Older areas remain vibrant with new and renovated buildings, and flourishing businesses, with safe, well-lighted easy access pathways from residential areas. A compact Eastern Commercial Area helps to serve the day-to-day needs of residents and visitors, alleviates secondary traffic to the western downtown area, and should be preserved for commercial use.*

*Native trees and shrubs dominate Emerald Isle's landscape. Property owners preserve native vegetation on private property; developers preserve and maintain vegetation where possible; and parking lots have no more hard surface than necessary and are softened with many trees and shrubs.*



*Retail and commercial services support our local population and the tourism economy, and they have also developed to serve the growing number of year-round residents and businesses.*

*The community is careful to avoid over-commercialization in order to preserve our distinct family-friendly, water-based lifestyle, and cultural heritage.*

*Low density is the predominant quality of overall development design.*

*Emerald Isle’s ocean beach, Bogue Inlet, sound front, and waters of Bogue Sound provide high quality recreational and aesthetic values to residents, visitors, and businesses, and they are underpinnings for the local economy. The quality of these resources is the result of long-term efforts by the Town and its property owners.*

*Emerald Isle protects its coastal lifestyle by giving preservation of natural resources and protection of water quality the highest priority. The Town cooperates with state and federal agencies to protect coastal wetlands from harmful development. Important freshwater wetlands are intact, and they continue to store clean water and provide a rich habitat for a rich diversity of plants and animals. The Town protects surface waters from degradation by storm water and polluting discharges, and they remain clean. Shellfish, shrimp and pan fish are plentiful in Bogue Sound and they taste great.*

*Active and passive recreation opportunities are plentiful – for children, teens, adults, and seniors. The Emerald Isle Community Center is the focal point for diverse recreation programs, and club meetings, and is supportive of our many local gifted artists. Public accesses and parks, as well as facilities provided by private developments, provide for an*

*abundance of indoor and outdoor activities. Residents and visitors have access to the beaches and sound.*

*Exceptional municipal services support the quality of life offered by Emerald Isle to both year-round and seasonal residents, businesses, and visitors alike. The Town helps ensure that all private wastewater treatment systems protect the environment and public health. The Town provides high quality solid waste and recycling services, and assists to keep unsightly containers from public view.*

*Emerald Isle is a safe place to live and visit. The Town provides an adequate number of trained police officers to respond quickly to any need. The Fire Department has trained staff and proper equipment to protect the community. EMS personnel are able to provide state-of-the-art advanced life support services.*

*Emerald Isle values its cooperative spirit – Nice Matters!*



*The Town works with its citizens, property owners, and businesses, and with other local governments in the region to implement programs and services addressing issues that affect our quality of life. The Town values the opinions of its residents, property owners, and business owners, and involves them in decisions regarding the Town and its future. The Town is also mindful that to create the future that it envisions, it must protect the interests of its property owners.*

*Emerald Isle recognizes the sacrifices of our military community and its first responders. We will always stand by their side.*

*We will recognize, protect, and enhance the qualities of the natural resources which have been entrusted to us that make Emerald picturesque with a pristine environment.*

*We will recognize that Emerald Isle has a dual residential and seasonal character that can be and should be compatible.*

*We will recognize, retain and enhance our Town's identity as a friendly, neighborhood-scaled, family-oriented, relatively affordable residential community.*

*We will take advantage of Emerald Isle's separate and distinct neighborhood areas and business districts which have evolved from our history and proper planning to meet its varying goals.*

*We will recognize that excellence in education is fundamental to the quality of life in the community. We will work to support the Carteret County public education system in reaching the highest caliber and preparing our students to develop as individuals, to be morally and socially responsible citizens, while preparing to be productive members of society.*

*We will consider each new development opportunity very carefully since relatively few opportunities for development remain.*

*We will maintain our beaches and all water access points through a planned process.*

*We will review, modify as appropriate, and enforce zoning, building codes, sign ordinances, and other regulatory mechanisms consistent with Federal and State laws and local municipal planning efforts.*

*“Planning is bringing the future into the present so that you can do something about it now.”*

*–Alan Lakein*

## **Section 2. Community Profile**

## INTRODUCTION

The Community Profile section outlines various demographic information, including population, housing, and economic indicators. The North Carolina beach towns of Atlantic Beach and Oak Island are utilized for comparison purposes throughout this section. These two municipalities have similar characteristics to Emerald Isle, making them ideal candidates for comparison. For the purposes of this plan, and for the sake of consistency, demographic data are sourced primarily from the US Census Bureau. Census data may also be supplemented with figures from the NC Office of State Budget and Management (NCOSBM). It should be noted that unless expressly mentioned, all data and figures reference permanent residents. Detailed demographic information is not available for seasonal residents through the US Census Bureau or the NCOSBM.

## POPULATION

### Regional Permanent Population

Population growth throughout the Bogue Banks communities, as well as other North Carolina beach communities, has been slow but steady over the last fifteen years. Emerald Isle’s permanent population has grown at a rate of 5.8% between the years of 2000 and 2014, which is in line with other Bogue Banks and regional communities. A majority of Emerald Isle’s growth occurred during the 1980s and early 1990s. Between the years 1980 and 1990, the Town’s permanent population increased significantly at a rate of 175%, a total population increase of 1,548 persons.

Table 1. Regional Population Growth, 2000-2014

Municipality	2000 Population	2014 Population	% Growth/Decline 2000-14
Atlantic Beach	1,781	1,618	-9.2%
<b>Emerald Isle</b>	<b>3,488</b>	<b>3,689</b>	<b>5.8%</b>
Indian Beach	95	222	133.7%
Oak Island	6,571	7,051	7.3%
Pine Knoll Shores	1,524	1,549	1.6%

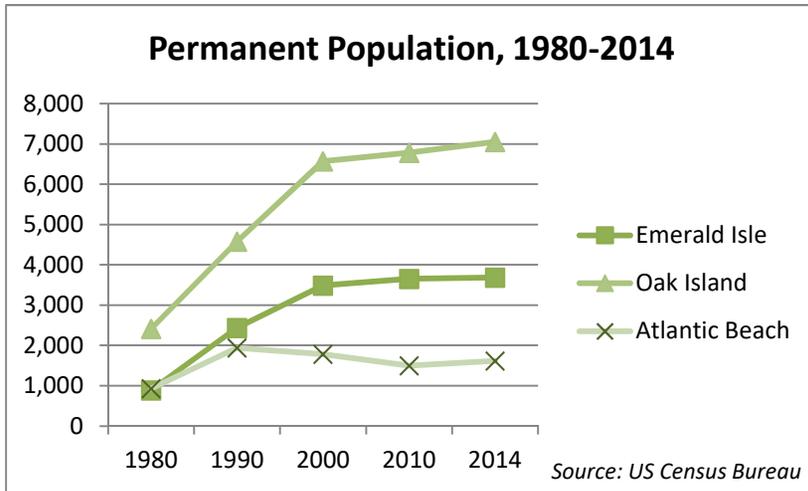
Source: US Census Bureau.

As noted in Table 2, the permanent population in Emerald Isle rapidly increased during the 1980s and early 1990s. This growth can be mainly attributed to the proliferation of municipal infrastructure that was constructed over this same period of time. Prior to 1980, there was no public right-of-way traversing the extent of Bogue Banks. Development of this key infrastructure opened up the entire Bogue Banks shoreline to potential development. Additionally, municipal water systems began their inception during this same period. Permanent population growth since development of the 2004 CAMA Land Use Plan, however, has been modest at 5.4%.

Table 2. Permanent Population, 1980-2014

Year	Emerald Isle	Atlantic Beach	Oak Island
1980	886	930	2,413
1990	2,434	1,938	4,580
2000	3,488	1,781	6,571
2010	3,655	1,495	5,783
2014	3,689	1,618	7,051
% Change '80-'14	316%	74%	192%

Source: US Census Bureau.



### Seasonal Population

Because demographic data is collected only for permanent residents, it can be difficult to determine the precise number of seasonal residents that are located in a given jurisdiction at any given time. Total 2015 housing occupancy is based on total projected housing units and overall housing size reported in the 2015 US Census American Community Survey. These figures account for both seasonal visitors and permanent residents. Day visitation was calculated based on the availability of public access parking spaces throughout the Town’s corporate limits. Currently, there are 350 public access spaces and it is assumed that these spaces will turnover once throughout the course of a day.

#### Emerald Isle Seasonal Weekly Population Estimates (2015)

Total Housing Occupancy + Day Visitation = Peak Weekly Population

**39,089 + 700 = 39,789**

Source: US Census, Town of Emerald Isle.

### Population by Age

Typically, beach communities have a higher median age than mainland communities. This occurrence is, of course, due to the large retirement age population that resides year-round in coastal municipalities. Compared to the state’s median age, Emerald Isle and the comparison municipalities have a much older resident base. In mainland communities, a higher median age is indicative of a declining population base, while in a coastal community it can be attributed to the retirement population. As noted, Emerald Isle’s median population of 52.5 years of age is much higher than the State median age of 37.8. Emerald Isle does, however, compare favorably with other beach communities mentioned in the plan including Oak Island (53.7), Atlantic Beach (50.7), and Pine Knoll Shores (61.6).

The aging population is also reflected in the breakdown of the Town’s permanent population by age range. According to the US Census Bureau, the “Baby Boomer” age cohort accounts for the largest percentage of Emerald Isle’s population. This age cohort is typically comprised of older working adults nearing the end of their career or retirees. Many of these individuals may be “empty nesters” who do not have children living at home, so their leisure activities may be more focused on socializing and being active. This factor differs dramatically from North Carolina’s age distribution as a whole, whose Baby Boomers age cohort accounts for only 20% of the population. Between 2000 and 2014, Emerald Isle’s age distribution stayed roughly the same and was consistent with demographic trends nationwide. Changes in the age distribution in Emerald Isle from 2000 to 2014 are similar to smaller North Carolina municipalities that tend to increase in age and lose their younger age cohorts, particularly the “Millennial” age group who move away for college or job prospects.

**Table 3. Emerald Isle Age Distribution, 2014**

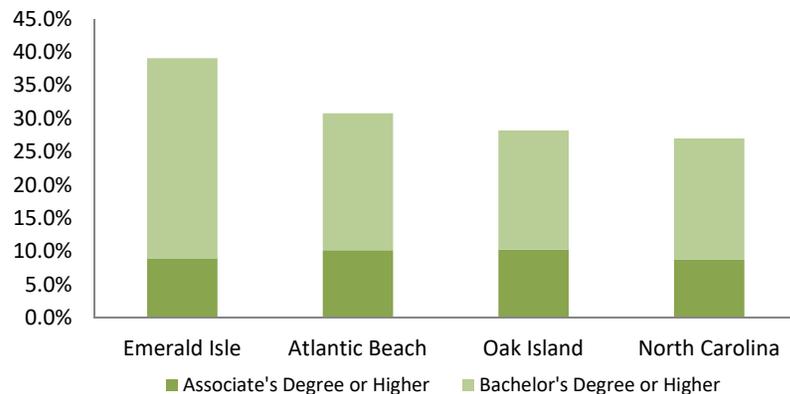
Defined Generation	2014	% of Population
Silent Generation (Older than 70)	607	16.4%
Baby Boomers (50-69)	1,325	35.9%
Generation X (35-49)	610	16.5%
Millennial (20-34)	531	14.4%
Generation Z (Younger than 20)	616	16.7%

Source: US Census Bureau.

### Educational Attainment

The overall educational attainment of a given community can be a significant indicator in health concerns, economic mobility, and socioeconomic status. Most coastal barrier island communities are comprised of a population base with higher educational attainment. This factor can be attributed to the significant number of transplants moving into town at retirement or near retirement age. As of 2014, approximately 39% of Emerald Isle residents had either an Associates or Bachelor’s Degree, compared to 27% for North Carolina overall.

**Educational Attainment, 2014**



Source: US Census Bureau

### HOUSING

The discussion of housing includes a description of unit types, occupancy status, and year built. In Emerald Isle, as in other coastal municipalities, it is important to include discussion of vacant housing units that may be seasonally occupied, giving a greater understanding of the conditions facing the community during the peak summer months.

#### Housing Unit by Type

A majority of the Town’s housing stock is comprised of single-family residential (SFR) housing. As of 2014, approximately 65% of all units throughout the Town were classified as single-family. The number of single-family homes in Emerald Isle has increased at a rate of 16%, resulting in 715 new units since the 2000 Census.

The percentage of single-family homes in the Town compares favorably to the other jurisdictions being utilized for comparison purposes. Emerald Isle maintains fewer single-family units than Oak Island; however, the Town boasts a healthy number of multi-family (MFR) units, which is an important asset for seasonal visitors. Atlantic Beach, on the other hand, has a substantial number of multi-family units (42% of housing stock), resulting in a less robust single-family housing market.

One other factor to consider regarding Emerald Isle’s housing demographic is the fairly high number of manufactured homes (MH) situated through the Town’s jurisdiction. MH’s are a desired housing type in portions of some beach communities where land cost can limit investment in housing starts.

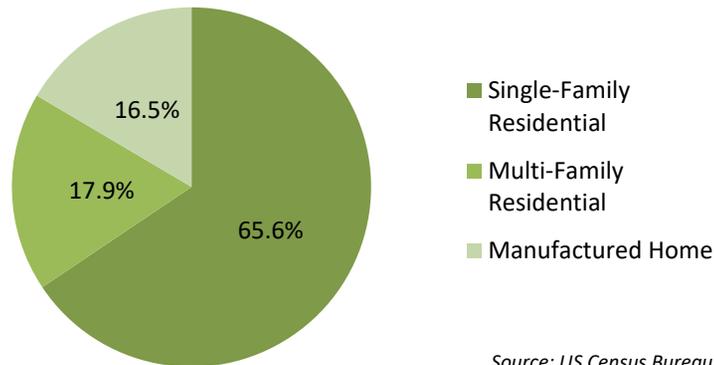


**Table 4. Housing Units by Type, 2014**

Units	Emerald Isle	Atlantic Beach	Oak Island
Total Units	6,711	5,014	8,679
Single-Family Residential Units	4,404	1,836	7,328
% of Single-Family Residential	65.6%	36.6%	84.4%
Multi-Family Residential Units	1,199	2,112	788
% of Multi-Family Residential	17.9%	42.1%	9.1%
Manufactured Home Units	1,108	1,066	563
% of Manufactured Home	16.5%	21.3%	6.5%

Source: US Census Bureau.

**Emerald Isle % of Total Housing Units**



Source: US Census Bureau

**Housing Unit by Age**

The housing stock situated throughout Emerald Isle’s jurisdiction is fairly new. Approximately 77% of homes located in Town have been built since 1980. This housing growth is comparable to other growth indicators showing that rapid development expansion followed the Town’s expansion of infrastructure and other central municipal services. The growth since 1980 is also in line with the other towns being utilized for comparison. Since 1980, 69% of homes have been built in Oak Island, while only 52% were built over this same period in Atlantic Beach. This situation can be attributed to the fact that Atlantic Beach was established in 1937.

**Table 5. Year Structure Built, 2014**

Year Built	Emerald Isle		Atlantic Beach		Oak Island	
	Number	% of Total	Number	% of Total	Number	% of Total
2010 or later	159	2.3%	0	0.0%	38	0.4%
2000 to 2009	945	13.8%	435	8.7%	2,587	29.8%
1990 to 1999	1,979	29.0%	635	12.7%	1,670	19.2%
1980 to 1989	2,183	32.0%	1,553	31.0%	1,704	19.6%
1970 to 1979	1,174	17.2%	1,228	24.5%	1,098	12.7%
1960 to 1969	275	4.0%	588	11.7%	1,092	12.6%
1950 to 1959	101	1.5%	391	7.8%	416	4.8%
1940 to 1949	10	0.1%	116	2.3%	49	0.6%
1939 or earlier	7	0.1%	68	1.4%	25	0.3%

Source: US Census Bureau and Emerald Isle Town Planner.

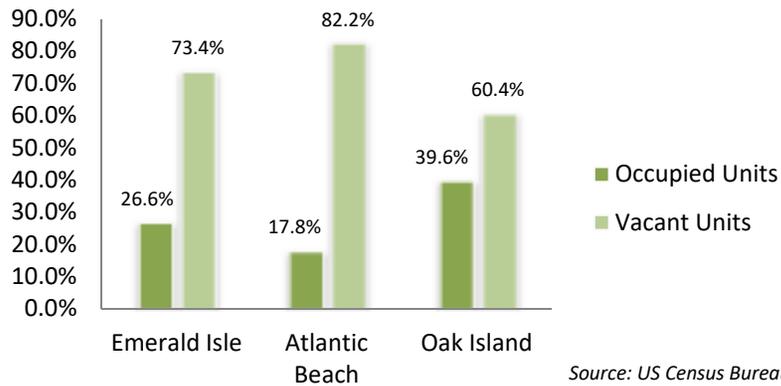
**Housing Unit by Tenure**

Of the approximately 6,711 housing units in Emerald Isle’s corporate limits, nearly 75% (4,925) are considered vacant by the US Census Bureau. However, 3,935 of these units are primarily used as second

homes or vacation rental units. The remaining housing units (1,786) are either owner-occupied or renter-occupied.

Emerald Isle has a slightly lower percentage of occupied housing than Oak Island (39.6%), while maintaining a slightly higher percentage than Atlantic Beach (17.8%).

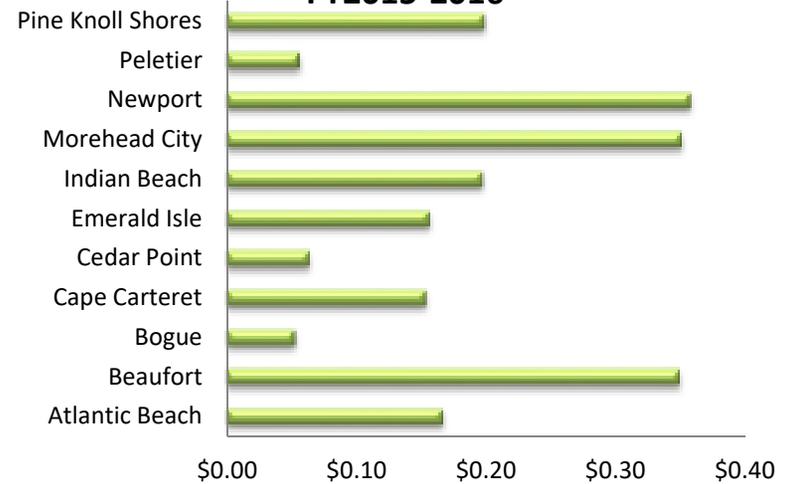
**Occupancy Status, 2014**



**Property Tax Rates**

For second homeowners, property tax rates can be a deterrent to investment, purchase, or construction of vacation units. Property tax rates are based on the total appraised value of land and buildings per \$100 of value. For incorporated municipalities, the property tax rate includes the base county rate for which the town or city is located. The average property tax rate for Carteret County municipalities is approximately \$0.19 per \$100 of valuation. The property tax rate in Emerald Isle is currently \$0.155 per \$100 valuation, with \$0.14 for general services and \$0.015 for beach nourishment. The Town’s property tax rate has consistently been the second lowest of the 21 oceanfront towns in North Carolina.

**Property Tax Rates Per \$100 Valuation, FY2015-2016**



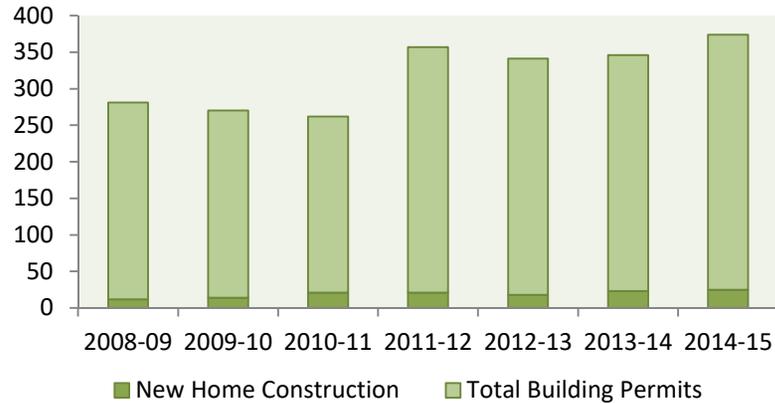
Source: Carteret County Tax Dept.

**Residential Building Permit Activity**

Residential building permit activity has begun to rebound from the low point experienced subsequent to the 2008 housing recession. The following graph presents permit activity for two purposes. One factor looks at all building permits issued regardless of the type of work being conducted, while the second factor defines the number of new single-family residential structures being built annually throughout the Town’s jurisdiction. As noted, the Town is seeing roughly 25 new homes built each fiscal year. Additionally, it should be noted that this figure appears to be slightly increasing on an annual basis.



### Building Permit Activity



Source: US Census Bureau

### Median Home Value

In 2014, the median home value in Emerald Isle was \$376,800. This median home value is approximately 60% higher than that of the state overall. Oak Island and Atlantic Beach, both barrier island communities, have a slightly lower but similar median home value to that of Emerald Isle. Home values are typically higher in coastal communities than in mainland communities due to the presence of large vacation homes in close proximity to the water.

Table 6. Median Home Value, 2014

Municipality	Number
Emerald Isle	\$376,800
Atlantic Beach	\$262,900
Oak Island	\$254,900

Source: US Census Bureau.

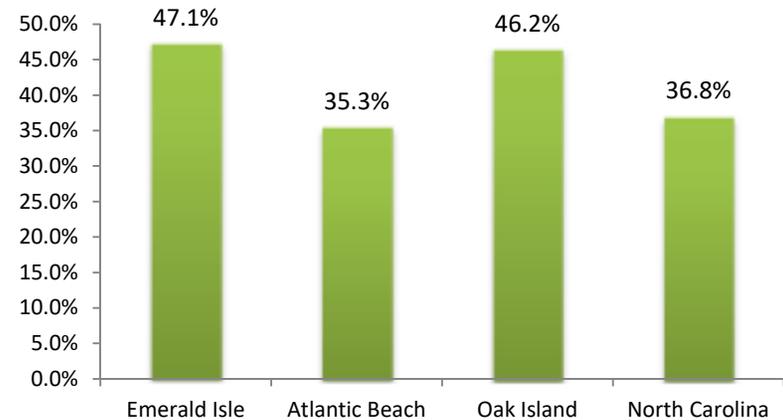
### ECONOMIC DATA

Data related to Emerald Isle’s local economy is included on the following pages. Information detailing the labor force, employment by industry, and household income is provided.

#### Labor Force

According to Census data, more than 47% of Emerald Isle’s year-round residents are not considered part of the labor force. This category consists mainly of students, homemakers, retirees, seasonal workers, and people performing incidental unpaid family work (less than 15 hours a week). Emerald Isle has a higher percentage of individuals not considered part of the labor force than does North Carolina and the comparison beach communities of Oak Island and Atlantic Beach.

#### % of Persons Over 16 Years Not in Labor Force



Source: US Census Bureau

### Employment by Industry

In Emerald Isle, the education and health services industry provides the greatest percentage of employment to residents. Nearly 18% of employed year-round residents work in the education and health services industry. Across the state, the education and health services industry accounts for a similar percentage of the employed persons – with 23.6% of the total. Other industries employing the Town’s workers include professional, scientific, management, and administrative and waste management services; and, not surprising for a beach community, finance and insurance, and real estate and rentals.

**Table 7. Emerald Isle Employment by Industry, 2014**

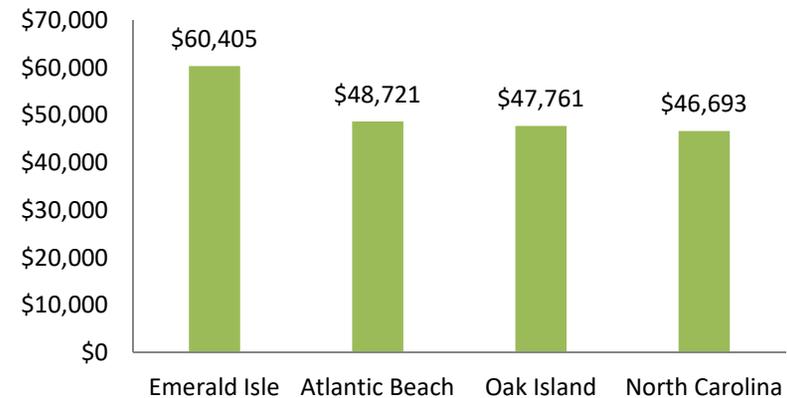
Industry	% of Employed Population Over 16 Years
Agriculture, Forestry, Fishing and Hunting, Mining	1.2%
Construction	7.9%
Manufacturing	5.6%
Wholesale Trade	2.7%
Retail Trade	11.6%
Transportation and Warehousing, and Utilities	1.7%
Information	1.0%
Finance and Insurance, and Real Estate and Rentals	13.5%
Professional, Scientific, Management, and Administrative and Waste Management Services	16.2%
Educational Services, and Health Care and Social Assistance	17.9%
Arts, Entertainment, and Recreation, and Accommodation and Food Services	9.8%
Other Services, Except Public Administration	1.0%
Public Administration	9.8%

Source: US Census Bureau.

### Income

For demographic purposes, income figures are calculated per household by the US Census Bureau. This figure includes the combined incomes of all people sharing a particular household or place of residence. Median household income in Emerald Isle (\$60,405) is substantially higher than the comparison communities of Oak Island and Atlantic Beach, as well as the State overall.

#### Median Household Income



Source: US Census Bureau

### SUMMARY

#### Population

- Between the years 1980 and 1990, Emerald Isle's population increased significantly at a rate of 175%.
- The Emerald Isle population has grown at a rate of 5.4% since development of the 2004 CAMA Land Use Plan.
- According to plan estimates, the peak weekly seasonal population for Emerald Isle is 39,789 persons.
- The median age in Emerald Isle is 52.5 years which is much higher than the state's median age of 37.8 years.
- Approximately 39% of Emerald Isle residents have either an Associate's Degree or Bachelor's Degree.

#### Housing

- The number of single-family homes within Emerald Isle has increased by 715 units since the 2000 Census.
- Approximately 77% of homes within Emerald Isle have been built since 1980.
- Roughly 75% of the Town's 6,711 residential units are considered vacant by the US Census Bureau. However, 3,935 of these units are primarily used as second homes or vacation rental units.
- The median household value in Emerald Isle is \$376,800.

#### Economic Data

- Approximately 47% of Emerald Isle's residents are not considered active in the workforce compared to 36.8% for the state overall.
- The single largest employment industry for Emerald Isle residents is the education and health services industry.

## **Section 3. Existing Conditions**

## INTRODUCTION

Sound land development policies require a thorough understanding of the existing natural systems, land use patterns, transportation networks, and supporting facilities and services. The following existing conditions section provides information and details pertaining to each of these factors for the Town of Emerald Isle.

## NATURAL SYSTEMS

### Climate

Emerald Isle has a year-round temperate climate that appeals to both visitors and residents alike. The moderate climate was identified as one of the primary reasons stakeholders interviewed through this planning process relocated to Emerald Isle. Monthly average temperatures range from 89 degrees Fahrenheit (F) in July to 55 degrees F in January. Other climate statistics include the following:

- Spring temperature averages 72 degrees F.
- Summer temperature averages 87 degrees F.
- Fall temperature averages 82 degrees F.
- Record low = 3 degrees F. (December 1989)
- Record high = 101 degrees F. (July 1965)

The town averages 56.6 inches of precipitation per year.

### Geography and Topography

Emerald Isle is located along North Carolina's chain of barrier islands referred to as the "Crystal Coast." Communities located in this region of the state are united by their proximity to the Atlantic Ocean and proximity to the estuarine sounds located interior to the area. Emerald Isle is composed of two unique ecosystems including the barrier island

ecosystem and estuary ecosystem, which is characterized by a mix of poor and well drained conditions. As noted, Emerald Isle provides a unique estuarine environment with Bogue Sound located immediately to the north of the barrier island.



Barrier Island Ecosystem *Image Source: Google Maps.*



Estuary Ecosystem *Image Source: Google Maps.*



### Flood Zones

Approximately 45% of Emerald Isle’s corporate limits area is impacted by a Special Flood Hazard Area (SFHA). An SFHA is defined as a land area with a greater than 1% chance per year of flooding and is also known as a “floodplain.” Special Flood Hazard Areas are indicated on Flood Insurance Rate Maps (FIRMs), which are considered the most reliable and consistent source for delineating SFHAs and are the source used to determine whether or not the purchase of flood insurance is mandatory for developed properties with a mortgage. SFHAs are broken into “AE” zones and “VE” zones. “AE” zones are areas subject to risk of flooding by standing or relatively static flood waters, while “VE” zones are areas subject to wave action. Properties not within an SFHA fall within an area in which there is a 0.2% annual chance of flooding, also known as the “500-year floodplain.” Land bordering the Atlantic Ocean is most susceptible to wave inundation, whereas land bordering estuarine areas is most susceptible to flooding/rising waters. Approximately 20% of the Town’s planning jurisdiction is impacted by the AE SFHA, while 15% is impacted by the VE zone. The geographic location of each flood hazard area is displayed on Map 2.

Type	Acres	% of Town Acres
0.2% Annual Chance Flood Hazard	353.62	10.9%
AE	623.93	19.3%
VE	493.97	15.2%
<b>Total</b>	<b>1,471.52</b>	<b>45.4%</b>

Source: Federal Emergency Management Agency.

The FIRM data used in the preparation of this plan is currently in draft form. The draft data was released on June 30, 2016, and will be under review until late 2017. Based on initial staff review, the Town anticipates that changes to the draft data will be minimal, and that the

information made available on June 30<sup>th</sup> will be suitable for use during development of this plan update.

### Storm Surge Inundation

Maps 3 and 4 display areas of Emerald Isle that may be impacted by a hurricane-generated storm surge based on the SLOSH (Sea, Land, and Overland Surges from Hurricanes) model developed by the National Oceanic and Atmospheric Administration (NOAA), which computes storm surge heights from tropical cyclones, such as hurricanes. The SLOSH model estimates the extent of storm surge inundation for “fast-moving” storms (forward velocity greater than 15 miles per hour) and for “slow-moving” storms (forward velocity less than 15 miles per hour).

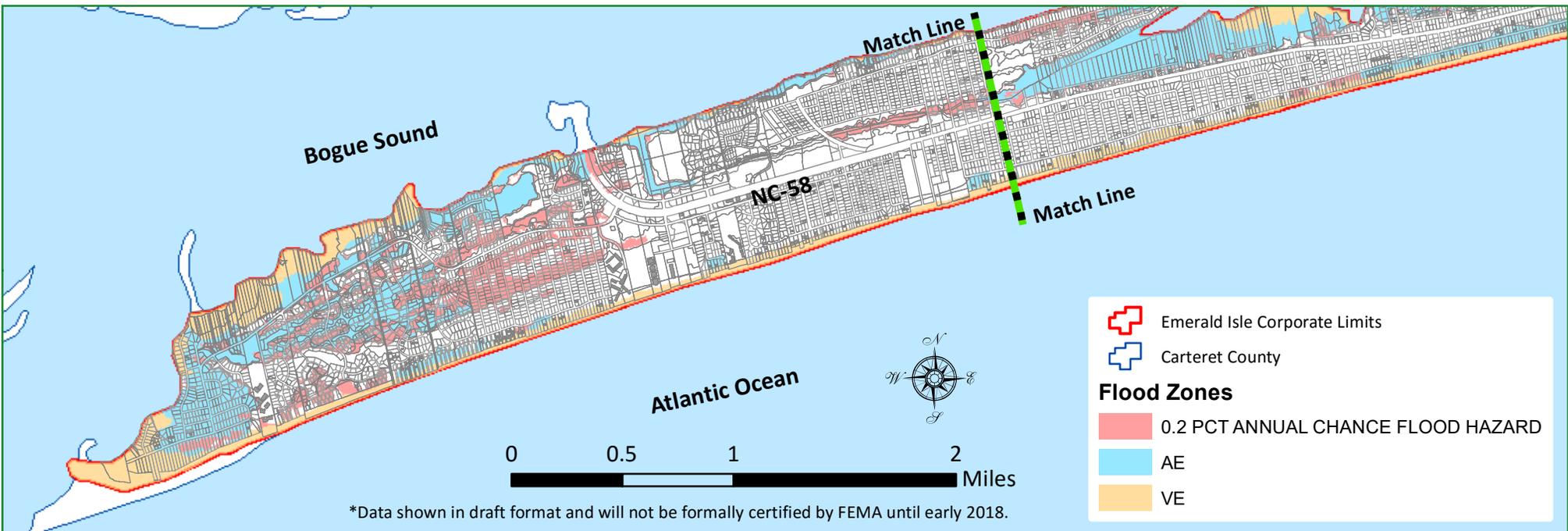
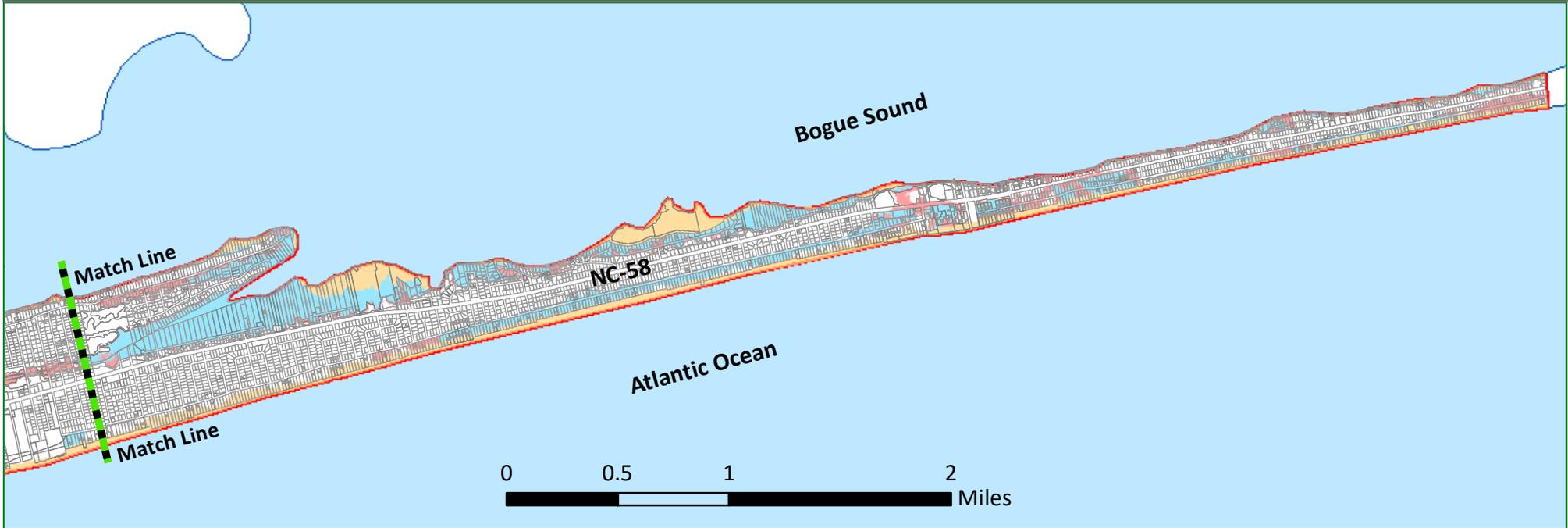
Fast Moving Storm		
Category	Acres	% of Town Acres
Category 1 & 2	980.19	30.24%
Category 3	1,831.77	56.51%
Category 4 & 5	2,631.13	81.16%
Slow Moving Storm		
Category	Acres	% of Town Acres
Category 1 & 2	736.48	22.72%
Category 3	1,108.70	34.20%
Category 4 & 5	1,816.30	56.03%

Source: Federal Emergency Management Agency.

Storm surge inundation from a “fast-moving” storm would result in the greatest potential damage to property in Emerald Isle. Over 50% of the Town would be impacted by a fast-moving Category 3 hurricane.

In addition to these defined flood hazard areas, there are several stormwater “hot spots” in the Town’s jurisdiction. Flooding in these areas generally results in a large volume of rain over a short period of time where the Town’s stormwater drainage system is inadequate.

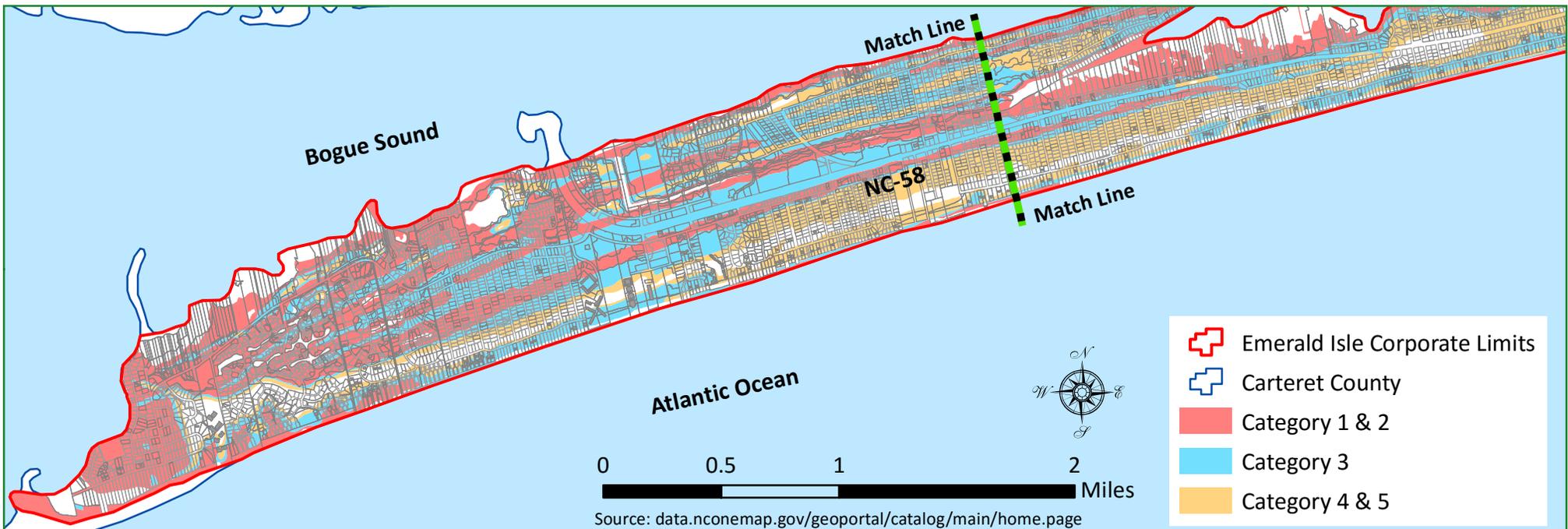
# MAP 2. FLOOD HAZARD AREAS



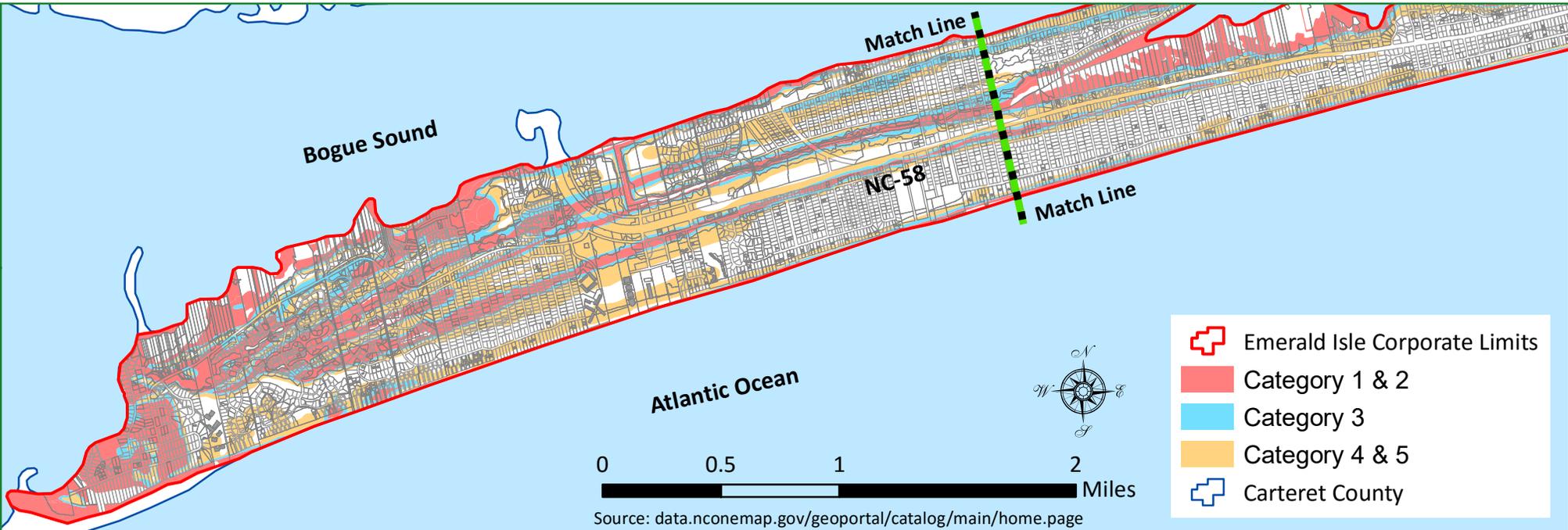
	Emerald Isle Corporate Limits
	Carteret County
<b>Flood Zones</b>	
	0.2 PCT ANNUAL CHANCE FLOOD HAZARD
	AE
	VE

\*Data shown in draft format and will not be formally certified by FEMA until early 2018.

# MAP 3. FAST MOVING SLOSH



# MAP 4. SLOW MOVING SLOSH





### Hazard Mitigation and Preparation

Emerald Isle falls under the jurisdiction of the Pamlico Sound Regional Hazard Mitigation Plan. This plan involves the participation of Beaufort, Carteret, Craven, Hyde, and Pamlico Counties. The plan identifies existing land use patterns in relation to the existing built environment, including what measures should be taken to reduce the risk of life and property throughout the Region as a result of natural hazard activity. Development and update of this plan is a requirement imposed by both the Federal (Disaster Mitigation Act of 2000) and State (NC Senate Bill 300) governments. The Pamlico Sound Regional Hazard Mitigation Plan was approved by FEMA on June 3, 2015, and was adopted by the Emerald Isle Board of Commissioners on June 9, 2015.

The full plan is available for review at the Emerald Isle Planning & Inspections office, or on the Town’s website. Additionally, the mitigation strategies developed by Carteret County (which includes the Town of Emerald Isle) through this process have been provided in Appendix B.

### Soils

According to information from the Carteret County Soils Survey, the soils in Emerald Isle, in some cases, provide limitations for the density of development that is possible without using an alternative to the septic tank or special septic tank designs. There are four different limitations which may exist:

- Poor filter
- Poor filter and excessive slope
- Subject to flooding and poor filter
- Wet and poor filter

However, the actual determination of the soil’s ability to support a septic tank must be investigated on a lot-by-lot basis. According to the Carteret County Health Department, all existing vacant lots within the Town of Emerald Isle will accommodate a septic tank; however, it should be noted that the cost of these systems will vary greatly depending on individual lot statistics. Refer to Appendix \_\_\_ for a summary of soil types throughout Emerald Isle and their respective limitations relating to suitability for development. The issue of sewer service delivery is discussed further in the Community Facilities and Future Demand/Projections sections of the Plan.

### Surface Waters

Each stream mile of water in North Carolina is evaluated and rated by the NC Division of Water Resources (formerly the Division of Water Quality). The classifications are based upon the existing or contemplated best usage of the various streams and segments of streams within a basin, as determined through studies, evaluations, and comments received at public hearings. The state water classification system is summarized in Table 10.

PRIMARY FRESHWATER AND SALTWATER CLASSIFICATIONS*	
Class	Best Uses
C and SC	Aquatic life propagation/protection and secondary recreation
B and SB	Primary recreation and Class C uses
SA	Waters classified for commercial shellfish harvesting
WS	<i>Water Supply Watershed.</i> There are five WS classes ranging from WS-I through WS-V. WS classifications are assigned to watersheds based on land use characteristics of the area. Each water supply classification has a set of management strategies to protect the surface water supply. WS-I provides the highest level of protection and WS-V provides the least protection. A Critical Area (CA) designation is also listed for watershed areas within a half-mile and draining to the water supply intake or reservoir where an intake is located.

SUPPLEMENTAL CLASSIFICATIONS	
Sw	<i>Swamp Waters:</i> Recognizes waters that will naturally be more acidic (have lower pH values) and have lower levels of dissolved oxygen.
Tr	<i>Trout Waters:</i> Provides protection to freshwaters for natural trout propagation and survival of stocked trout.
HQW	<i>High Quality Waters:</i> Waters possessing special qualities including excellent water quality, Native or Special Native Trout Waters, Critical habitat areas, or WS-I and WS-II water supplies
ORW	<i>Outstanding Resource Waters:</i> Unique and special surface waters that are unimpacted by pollution and have some outstanding resource values.
NSW	<i>Nutrient Sensitive Waters:</i> Areas with water quality problems associated with excessive plant growth resulting from nutrient enrichment.

\*Primary classifications beginning with an "S" are assigned to saltwaters.  
Source: NC Department of Environmental Quality.

The Emerald Isle water classifications are provided in Table 11. See Map 5 for their approximate locations. There are no water supply watersheds or wellhead protection areas in Emerald Isle.

Waterbody	Location	Classification
White Oak River	From Hunter Creek to the Atlantic Ocean	SA, HQW
Atlantic Ocean	All waters within the Atlantic Ocean bordering Emerald Isle	SB
Bogue Sound	From a line running from the eastern mouth of Bogue Inlet to SR 1117 on the mainland	SA, ORW
Archer Creek	At each end near Bogue Sound	SA, ORW

Source: NC Department of Environmental Quality.

Under section 303(d) of the Clean Water Act, states, territories, and authorized tribes (included in the term State here) are required to submit lists of impaired waters. These are waters that are too polluted or otherwise degraded to meet water quality standards.

There are currently three waterbodies in Emerald Isle’s planning jurisdiction which are identified on the 303(d) list: Bogue Sound (including the Intracoastal Waterway), Archer Creek (Piney Creek), and the Atlantic Ocean from Ocean Drive to Seagull Road. In addition, non-point source surface runoff is not a significant contributor to local or regional water quality issues.

**North Carolina Water Quality Basics**

*What Are Surface Water Classifications?*

Surface Water Classifications are designations applied to surface water bodies, such as water streams, rivers and lakes, which define the best uses to be protected within these waters (for example, swimming, fishing, drinking water supply) and carry with them an associated set of water quality standards to protect those uses. Surface water classifications are one tool that state and federal agencies use to manage and protect all streams, rivers, lakes, and other surface waters in North Carolina. Classifications and their associated protection rules may be designed to protect water quality, fish and wildlife, the free-flowing nature of a stream or river, or other special characteristics.

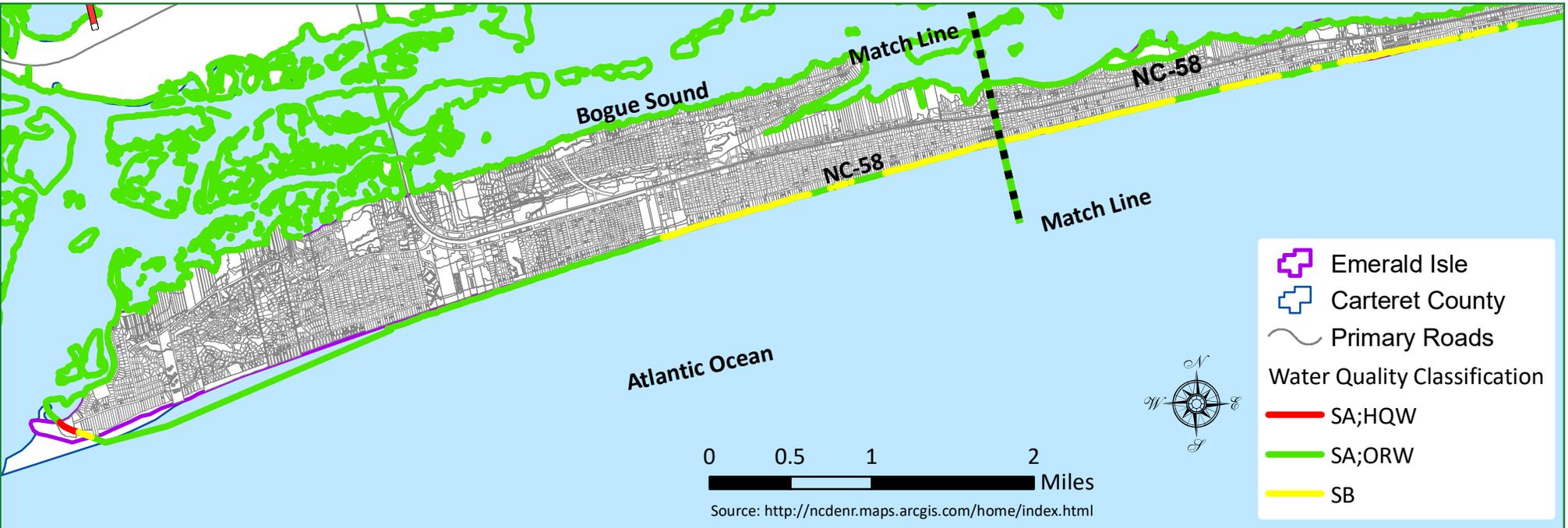
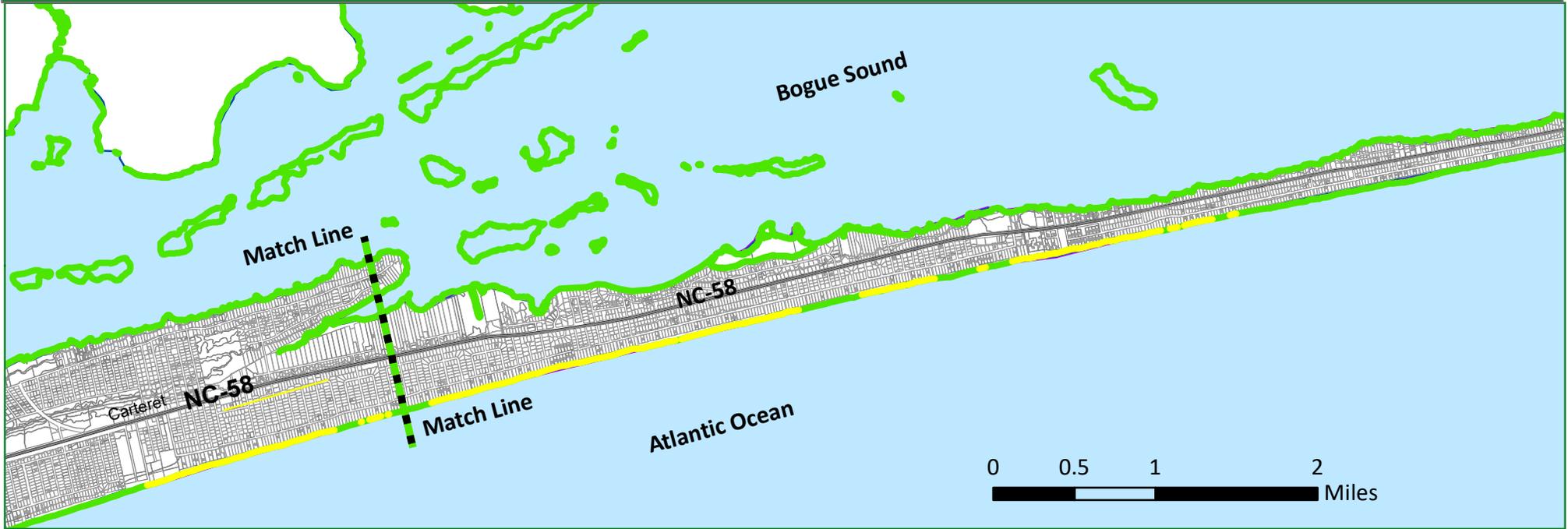
*How Do They Affect Me?*

Before you buy property, plan a new development project, construct a new road or undertake other land use activities, you should check with local, state, and federal agencies about the assigned surface water classification for the waterbody on your property. Many of the newer classifications, especially those designed to protect drinking water supplies and certain high quality waters, have protection rules which regulate some land or disturbance and other human activities.

*Why Do They Sometimes Overlay?*

Many streams, rivers, and lakes may have several classifications applied to the same area. This situation is because surface waters are classified to protect different uses or special characteristics of the waterbody. For example, a stream or specific stream segment may be classified as Class WS-III Tr HWQ by the NC Division of Water Resources (DWR). This protects it as a drinking water supply (WS-III), as Trout Waters (Tr), and as High Quality Waters (HQW). The stream segments upstream or downstream may have different classifications based on other water uses or stream characteristics.

# MAP 5. WATER QUALITY



### North Carolina Water Quality Basics (continued)

#### *Stream's Classification?*

DWR classifies all surface waters. A waterbody's classification may change at the request of a local government or citizen. DWR reviews each request for a reclassification and conducts an assessment of the waterbody to determine the appropriateness of the reclassification. DWR also conducts periodic waterbody assessments which may result in a recommendation to reclassify the waterbody. In order for a waterbody to be reclassified it must proceed through the rule-making process.

### Areas of Environmental Concern

The shorelines within the Town of Emerald Isle fall under the jurisdiction of the North Carolina Coastal Area Management Act (CAMA). CAMA establishes "Areas of Environmental Concern" (AECs) as the foundation of the Coastal Resources Commission's permitting program for coastal development. An AEC is an area of natural importance; it may be easily destroyed by erosion or flooding, or it may have environmental, social, economic, or aesthetic values that make it valuable.

The Coastal Resources Commission designates areas as AECs to protect them from uncontrolled development that may cause irreversible damage to property, public health or the environment, thereby diminishing their value to the entire state. Statewide, AECs cover almost all coastal waters and less than 3% of the land in the 20 coastal counties.

Fragile areas are those areas that are not explicitly defined as AECs but that could cause significant environmental damage or other diminution of quality of life if not managed. These include wetlands, natural heritage areas, areas containing endangered species, prime wildlife habitats, or maritime forests. The Town works diligently to manage

development in a manner that will minimize adverse impacts on the Town's natural resources. Currently, there are no environmentally fragile or natural resource areas whose functions have been impacted by current growth and development. Additionally, the Town's land use plan and zoning regulations define development patterns and land use types that limit development within environmentally sensitive areas, thus limiting incompatible development.

#### *Estuarine Waters and Estuarine Shorelines (AEC)*

An "estuary" can be defined as "a semi-enclosed coastal body of water which has a free connection to the open sea and within which sea water is measurably diluted with fresh water derived from land drainage." Estuaries basically serve as transition zones between fresh and salt water and are protected from the full force of ocean wind and waves by barrier islands, mudflats, and/or sand.

For regulatory purposes, the inland, or upstream, boundary of estuarine waters is the same line used to separate the jurisdictions of the Division of Marine Fisheries and the Wildlife Resources Commission. However, many of the fish and shellfish that spend parts of their lives in estuaries move between the "official" estuarine and inland waters.

Estuarine shorelines are land areas leeward of mean high tide that are immediately adjacent to or bordering estuarine waters. These areas support the ecological function of estuaries and are highly vulnerable to erosion caused by wind or water and to damage caused by development.

Under CAMA rules, all lands leeward from the mean high water mark are classified as estuarine shorelines and are subject to CAMA development regulations. No domestic discharges are permitted in these waters. Additionally, CAMA AEC setback factors for estuarine shorelines are enforced for all new development. The minimum setback for new construction is 30 feet from the mean high water mark.

Estuarine waters are situated adjacent to the northern shoreline of Emerald Isle's corporate limits, including waters of the Bogue Sound and Archers Creek.

### *Public Trust Areas – Waters and Beaches*

The North Carolina Division of Coastal Management (DCM) defines "Public Trust Areas" as the coastal waters and submerged lands that every North Carolinian has the right to use for activities such as boating, swimming, or fishing. These areas often overlap with estuarine waters, but they also include many inland fishing waters. The following lands and waters are considered public trust areas:

all waters of the Atlantic Ocean and the lands underneath, from the normal high water mark on shore to the state's official boundary three miles offshore; all navigable natural water bodies and the lands underneath, to the normal high watermark on shore (a body of water is considered navigable if you can float a canoe in it). This definition does not include privately owned lakes where the public does not have access rights; all waters 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. Although public trust areas must be delineated by on-site analysis, all submerged lands adjacent to Emerald Isle along the Bogue Sound shoreline and the Atlantic Ocean should be considered public trust areas. Under CAMA regulations, all lands 30 feet leeward of public trust areas are subject to the restrictions for estuarine shoreline areas.

Additionally, NCGS 77-20 clarifies the public's right to use the full width of the State's ocean beaches, from the base of the dunes to the water, as outlined below:

(d) The public having made frequent, uninterrupted, and unobstructed use of the full width and breadth of the ocean beaches of this State from time immemorial, this section shall not be construed to impair the right of the people to the customary free use and enjoyment of the ocean beaches, which rights remain reserved to the people of this State under the common law and are a part of the common heritage of the State recognized by Article XIV, Section 5 of the Constitution of North Carolina. These public trust rights in the ocean beaches are established in the common law as interpreted and applied by the courts of this State.

(e) As used in this section, "ocean beaches" means the area adjacent to the ocean and ocean inlets that is subject to public trust rights. This area is in constant flux due to the action of wind, waves, tides, and storms and includes the wet sand area of the beach that is subject to regular flooding by tides and the dry sand area of the beach that is subject to occasional flooding by tides, including wind tides other than those resulting from a hurricane or tropical storm. The landward extent of the ocean beaches is established by the common law as interpreted and applied by the courts of this State. Natural indicators of the landward extent of the ocean beaches include, but are not limited to, the first line of stable, natural vegetation; the toe of the frontal dune; and the storm trash line.

This public right was affirmed by the NC Court of Appeals in a unanimous 2015 ruling in the case of *Nies v. Emerald Isle*.

### *Coastal Wetlands*

The Coastal Resources Commission rules define "Coastal Wetlands" as any marsh in the 20 coastal counties (including Carteret County and therefore, Emerald Isle) that regularly or occasionally floods by lunar or wind tides, and that includes one or more of the following ten (10) plant species:

- *Spartina alterniflora*: Salt Marsh (Smooth) Cordgrass
- *Juncus roemerianus*: Black Needlerush
- *Salicornia spp.*: Glasswort
- *Distichlis spicata*: Salt (or Spike) Grass
- *Limonium spp.*: Sea Lavender
- *Scirpus spp.*: Bulrush
- *Cladium jamaicense*: Sawgrass
- *Typha spp*: Cattail
- *Spartina patens*: Salt Meadow Grass
- *Spartina cynosuroides*: Salt Reed or Giant Cordgrass

Coastal wetlands provide significant environmental and economic benefits to the residents of Emerald Isle. They protect against flooding, help maintain water quality, provide habitat to wildlife, and serve as part of the estuarine system. In 2003, the Division of Coastal Management classified and mapped coastal wetlands based on an analysis of several existing data sets, including aerial photographs and satellite images of all coastal areas in North Carolina. Even though the presence of wetlands must be established by an on-site delineation and investigation of plants, DCM produced an excellent representation of wetlands in the Town, and throughout coastal North Carolina. According to the Coastal Wetlands Inventory, approximately 12.8% of the Town’s planning jurisdiction, or approximately 413 acres, are coastal wetlands (see Table 12 & Map 6).

**Table 12. Wetlands**

Type	Acres	% of Town Acres
Estuarine and Marine Deepwater	69.59	2.15%
Estuarine and Marine Wetland	310.02	9.56%
Freshwater Forested/Shrub Wetland	17.22	0.53%
Freshwater Pond	16.55	0.51%
<b>Total</b>	<b>413.38</b>	<b>12.8%</b>

Source: NC Department of Environmental Quality.

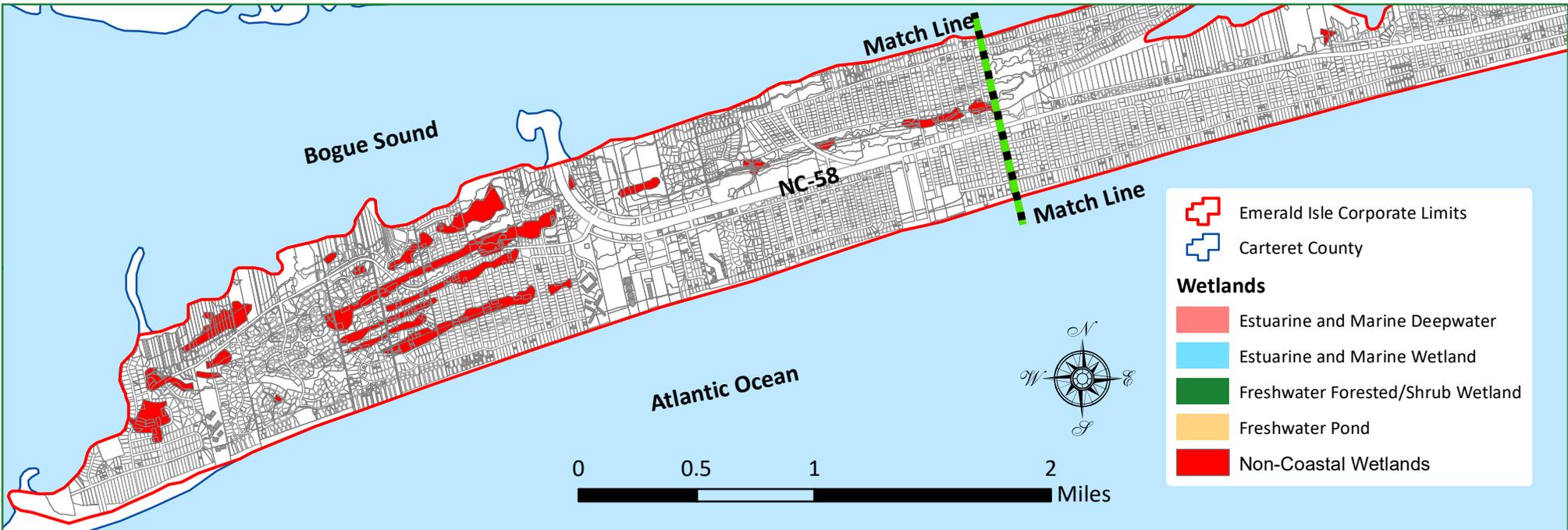
*Non-Coastal Wetlands*

The US Army Corps of Engineers defines wetlands as “those areas that are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. It is generally agreed that wetlands have significant values that support the unique lifestyle enjoyed by residents of the coastal area. These values include the following:

- *Water Storage.* Wetlands are able to temporarily store heavy rain, surface runoff, and floodwaters, and thereby, reduce downstream flooding.
- *Shoreline Stabilization.* Ground cover and roots of wetlands plants help hold soils in place and prevent sedimentation and nutrient transport.
- *Water Quality.* Wetlands plants can enhance water quality by removing pollutants from surface runoff.
- *Wildlife and Aquatic Life 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 rare and endangered plants. Wet pine savannas with the wet pine flat designation have special importance because they are known to provide favorable habitat for rare species and are themselves rare.
- *Recreation and Education.* The rich array of plants and animals supported by wetlands provide significant consumptive and non-consumptive use values – hunting and fishing, bird watching, canoeing, etc.

According to mapping developed by the NC Division of Coastal Management, Emerald Isle has three types of non-coastal wetlands that total approximately 150 acres. The following provides these wetland types: Freshwater Marsh, Maritime Forest (may be intact, cut-over, or cleared), and Pine Flats (may be intact, cut-over, or cleared). The Town’s non-coastal wetlands are shown on Map 6.

# MAP 6. WETLANDS



-  Emerald Isle Corporate Limits
  -  Carteret County
- Wetlands**
-  Estuarine and Marine Deepwater
  -  Estuarine and Marine Wetland
  -  Freshwater Forested/Shrub Wetland
  -  Freshwater Pond
  -  Non-Coastal Wetlands

### *Inlet Hazard Areas*

This AEC covers the land next to Bogue Inlet. The Inlet Hazard Area extends inland sufficient distance to encompass the area where the State reasonably expects the inlet to migrate. Development within inlet hazard AECs must comply with three key use standards: (1) comply with the setbacks for the ocean hazard area; (2) density for commercial and residential structures limited to no more than 3 units per acre; and (3) only residential structures of 4 units or less or commercial structures of 5,000 square feet or less are allowed.

### *Ocean Beaches/Shorelines and Areas of Excessive Erosion*

Ocean beaches and shorelines are lands consisting of unconsolidated soil materials (i.e., sand) that extend from the mean low water line landward to a point where either: (a) the growth of vegetation occurs; or (b) a distinct change in slope or elevation alters the configuration of the land form, whichever is farther landward. The entire southern boundary of the Town of Emerald Isle - approximately 12 miles of shoreline - is an ocean beach. This entire area constitutes an Ocean Hazard AEC as defined by CAMA. The Ocean Hazard AEC covers North Carolina's beaches and any other oceanfront lands that are subject to long-term erosion and significant shoreline changes. The seaward boundary of this AEC is the mean low water line. The landward limit of the AEC is measured from the first line of stable natural vegetation and is determined by adding a distance equal to 60 times the long-term, average annual erosion rate for that stretch of shoreline to the distance of erosion expected during a major storm.

The CRC updates long-term erosion rates every five to ten years, using aerial photographs to examine shoreline changes. General maps of erosion rates are available free from the Division of Coastal Management; detailed erosion rate maps are available for inspection at all Coastal Management field and local permitting offices. It should be

noted that there are no portions of Emerald Isle's shoreline currently experiencing significant shoreline erosion. Additionally, no public facilities or other structures are at risk due to significant shoreline erosion.

### *Beach Nourishment and Channel Maintenance (Bogue Inlet)*

Emerald Isle's oceanfront encompasses approximately 12 miles of the entire 25-mile length of Bogue Banks. The westernmost reach of the oceanfront is influenced by inlet dynamics associated with Bogue Inlet, which is one of three inlets in the State of North Carolina that has been open continuously since prior to 1585.

Erosion compromises the overall structural integrity of the dune and beach system, therefore impairing environmental resources, the Town's property values, recreational opportunities for all, and the Town and County's tourism economy. Accordingly, the Town has adopted a beach nourishment approach to mitigate erosive effects on the oceanfront, while maintaining the position of Bogue Inlet in its relatively equidistant location within the floodway separating Emerald Isle from Bear Island, the home of Hammock's Beach State Park. Since 2003, the town has leveraged over \$20 million to complement Federal, State, and other local financial sources, emplacing over 3,750,000 cubic yards of sand along the oceanfront at an approximate total cost of \$40 million. Bogue Inlet was re-positioned by the Town in 2005, and is included in the cubic yard and monetary totals provided above.

The Town, in partnership with Carteret County, is in the latter phases of completing the Bogue Banks Master Beach Nourishment Plan (Master Plan) which is a comprehensive, 5-decade nourishment program using objective parameters to gauge beach health and trigger future nourishment events for the entire 25-mile long island of Bogue Banks. The cornerstone of these planning and future monitoring

efforts consists of a dense surveying network incorporating 122 profiles spaced roughly 1,000 feet apart, where shoreline and beach volume measurements are obtained on an annual basis. The Master Plan also includes a “safe box” for Bogue Inlet whereby future channel repositioning efforts can be anticipated as the inlet migrates outside the boundaries of the box.

The Master Plan delineates all sources of sand to be utilized for beach nourishment over the next five decades and also includes the development of a parallel programmatic environmental document that will serve as the permitting vehicle to facilitate all elements of the Master Plan. The anticipated completion date for the Master Plan effort (engineering report, environmental document, and final permit decision) is 2017. From other practical standpoints, it is also anticipated that the Master Plan will satisfy: (1) the Town’s FEMA requirements to remain eligible for reimbursing the cost of replacing sand lost during a Federally-declared disaster; and (2) serve as the municipality’s 30-year nourishment program, which is a requirement to help communities retain static vegetation line exceptions that have been approved by the State of North Carolina.

The Master Plan also provides a Shore Protection expenditure blueprint for Emerald Isle. One half (50%) of the County’s occupancy tax collection (6% rate) is legislatively-mandated for the purpose of beach nourishment per S.L. 2013-223. It is anticipated that over the course of the 50-year life of the Master Plan, the County’s occupancy tax will generate enough revenue to fund 66% to 75% of all the nourishment and channel repositioning activities for Emerald Isle. Annually this effort leaves in excess of \$650,000 that needs to be generated by the Town, which is currently being achieved by a combination of a small special district property tax and a designated monetary transfer from the Town’s General Fund. It is anticipated that no additional levies or the encumbrance of any new debt will be required.

In addition to the locally initiated and funded Master Plan, the Town (also in partnership with Carteret County) recently received formal authorization from the US Congress for a Federal Shore Protection Project that is intended to provide periodic beach nourishment over the next 50 years. Under this Federal program, approximately 50% of future beach nourishment costs would be borne by the Federal government, and nourishment projects would be coordinated by the US Army Corps of Engineers. The recent Congressional authorization means that the project is not *eligible* for future Federal funding for beach nourishment, however, Federal budget challenges are likely to persist in the future and it will likely be very difficult, if not impossible, to secure the necessary Federal appropriations for the project. The Town will continue to diligently seek Federal appropriations in the future, but is prepared to implement the locally initiated and funded Master Plan with or without future Federal assistance.

### *Fragile Areas*

Fragile areas are not AECs but are “sensitive areas that could be damaged or destroyed easily by inappropriate or poorly planned development.” The inventory of fragile areas in Emerald Isle includes three types: Protected Lands that are controlled by the State or subject to easements or covenants that limit development; Natural Heritage Areas as identified by the NC Department of Natural and Cultural Resources; and Maritime Forests which are intact.

Protected Lands are areas dedicated to conservation and open space uses that are protected from development by regulation or by ownership by governments or non-profit organizations. The North Carolina Division of Coastal Management has identified these areas through the assistance of the NC Center for Geographic Information and Analysis (NCGIA). There are several sites designated as Protected Lands in Emerald Isle (see Map 7). The sites are comprised of state and Town-owned open space areas. Although these areas are protected

from development, they do not contain environmentally fragile areas, natural heritage areas, areas containing endangered species, or prime wildlife habitats. Additionally, other facilities, such as CAMA Public Access locations and town parks may be considered protected lands. These areas will be discussed further in the Community Facilities section of the plan.

Natural Heritage Program Natural Areas (NHNA) are areas containing ecologically significant natural communities or rare species. The North Carolina Natural Heritage Program of the NC Department of Natural and Cultural Resources identifies and helps facilitate the protection of these areas. Archers Creek is the only defined Natural Heritage area located in Emerald Isle's corporate limits (see Map 7). Archers Creek is a narrow saltwater marsh upland centrally located within the Town's planning jurisdiction.

Emerald Isle's Maritime Forests are an important natural resource that offers both opportunities and limitations for development. The definitions applied to maritime forests are rather broad: "Forests (that) have been development under the influence of salt spray and (that) are found on barrier islands or immediately adjacent to estuarine waters; ...dominated by oak, red cedar, holly, and pine trees and evergreen shrubs." These forested areas are often the most stable locations on barrier islands and they offer safe and reasonable areas for development. According to mapping provided by the NC Division of Coastal Management, there are 51 acres of intact maritime forest in Emerald Isle.

Appendix F provides a US Fish & Wildlife Services list of endangered/threatened species in Carteret County. Appendix G provides a NC Heritage Program list of plant species which exists in the County.

#### *Slopes in Excess of 12%*

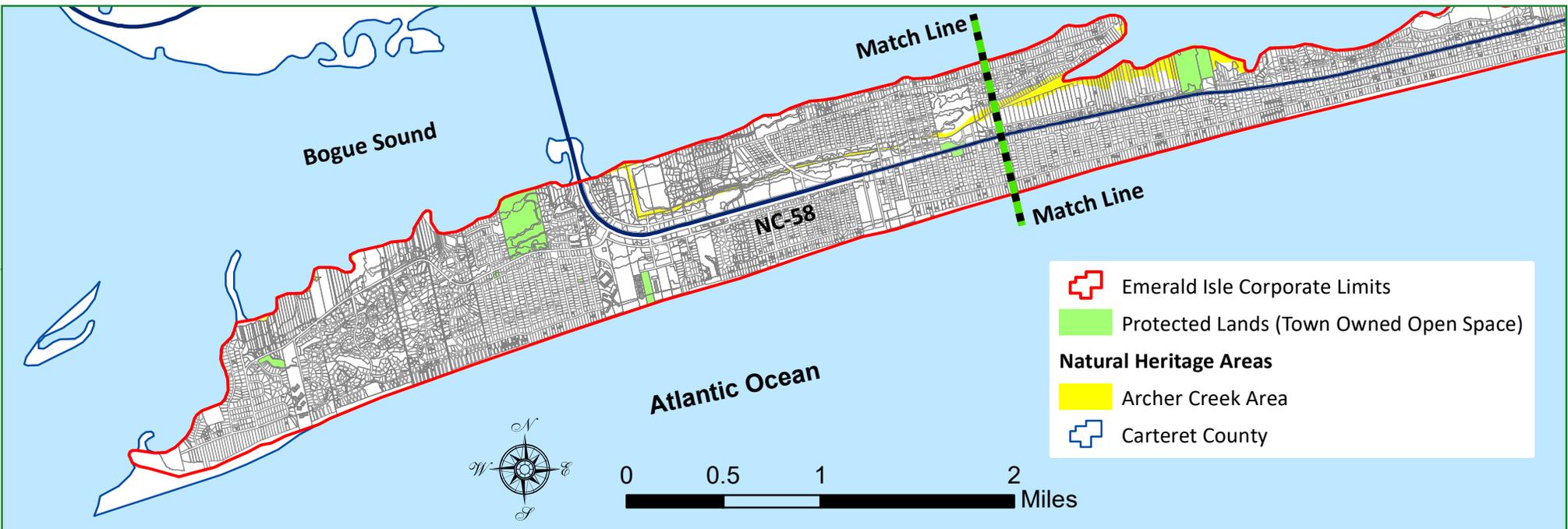
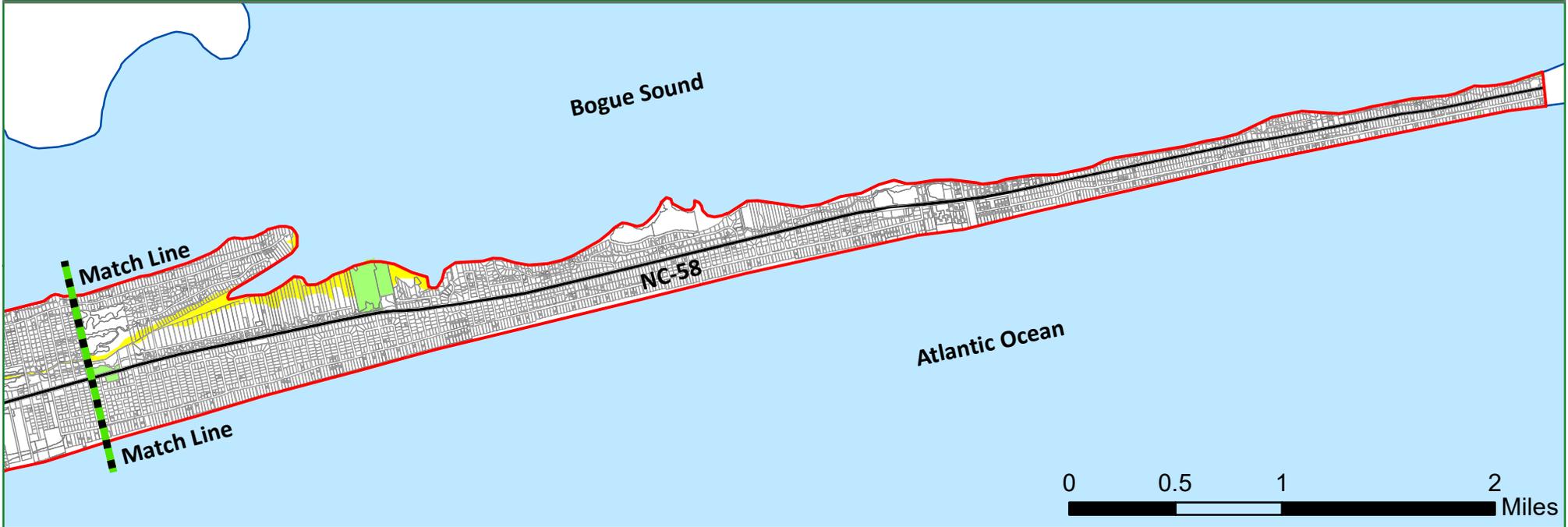
There are no slopes in excess of 12% located within Emerald Isle's corporate limits.

#### *Accident Potential Zone*

Accident Potential Zones (APZ) are "areas immediately beyond the ends of runways and along primary flight paths and are (potentially) subject to more aircraft accidents than other areas." There are two designations within the APZ that apply to land use uses and vacant parcels in Emerald Isle: APZ 1 areas "(possess) significant potential for accidents"; and APZ 2 areas "(have) measurable potential for accidents."

The APZ 1 covers a small area adjacent to the Bogue Banks shoreline from the Emerald Plantation area east to the vicinity of E. Marina Drive. The APZ 2 covers a much larger area that extends in a circular swath from Sound Drive, at about Emerald Circle, southeast to the ocean beach and then northeast to Piney Point.

# MAP 7. PROTECTED LAND/ NHP NATURAL AREAS



## Areas of Resource Potential

### *Regionally Significant Parks*

The discussion of parks and open space will be addressed in the Community Facilities section of the plan.

### *Marinas and Mooring Fields*

“Marinas” are defined as any publicly or privately owned dock, basin, or wet boat storage facility constructed to accommodate more than ten boats and providing any of the following services: permanent or transient docking spaces, dry storage, fueling facilities, haulout facilities, and repair service. Not included in this definition are facilities that only allow boat access or temporary docking and that do not include the services provided by marinas specified above.

Emerald Isle is served by the privately-owned Island Harbor Marina, which offers wet and dry slips for lease to the general public, but does not offer other services typically available at a traditional, full-service marina. Emerald Isle is also served by a public boating access facility (with no overnight docking facilities) with 4 boat launching ramps and parking for more than 120 vehicles.

A “freestanding mooring” is any means to attach a ship, boat, or other watercraft to a stationary underwater device, mooring buoy, buoyed anchor, or piling not associated with an existing or proposed pier, dock, or boathouse. When more than one freestanding mooring is used in the same general vicinity, it is known as a “mooring field.” CAMA has regulations for the safe siting and operation of moorings and mooring fields. There are currently no mooring fields in Emerald Isle.

### *Floating Homes or Structures*

A floating home or structure is any structure, not a boat, supported by means of flotation and designed to be used without a permanent

foundation which is used for human habitation or commerce. A structure is considered a floating home or structure if it is inhabited or used for commercial purposes for more than 30 days in any one location. A boat may be deemed a floating structure if its means of propulsion have been removed or rendered inoperative and it contains at least 200 square feet of living area. There are currently no floating homes within Emerald Isle’s corporate limits.

### *Primary Nursery Areas, Anadromous Fish Spawning Areas, Submerged Aquatic Vegetation, Shellfishing Waters*

Primary Nursery Areas, as defined by the Marine Fisheries Commission, are those areas in the estuarine system where initial post-larval development takes place. These areas are usually located in the uppermost sections of a system where populations are uniformly very early juveniles. The Division of Marine Fisheries is responsible for preserving, protecting and developing Primary Nursery Areas for commercially important finfish and shellfish. High productive values in the estuarine waters are the result of three essential processes: (1) circulation patterns caused by tidal energy, freshwater flow, and shallow depth; (2) nutrient trapping mechanisms; and (3) protection offered to many species. Important features of the estuary system are mud and sand flats, eel grass beds, salt marshes, submerged vegetation flats, clam and oyster beds, and important nursery areas. Piney Creek (Archers Creek) is a primary nursery area.

“Anadromous” fish are those that migrate up rivers (or into estuaries) from the sea to breed in freshwater. The NC Marine Fisheries Commission (MFC) defines anadromous fish spawning areas as those where evidence of spawning of anadromous fish has been documented by direct observation of spawning, capture of running trip females, or capture of eggs or early larvae. It should be noted that there are no anadromous fishing spawning areas located within Emerald Isle’s corporate limits.

Grasses that grow to the surface of—but do not emerge from—shallow water are called submerged aquatic vegetation (SAV). One of the most important ecosystem services of the shallow waters adjacent to the northern shoreline of Emerald Isle is to provide refuge in which small fish and shellfish can hide from larger finfish predators. The habitat value of shallow water is greatly enhanced when it has structure that provides additional cover, and the structure provided by SAV provides some of the greatest habitat value for many species. Map 8 provides locations of submerged aquatic vegetation.

The Shellfish Sanitation Section is responsible for monitoring and classifying coastal waters as to their suitability for shellfish harvesting for human consumption. Recommendations are made to the Division of Marine Fisheries to close those waters that have the potential for causing illness and opening those that are assured of having clean, healthy shellfish. Much of the “SA” waters along the estuarine shoreline are open to commercial shellfishing. Up-to-date information about open and closed shellfishing areas is posted daily on the NC Division of Marine Fisheries website. As this information is always evolving, current closure locations have not been included in the plan.

The White Oak River Basinwide Water Quality Plan, prepared by NC Division of Water Quality, shows the waters adjacent to Emerald Isle as fully supporting for aquatic life and primary and secondary recreation; partially supporting for fish consumption; and partially or non-supporting for shellfish harvesting. The only waters adjacent to Emerald Isle that are closed to shellfishing are Archers Creek (18 acres) and a 2-acre area around the Island Harbor Marina that is closed by statute. Temporary shellfish closures are not a significant issue for waters surrounding Emerald Isle. According to the Sanitary Survey for the period 1994-1999, prepared by the Shellfish Sanitation Section, there have been 35 temporary closures adjacent to the Town.

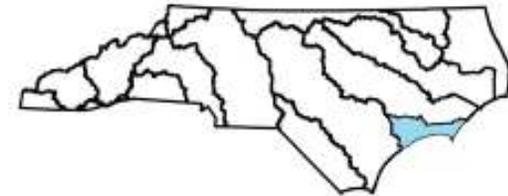
However, these closures were the result of high rainfall events or pre-emptive closures before hurricanes.

### Aquaculture

As defined under N.C. General Statute 106-758, aquaculture is the propagation and rearing of aquatic species in controlled or selected environments, including, but not limited to ocean ranching. There is no significant aquaculture in Emerald Isle.

### Water Quality

Basinwide water quality plans are prepared by the NC Division of Water Resources (DWR) for each of the seventeen major river basins in the state. Each basinwide plan is revised at five-year intervals. While these plans are prepared by the DWR, their implementation and the protection of water quality entails the coordinated efforts of many agencies, local governments, and stakeholders in the State. The Town of Emerald Isle lies within the White Oak River Basin.



General Location of the White Oak River Basin *Image Source: NC Department of Environmental Quality.*

The White Oak River basin lies entirely within the outer coastal plain of North Carolina. The name of the basin is a bit of a misnomer in that it includes four separate river systems: the New River and its tributaries in the southwestern section; the White Oak River and its tributaries; the Newport River and its tributaries; and the North River in the eastern section. The basin also includes Bogue, Back and Core Sounds as well as significant portions of the Intracoastal Waterway.

Emerald Isle is located in subbasin 03-05-03. This subbasin contains the center of Carteret County, extending from the Croatan National Forest to Beaufort and Beaufort Inlet. Most of this subbasin is estuarine with the Newport River as the only major source of freshwater. There are 74 stream miles, 34,445 estuarine acres and 25 miles of Atlantic coastline in this subbasin. Although there are impaired waterbodies within the subbasin, the majority of these waterbodies are not located in Emerald Isle (see page 3-7 for a listing of those waterbodies on the current 303(d) list).

With the exception of Newport, most of the development in this subbasin is along the coast. Morehead City, Newport and the communities along Bogue Banks experienced population increases, while Atlantic Beach and Beaufort population decreased between 1990 and 2000.

There are nine individual NPDES wastewater discharge permits in this subbasin with a total permitted flow of 3.95 MGD. The Town of Morehead City Wastewater Treatment Plant (WWTP), with a total permitted flow of 1.7 MGD holds the largest of these permits and discharges to Calico Creek. In 2005, five facilities were out of compliance with permit limits for a total of 101 violations resulting in issuing 18 Notices of Violation (NOV) and the remaining proceeded to enforcement. Previously, Beaufort and Morehead City WWTPs received NOV's and were then required to perform whole effluent toxicity (WET) testing. Significant toxicity issues have not occurred since 1999. As of 2004, there were 13 general stormwater permits and one individual stormwater permit. However, there are no stormwater permits or NPDES wastewater permits issued within the Town. It should be noted that there are no facilities generating point source runoff that pose a threat to water quality within Emerald Isle's corporate limits.

**Subbasin 03-05-03 at a Glance**

Land and Water Area

Total Area:	228 mi <sup>2</sup>
Land Area:	168 mi <sup>2</sup>
Water Area:	60 mi <sup>2</sup>

Land Cover (%)

Forest/Wetland:	59%
Surface Water:	26%
Urban:	4%
Cultivated Crop:	6.5%
Pasture/Managed Herbaceous:	4%

County

Carteret

Municipalities

Atlantic Beach, Beaufort, Bogue, Emerald Isle, Indian Beach, Morehead City, Newport, Pine Knoll Shores

Monitored Waterbody Statistics:

**Aquatic Life**

Total:	15.1 mi/5,988.1 ac
Total Supported:	5,847.9 ac
Total Impaired:	140.2 ac
Total Not Rated:	15.1 mi

**Recreation**

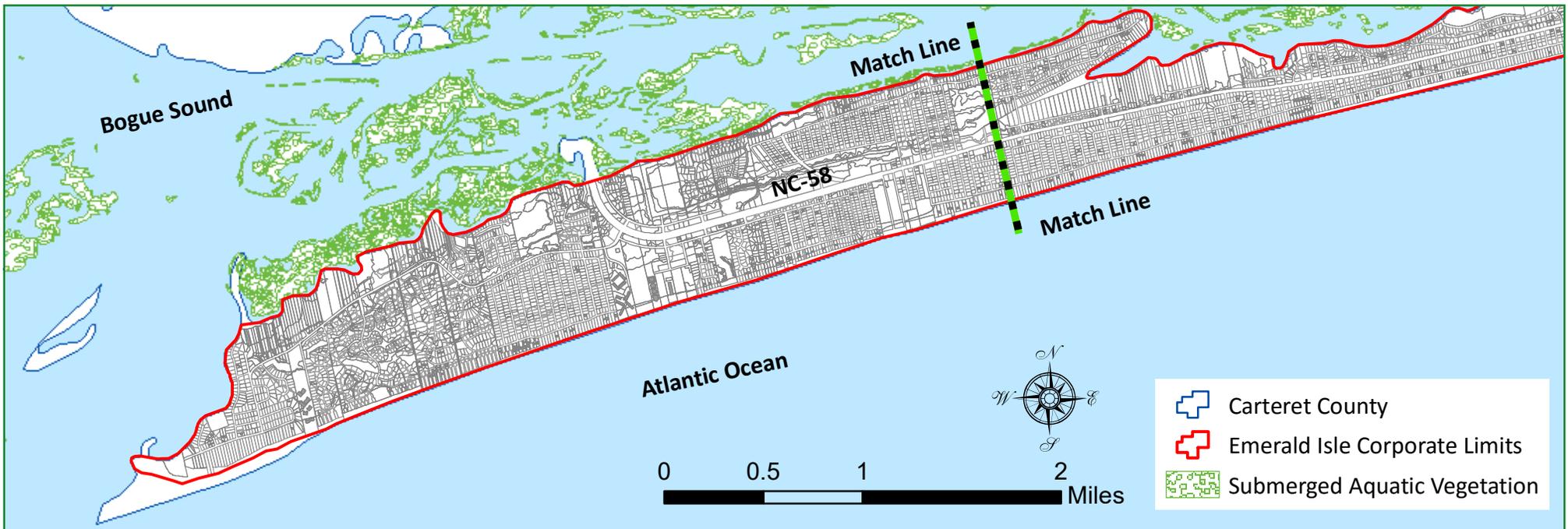
Total:	11.2 mi/17,912.9 ac
Total Supported:	11.2 mi/17,764.7 ac
Total Impaired:	148.1 ac

**Shellfish Harvesting**

Total:	5.2 mi/33,867.4 ac
Total Supported:	19,357.1 ac
Total Impaired:	5.2 mi/14,510.3 ac

*Source: 2007 White Oak River Basinwide Water Quality Plan.*

# MAP 8. SUBAQUATIC VEGETATION



## COMMUNITY FACILITIES

The following provides an overview of all Town-maintained facilities and services. These day-to-day operations are critical to sustaining the quality of life and security for which Emerald Isle is known. This summary relates to public facilities already in place and Town services that are currently being provided.

Future services and facilities based on anticipated need/demand will be addressed in Section 4, Future Demand/Projections.

### Health Care Resources

#### *Medical Facilities*

Carteret Health Care (CHC) located at 3500 Arendell Street in Morehead City, about 14 miles from the Emerald Isle, is the primary source of emergency and critical care for citizens of the Town. Some relevant information regarding CHC follows:



- Fifty-six active staff physicians, 45 consulting physicians, and 12 visiting/courtesy physicians cover a comprehensive range of specialties.
- A Cancer Care Center provides medical oncology for patients who require chemotherapy and a full-service radiation therapy center equipped with a state-of-the-art linear accelerator and simulator.
- Specialty outpatient clinics are offered at the hospital for neurology and autologous blood transfusions. Sophisticated

technologies provided include nuclear medicine, CT scanning, mobile lithotripsy, laser surgery, and laparoscopic surgery.

- The hospital has 117 beds with an average of 87 inpatients each day and performs approximately 400 surgeries each month. In addition, over 4,000 outpatient tests or treatments are provided each month.
- Approximately 23,000 patients are treated in the Emergency Department and over 570 babies are delivered annually in the Brady Birthing Center.
- The AllWell program, a collaboration between Carteret Health Care and the Carteret County Health Department, provides successful wellness programs for area employers. This division offers numerous community and industrial health and education programs.
- The Taylor Extended Care Facility provides skilled nursing services for residents who require long-term care. The facility accommodates 104 residents on Nelson's Bay.
- Home Health and Hospice are divisions of Carteret Health Care. These mergers have allowed outstanding continuity of care and assistance for patients as they move from hospital to home.

Major medical care is also available at Onslow Memorial Hospital, a 162-bed facility located in Jacksonville, North Carolina. The hospital is nationally accredited by The Joint Commission, and has over 100 doctors credentialed in over 25 specialty areas.



Within the Emerald Isle Town limits, there is only one medical practice, an urgent care clinic called Med First Urgent Care of Emerald Isle, NC. The facility is privately-owned and provides complete Family Practice Medicine and Primary Care services, either by

appointment or on a walk-in basis, as well as operating Urgent Care Clinics. Additionally, numerous primary care physicians can be found in Morehead City, Beaufort, and Swansboro.

#### *Carteret County Health Department*

Carteret County Health Department has served residents of the County since 1937. Funding for Health Department programs comes from the county, state, federal, and special grants. It is governed by a 20-member Consolidated Human Services Board appointed by the County Board of Commissioners. Carteret County Health Department provides a variety of preventive health care services, screenings, and information.



**Carteret County Health Department**  
*Image Source: Carteret County website.*

The following provides a listing of services and directives the Health Department is responsible for:

- Monitor health status and understand health issues facing the community;
- Protect residents from health problems and health hazards;
- Give people information they need to make healthy choices;

- Engage the community to identify and solve health problems;
- Develop local public health policies and plans;
- Enforce public health laws and regulations;
- Help people receive health services;
- Maintain a competent public health workforce;
- Evaluate and improve public health programs and interventions;
- Contribute to and apply evidence-based programs and best practices.

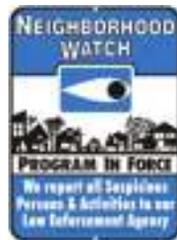
#### **Law Enforcement**

The Emerald Isle Police Department (EIPD) is a full-service law enforcement agency responsible for the enforcement of all laws and the investigation of any crimes within the town limits of Emerald Isle. The Department operates on two twelve-hour shifts running from 6:00 AM to 6:00 PM daily. The Department is comprised of 18 full-time sworn police officers, 1 full-time civilian support position, and 4 part-time customer service positions that are used during the peak season. The Department has 23 vehicles including several four-wheel drive and all-terrain vehicles utilized for monitoring oceanfront portions of the Town’s corporate limits.

One of the biggest challenges involving public safety throughout Emerald Isle is the drastic increase in population base during peak summer months. During this period, the Department initiates its annual Beach Management Program, which consists of multiple officers patrolling the beach strand and heavy traffic areas between the hours of 10 AM and 6 PM. The Department also maintains a part-time/reserve pool of officers for the purposes of addressing increased demand during summer months. On average, the frequency of calls for service doubles during this period.

Additionally, the Town operates an extremely successful Neighborhood Watch Program. Since the program's inception in 2014, the Neighborhood Watch program has achieved the following:

- The number of certified streets have increased from 1 to over 300;
- Crimes against persons have decreased by 25%;
- Crimes against property have decreased by 29%;
- Burglaries have decreased by 40%;
- Thefts have decreased by 34%;
- Property Damage has decreased by 22%;
- Monetary loss due to theft and fraud has decreased by 16%;
- and
- Overall, crime in Emerald Isle is down 37%.



**Emerald Isle Police Vehicle** *Image Source: Town of Emerald Isle website.*



**Emerald Isle EMS Station** *Image Source: HCP, Inc.*

### Fire Protection & Emergency Medical Services

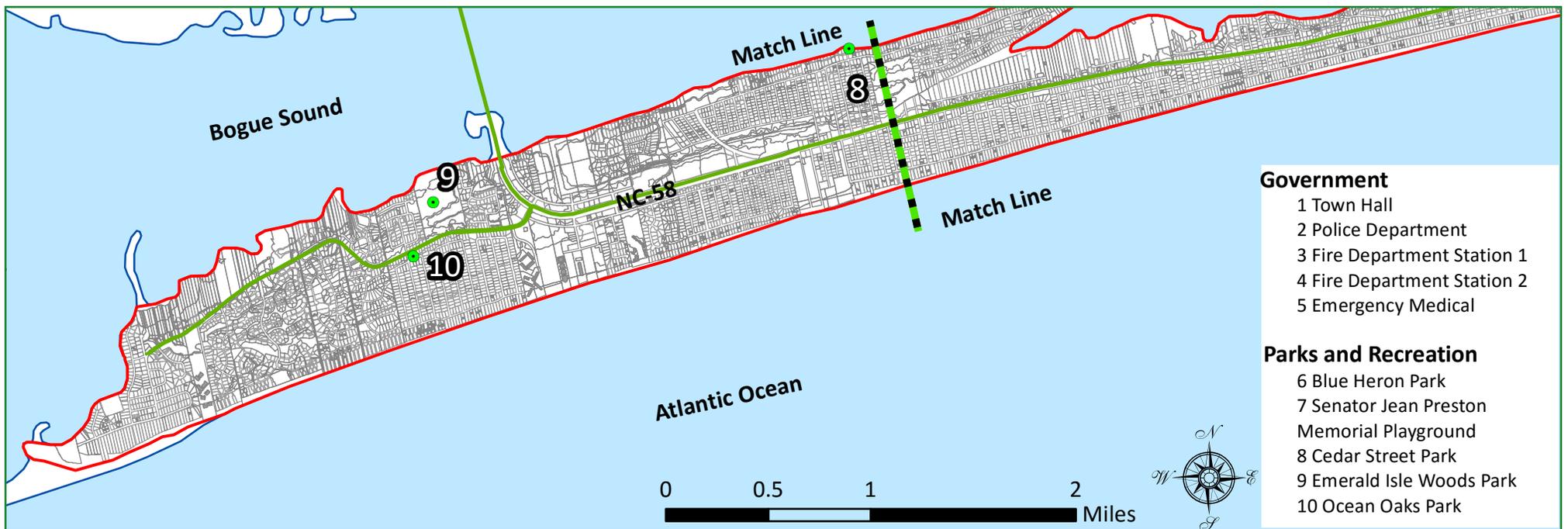
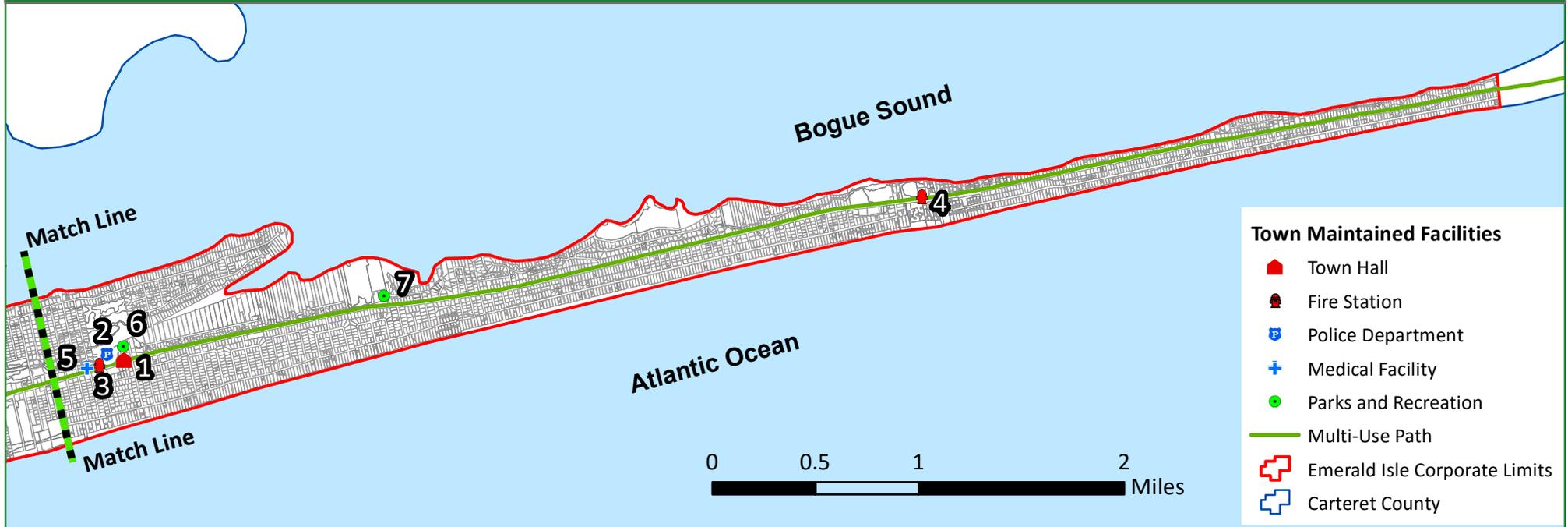
The Town of Emerald Isle maintains two municipal Fire Stations and an EMS Station which generally serve the eastern and western portions of Town. Fire Station #1 is located at 7516 Emerald Drive, Fire Station #2 is located at 2610 Emerald Drive, and the EMS Station is located at 7604 Emerald Drive (refer to Map 9 Town Maintained Facilities for specific locations). The Town owns and maintains three 1,250 gallons per minute pumper trucks, one ladder truck capable of responding to fires occurring in multi-story structures, two ambulances, and one Quick Response Vehicle (QRV).

On average, the Town's Fire Department has a response time of approximately five minutes and has been issued an Insurance Services Office (ISO) rating of four. ISO collects information on municipal fire-protection efforts in communities throughout the United States. In each of those communities, ISO analyzes the relevant data using a Fire Suppression Rating Schedule (FSRS). Then ISO assigns a Public Protection Classification from 1 to 10, with one being the best and ten being the worst rating possible. According to staff, the EMS Department maintains an average response time of two to four minutes.

In order to provide adequate response capabilities, the Town maintains the following public safety/EMS staffing:

- 14 full-time Fire Department personnel
- 11 part-time firefighters
- 10 volunteer firefighters
- 12 seasonal lifeguards
- 6 full-time EMS Department personnel
- 13 part-time EMS Department personnel

# MAP 9. TOWN MAINTAINED FACILITIES



## Emergency Management

The Town of Emerald Isle Fire, EMS, and Police Departments, in concert with Town Administration, work closely with the Carteret County Emergency Management Department to address threats from both natural and man-made hazards.

Carteret County Emergency Management is charged with maintaining a high level of preparedness, identifying vulnerabilities, effectively mitigating disasters, providing public education, responding to all-hazard emergency situations, and facilitating effective recovery efforts following any all-hazard incident.

## Parks, Recreation, and Open Space

### Public Access

Emerald Isle's public accesses and parks have a wealth of amenities ranging from picnic pavilions and kayak launches to volleyball courts and playgrounds. Emerald Isle currently has 67 locations that provide access to the beach and the sound. There are two types of access locations:

- **Local accesses** that primarily provide access for pedestrians and bicyclists from the immediate neighborhood;
- **Regional accesses** that includes a large number of parking spaces, bike racks, restrooms and bathhouse, and picnic area.

Local public access points are more informal, using easements and rights-of-way created in the subdivision of the island. These access points have signs identifying them as public access and most have dune crossovers. Currently, off-street parking is available at the regional beach accesses and at 3<sup>rd</sup> Street and Station Street Park.



CAMA Public Beach Access Image Source: HCP, Inc.

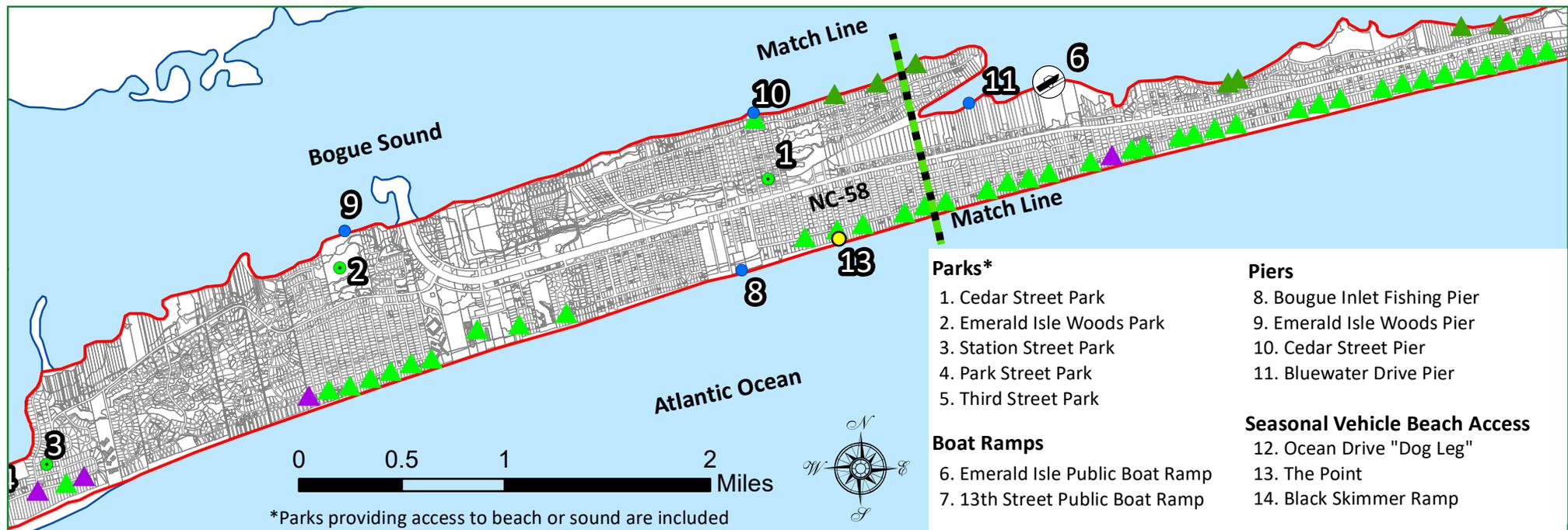
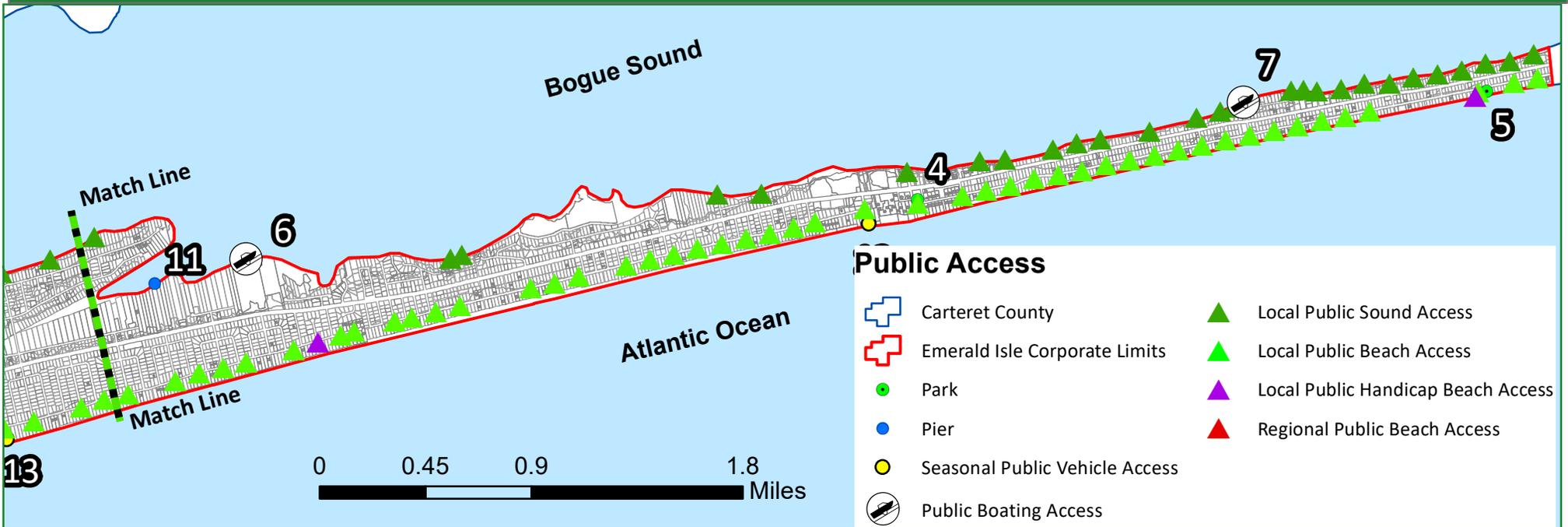
Additionally, on-street handicapped parking is provided at a number of the Town's public access locations, including Channel Drive, Bluewater Drive, Emerald Isle Woods, and Randy's Way. Golf cart parking is also available at 25 of the Town's public access locations.

A reasonable guideline for effective public access to public trust areas throughout Town is to have an available access facility within ¼-mile of most residential properties. This standard places public access within walking distance and easy biking distance for most residents and visitors.

For regional access areas, the standard of one facility per 4 miles as suggested by the NC Division of Coastal Management and has been effective and appropriate for the Town. The Public Access Location Map (Map 10) shows the location of all local and regional access points.

Emerald Isle is home to the largest public boating access facility on the North Carolina coast at 6800 Emerald Drive. The facility includes 4 boat launching ramps in a protected basin, with parking for more than 120 vehicles. The facility is the result of a partnership between the Town and the NC Wildlife Resources Commission, and facilities are available free of charge. Other amenities include a 1,000-foot long pier to Bogue Sound, picnic shelter, and the directly adjacent Senator Jean Preston Memorial Playground.

# MAP 10. PUBLIC ACCESS



### *Parks and Open Space*

The Town of Emerald Isle owns and operates several park/open space facilities that are located throughout its corporate limits. The following provides a summary of these facilities, and the locations of each park are depicted on Map 9 Town Maintained Facilities.

- **Blue Heron Park** is located behind Town Hall and adjacent to Emerald Isle Parks & Recreation Community Center. Amenities include: basketball court, bike rack, fossil pit, gazebo, playground, picnic pavilion, 2 lighted tennis courts, and restrooms.
- **Cedar Street Park** is located at the end of Cedar Street on the sound side. Amenities include: kayak & windsurfing access, parking for 7 cars, picnic table, and pier.
- **Emerald Isle Woods Park** is a 41-acre park located off Coast Guard Road. Amenities include: floating dock, 4 grills, handicap access, NC birding trail, picnic pavilion, 2 piers in Bogue Sound, restrooms, and walking & hiking trails.
- **Ocean Oaks Park** is located at the intersection of Pinewood Place and Ocean Oaks Drive in the Ocean Oaks subdivision. No parking is provided. Amenities include: playground and bike rack.
- **Park Street Park** is located across the street from the Eastern Ocean Regional Access. Amenities include: kayak launch platform and pier. Parking is available across NC 58 at the Eastern Ocean Regional Access.
- **Station Street Park** is located off Coast Guard Road near “the Point.” Amenities include: beach access (short, ¼-mile walk), beautiful shade tree, bike rack, parking for 16 cars, and picnic table.

- **Third Street Park** is located on Ocean Drive and is accessible from First and Fifth Streets. Amenities include: parking for 12 cars, observation deck, and beach access.
- **Senator Jean Preston Memorial Playground** is located at the Emerald Isle Public Boating Access Area. Amenities include: all-inclusive playground with handicapped accessibility, grassy areas, and parking.

### *Town-Wide Multi-Use Path*

The Emerald Path extends approximately 11 miles from the Indian Beach town limits all the way to The Point at Bogue Inlet. The path winds through grassy areas along Coast Guard Road to Loon Drive, snakes through wooded areas from Loon Drive to the Welcome Center, meanders through the downtown district and passes the Municipal Complex at Black Skimmer Drive and ends at the eastern town limits. The multi-use path provides an alternative means of transportation to key destinations in Town, as well as provides an additional recreational opportunity in Emerald Isle. The path was constructed with NCDOT funding, significant community fundraising efforts, and Town tax dollars. The location of the overall facility is shown on Map 9, Town Maintained Facilities.

### **Water and Sewer Infrastructure**

#### *Water System*

Emerald Isle does not operate a public water system. It is served by the Bogue Banks Water Corporation (BBWC), which also serves the Town of Indian Beach and the unincorporated area of Salter Path. BBWC is a nonprofit water utility corporation that is owned by its customers and managed by a 7-member Board of Directors. BBWC’s water service area for the Town follows the corporate limits line (see Appendix H). Water lines are not mapped due to Homeland Security issues.



**Bogue Banks Water Tower** Image Source: HCP, Inc.

The water company serves a permanent population of 3,689 people and up to 50,000 people in the summer. BBWC currently has 6,200 accounts, both active and inactive.

Twelve existing wells supply the system with water. These wells are capable of providing 3,500,000 gallons of water per day (gpd) when pumping is restricted to 12 hours per day. The company states that it can supply the equivalent of 7,300 customers, far exceeding the current customer base. As of the drafting of the 2004 Emerald Isle Land Use Plan,

it was projected that the plant would need upgrading in fiscal year 2014. Due to the recession and collapse of the housing market in 2008, the water plant upgrade has not been carried out. Future demands regarding overall infrastructure carrying capacity will be addressed in Section 4 of the plan.

According to BBWC, the current system serving Emerald Isle is in good working order and there are currently no documented overflows, bypasses, or other problems that may degrade water quality or constitute a threat to public health. The following table provides a summary of available wells and their respective capacities.

**Table 13. Bogue Banks Water Corporation Well Capacity**

Well Number	Capacity (gpm)	Storage (gallons)
1	150	500,000
2	300	500,000
3	300	300,000
4	200	500,000

Well Number	Capacity (gpm)	Storage (gallons)
5	No data	No data
6	300	100,000
7	400	1,000,000
8	550	
9	550	
10	550	400,000
11	550	
12	1,500	500,000
<b>Total Capacity</b>	<b>5,350</b>	<b>N/A</b>

Source: Town of Emerald Isle 2004 CAMA Land Use Plan.

**Sewer System**

Emerald Isle does not have a central sewer system. Individual septic tanks, shared septic tanks, or “package treatment” plants serve residences and businesses (see Appendix H). There are currently 7 package treatment systems in Emerald Isle.

**Table 14. Private Package Wastewater Treatment Facilities**

System	Capacity (gpd)	Type
Cape Emerald	50,000	Treatment plant/rotary distributor
Pebble Beach	70,000	Treatment plant/rotary distributor
Point Emerald Villas	52,950	Treatment plant/rotary distributor
Queens Court	24,000	Treatment plant/rotary distributor
Emerald Plantation	55,000	Treatment plant/low pressure
Sound of the Sea	40,000	Treatment plant/rotary distributor
Emerald Bay Villas	3,840	Treatment plant/low pressure

Source: Town of Emerald Isle 2004 CAMA Land Use Plan.

According to discussions with Department of Environmental Quality staff, all of these plants are currently meeting their permit requirements.

There are no current plans to develop a large-scale, public, central sewer system in Emerald Isle. In lieu of a central wastewater treatment system controlled by the Town, Emerald Isle will continue to rely on state and county permitting for wastewater systems. A wastewater permit issued by the Carteret County Health Department is required prior to commencing any development project throughout town, regardless of whether an on-site septic or package treatment plant is being utilized. Permit staff at Carteret County Health Department indicates that generally permits for septic tanks are not a problem in Emerald Isle and that once installed, the systems function as intended.

Currently, all package treatment plants are functioning properly and there are no documented overflows, bypasses, or other problems that may degrade water quality or constitute a threat to public health. Each facility is monitored and maintained by a licensed operator. According to Carteret County Environmental Health, neither the private package treatment plants nor private septic systems pose a threat to local water quality.

### Natural Gas

Emerald Isle does not have access to central natural gas service. There are several private companies that provide LP gas service for commercial and private residential use.

### Stormwater

Since adoption of the 2004 Emerald Isle CAMA Land Use Plan, the Town has worked diligently to expand and improve upon the Town's municipal stormwater drainage system, while also adopting development regulations pertaining to on-site retention of stormwater. Town staff, in concert with the Planning Board and Board of Commissioners, has developed a comprehensive stormwater management program that is carried out through the Town's Unified Development Ordinance.

The current regulations require that all residential and non-residential development address on-site management of non-point source runoff from a respective project site. The standards and best management practices required/recommended vary according to the proposed development site.

In addition to local stormwater management standards, the Town also works with NCDEQ to enforce NC State Coastal Stormwater Management Regulations.

Map 11 provides an overview of the existing Town of Emerald Isle Stormwater Management System. The system has been upgraded substantially since adoption of the Town's 2004 plan; however, there are additional improvements necessary to adequately address all documented stormwater drainage "hot spots." These "hot spots" are characterized by low-lying areas where ponding of water occurs during and following substantial rain events. It should be noted that there are no point source stormwater discharges located within Emerald Isle's planning jurisdiction. Future improvements relating to the stormwater system will be addressed under Section 4 of this plan.

### Solid Waste

The Town of Emerald Isle contracts out all curbside waste management services to a local contractor. The Town provides curbside trash pickup to oceanfront properties on Mondays and Fridays and soundside properties on Tuesdays and Thursdays. Curbside pickup of recyclables is provided weekly on Wednesdays. Additionally, the Town Public Works Department collects yard waste on a weekly rotation. Commercial solid waste removal is provided by a private contractor on an as-needed basis.

# MAP 11. STORMWATER SYSTEM



### Street Maintenance

The Town of Emerald Isle is responsible for street maintenance on all right-of-ways (45.5 miles) with the exception of Emerald Drive (NC 58) and several private streets located throughout the Town's corporate limits. The Town received approximately \$150,000 in Powell Bill monies for fiscal year 2014/2015 to carry out street improvements. The Town's Public Works Department maintains a schedule of improvements that is updated annually, which outlines the greatest needs/deficiencies relating to right-of-way maintenance.

### Transportation

The Carteret County Comprehensive Thoroughfare Plan designates two major thoroughfares in Emerald Isle: Coast Guard Road, from Old Coast Guard Road to the intersection at Emerald Drive; and Emerald Drive (NC 58) from the Langston Bridge to the town limits at Indian Beach. The designated function of these major thoroughfares is to move traffic safely and efficiently between Emerald Isle and other destinations, and to move traffic between major destinations within the town.

Major thoroughfares may serve abutting properties, but their major function is to carry traffic. Land use policies for these facilities should be oriented toward preserving their traffic capacity.

The minor thoroughfares street classification is not shown in the current thoroughfare plan; however, there are several streets in the Town's system which operate as minor thoroughfares. These streets include: various segments of Ocean Drive, Sound Drive, Crew Drive, and Reed Drive. The function of these streets is to collect traffic from local streets and carry it to the major thoroughfare. In addition, these streets usually provide access to abutting property. Land use policies for minor thoroughfares should discourage development of these streets into major thoroughfares.

Local connector street is not an "official" thoroughfare designation. However, several local residential streets have developed into connections that carry traffic between the major and minor thoroughfares. These connector streets include: Old Ferry Road and Mangrove Drive; Bogue Inlet Drive; and Lee Avenue. Land use policies should recognize potential conflicts between traffic and existing uses and may encourage installation of improvements such as sidewalks and bike lanes to enhance traffic safety.

The transportation system is well established throughout the Town's corporate limits, and has been for some time. Currently, the system does not have a direct impact on land use patterns; however, this may change as improvements are made to NC 58 (roundabouts) and redevelopment of mixed use areas defined on the future land use map.

Future projects and improvements impacting the Town of Emerald Isle will be discussed in the Future Demand/Projections portion of the plan.

### Education

Emerald Isle is served by the Carteret County School System. Grades K through 5 students attend White Oak Elementary School. Grades 6 through 8 attend Broad Creek Middle School, and all high school-aged children residing in Emerald Isle attend Croatan High School. The following provides a summary of capacity at the Carteret County schools serving Emerald Isle residents:



- White Oak Elementary – 772 students (135 from Emerald Isle)
- Broad Creek Middle – 617 students (92 from Emerald Isle)
- Croatan High – 806 students (168 from Emerald Isle)

Beyond the secondary school level, there are three community colleges located in reasonably close proximity to Emerald Isle -- Carteret Community College in Morehead City, Coastal Carolina Community College in Jacksonville, and Craven Community College in New Bern. Additionally, traditional four-year universities are located approximately 70 miles away in Wilmington (University of North Carolina Wilmington) and 90 miles away in Greenville (East Carolina University).

### Historic Properties

There are no properties listed on the National Register of Historic Places located within Emerald Isle’s corporate limits. Additionally, these are no formally designated cultural or scenic areas. However, the State of North Carolina recognizes the locations of several shipwrecks and gun emplacements buried along the Emerald Isle beach strand. Many of these sites are not accessible or visible due to varying dry sand beach conditions.

**Gun Emplacements – 6200 Block of Ocean Drive, Emerald Isle NC (Post Ana, 2015) Image Source: Carteret County.**



### Administration

Emerald Isle operates under a Manager/Council form of government. The Town Manager and staff operate under the following departments:

- Administration
- Police
- Fire
- Town Planner
- Public Works/Solid Waste
- Parks & Recreation

The Town maintains a staff of 57 full-time employees and 80 part-time staffers. Emerald Isle has an annual operating budget of approximately \$9.5 million dollars and the Town’s largest expenditure is public safety.



**Emerald Isle Town Administration Building  
Image Source: HCP, Inc.**

## EXISTING LAND USE

### Introduction

The following provides a summary of Emerald Isle’s existing land use. Existing land use conditions provide a snapshot of the existing urban condition. Land use patterns with maps and associated data enable policy makers to make more informed decisions about future service needs and future land use demands. This effort, in turn, assists elected officials, planning board members and citizens at-large in making educated decisions about rezoning cases (map amendments), quasi-judicial hearings and zoning ordinance text amendments.

The following existing land use map and associated data deviates slightly from the information presented in the 2004 Emerald Isle CAMA Land Use Plan. Three factors are reflected: an improvement in the data available, a shift in the existing land use designations utilized in the plan, and actual changes in land use. The existing land use designations have been modified slightly to better reflect the current built environment throughout Emerald Isle.

### Methodology

Existing land use should not be confused with zoning. Existing land use classifies the current land use, which may differ from current zoning. The following provides a summary of the existing land use categories utilized:

- **Multi-Family Residential** – Residential developments with greater than five units per acre on a single lot.
- **Single-Family Residential/Manufactured Housing** – All residential properties with four or fewer units on a single lot.
- **Commercial** – Retail, wholesale, and service establishments.

- **Office and Institutional** – Government, churches, offices, and schools.
- **Camping** – Portions of the Town in which traditional camping and/or travel-trailers are allowed.
- **Recreational** – Portions of Town dedicated to the provision of active and passive recreation.

The Carteret County tax parcel file, in coordination with aerial photos, was used to determine the existing land use classification for properties in Emerald Isle. Field surveys and Google’s “street view” were used to confirm the accuracy of the aerial photos and tax data. Further, property value was used to ensure whether parcels were unimproved. See Table 15 and Map 12 for more information.

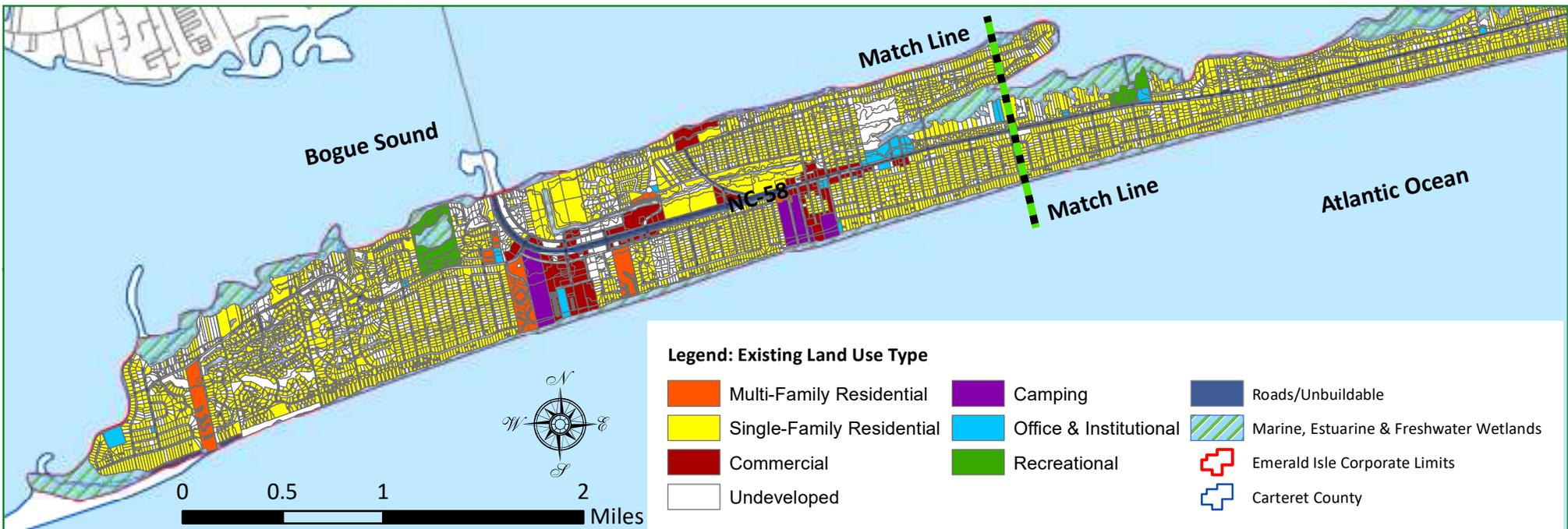
**Table 15. Existing Land Use**

Land Use Category	Acres	% of Corporate Limits
Multi-Family Residential	81.25	2.51%
Single-Family Residential	1,593.08	49.14%
Commercial	100.79	3.11%
Office and Institutional	37.88	1.17%
Camping	43.49	1.34%
Recreational	26.77	0.83%
Marine, Estuarine, & Freshwater	413.38	12.75%
Roads & Unbuildable Area	478.42	14.76%
Undeveloped	466.68	14.40%
<b>Total</b>	<b>3,241.74</b>	<b>100.00%</b>

Source: HCP, Inc.

Existing land use throughout Emerald Isle’s corporate limits is predominantly characterized by single-family development comprising nearly 50% of total land use. Maps 12 through 15 provide a detailed overview of existing land use patterns. Additionally, vacant and underutilized properties have been tied to Emerald Isle’s existing zoning districts providing a clear sense of development potential.

# MAP 12. EXISTING LAND USE



### Overview of Vacant Properties

Throughout the corporate limits of Emerald Isle, there are approximately 999 undeveloped parcels. The majority of these parcels are well under an acre in size and zoned for single-family residential development. Of the 999 undeveloped parcels, 925 are under an acre in size, while 74 are over an acre in size. While zoning regulations will require that a majority of the 925 parcels under an acre will be developed as single-family residential, the larger parcels will provide for additional development scenarios, which may require Zoning Ordinance text and map amendments.

The following provides a summary of the Town's existing Zoning Districts (see Map 13, Zoning):

- **Residential (R2)** – Residential district allowing a single-family dwelling or a two-family dwelling on a lot.
- **Residential Multi-Family (RMF)** – Residential district allowing a single-family dwelling, a two-family dwelling, or a multi-family dwelling on a lot.
- **Mobile Home (MH)** – Mobile home district allowing manufactured homes on lots located outside of manufactured home parks. This district also allows single-family dwellings and duplexes.
- **Business (B)** – Business district allowing a general and wide variety of retail trade.
- **Camp (C)** – Recreational district allowing travel-trailers, campers and tents.
- **Government (G)** – A district allowing a variety of governmental and public uses.
- **Village-East (VE)** – A mixed use district consisting of residential, commercial, recreational, institutional, and office land uses.

- **Village-West (VW)** – A mixed use district consisting of residential, commercial, recreational, institutional, and office land uses.
- **Marina Village (MV)** – A mixed use district consisting of residential, commercial, recreational, institutional, and office land uses.

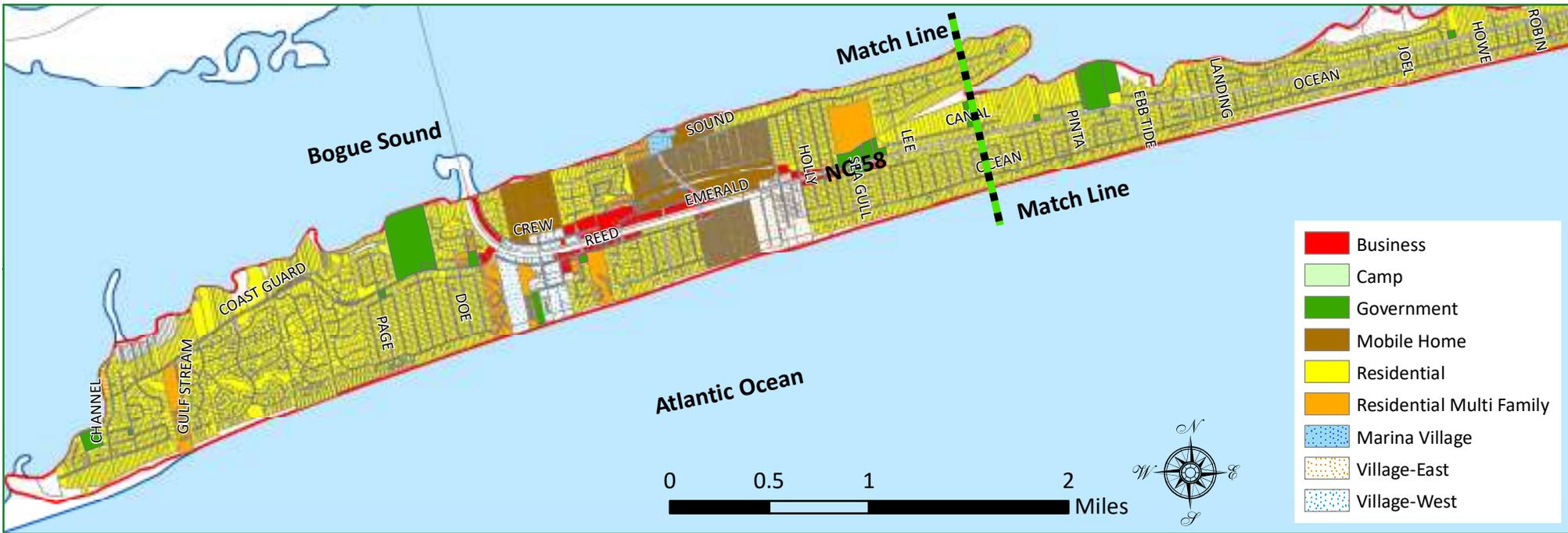
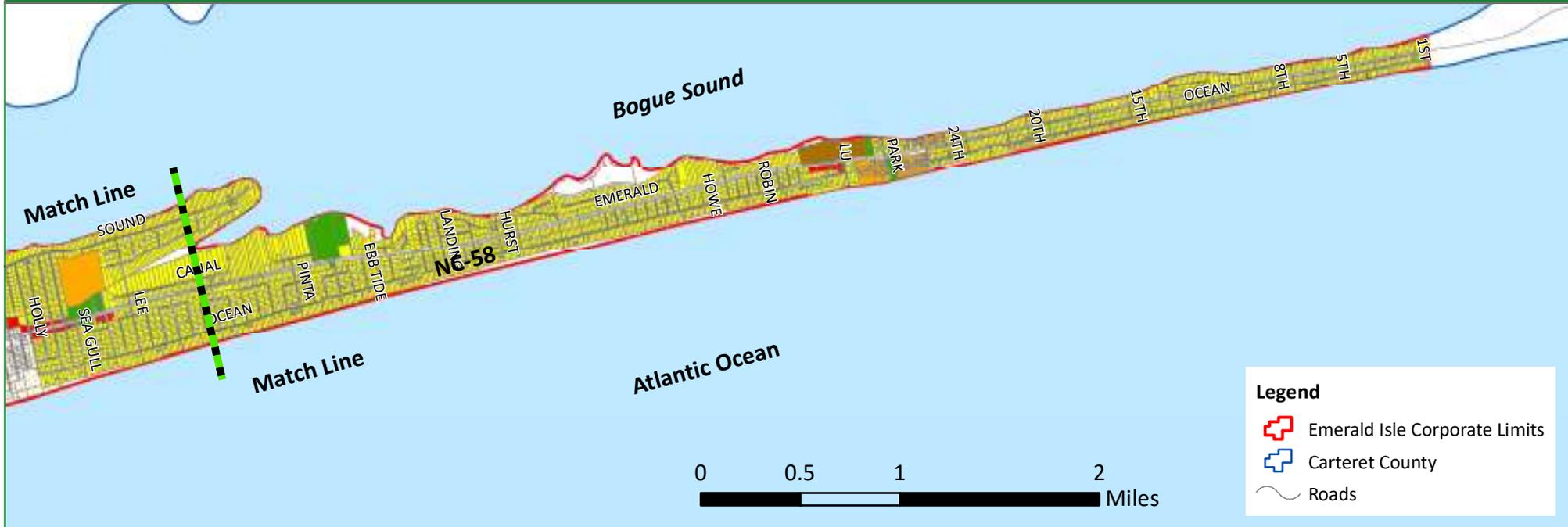
The following table and Map 14 provide a snapshot of the zoning classification for all undeveloped parcels remaining in the Town of Emerald Isle. Additionally, Map 15 depicts all remaining undeveloped parcels based on whether they are over or under one acre in size.

**Table 16. Undeveloped Parcels By Zoning District**

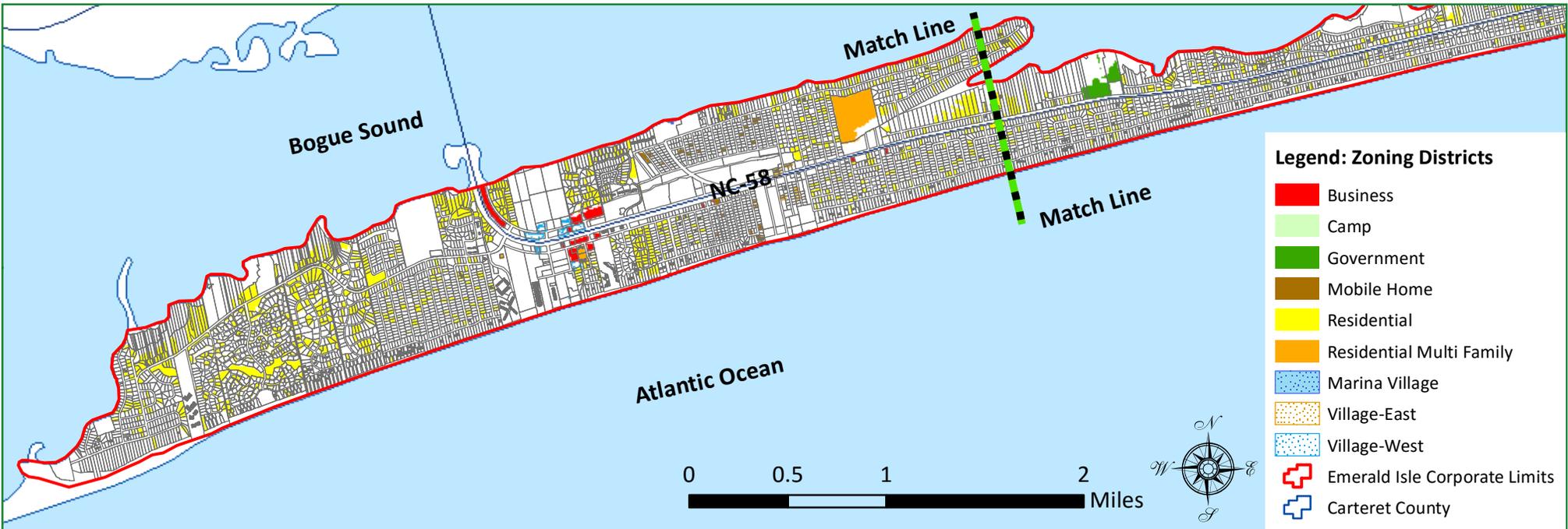
Zoning District	Acres	% of Vacant Parcels
R2 Residential	363.39	87.24%
RMF Residential Multi Family	10.93	2.62%
MH Mobile Home	6.57	1.58%
B Business	16.23	3.90%
C Camp	0.00	0.0%
G Government	10.93	2.62%
VE Village-East	1.47	0.35%
VW Village-West	6.95	1.67%
MV Marina Village	0.05	0.01%
<b>Total</b>	<b>416.52</b>	<b>100.0%</b>

Source: HCP, Inc.

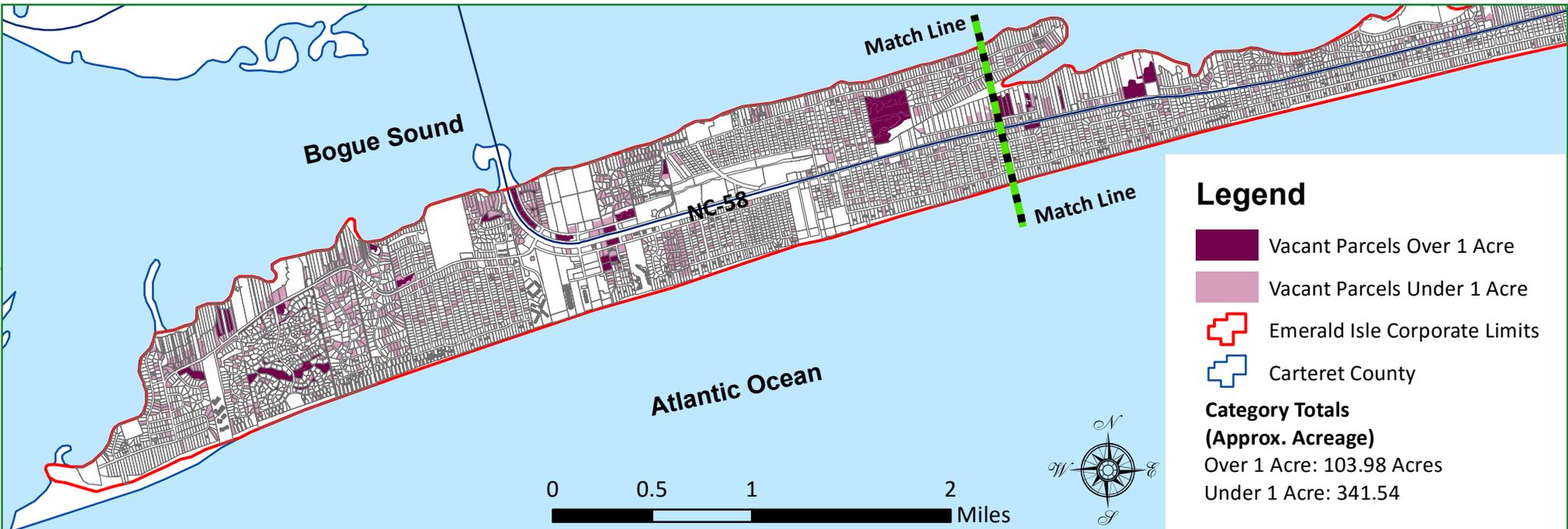
# MAP 13. ZONING



# MAP 14. VACANT PARCELS BY ZONING



# MAP 15. VACANT OVER/UNDER 1 ACRE



## Legend

- Vacant Parcels Over 1 Acre
- Vacant Parcels Under 1 Acre
- Emerald Isle Corporate Limits
- Carteret County

### Category Totals

**(Approx. Acreage)**

Over 1 Acre: 103.98 Acres

Under 1 Acre: 341.54

## **Section 4. Future Demand/Projections**

## INTRODUCTION

This section of the Comprehensive Plan focuses on the future demand for Emerald Isle. This discussion addresses a range of issues including the following:

- Population Projections
- Housing
- Commercial/Economic Development
- Future Community Facilities and Services Needs
- Future Land Use
- Land Use Conflicts
- Redevelopment Potential

The discussion of community facilities and services needs and future land use is intended to provide a foundation for the development of implementing actions as a component of this plan. These sections provide a summary of need with regard to community services and facilities, while also defining future growth and land use patterns. Additionally, permanent and seasonal population projections are provided as a baseline for determining the increased need for Town-sponsored programs, services and community facilities.

## POPULATION PROJECTIONS

Establishing an estimate of the year 2035 population for the Town of Emerald Isle is essential to determining impacts to infrastructure and community services. Calculating population projections is a difficult task and is at best an imperfect science. Nonetheless, projecting population growth is a vital component of future land use, development, and infrastructure needs. Many factors have an impact on the growth or loss of population within a given jurisdiction.

Population growth trends are typically used to calculate population projections. Because a large portion of Emerald Isle is developed and/or zoned for a particular type of development, straight line projections are not considered appropriate. Instead, consideration is given to the increase in single-family/duplex residential units which will account for roughly 90% of future development potential throughout the Town’s corporate limits. At some point, the entire corporate limits of Emerald Isle will be built out which will stop the increase in population. This event is anticipated to occur around 2050 (refer to Housing discussion below). Table 17 provides a summary of population projections for the Town of Emerald Isle.

**Table 17. 2040 Population Projections**

2015 Total Number of Housing Units	2015 Total Housing Occupancy	2035 Estimated Total Number of Housing Units <sup>1</sup>	2035 Total Housing Occupancy <sup>2</sup>	2035 Total Peak Seasonal Daily Visitors <sup>3</sup>	2035 Total Daily Population Estimate
6,798	39,089	7,458	42,884	700	43,584
2015 Population Estimate	2020 Population Estimate	2025 Population Estimate	2030 Population Estimate	2035 Population Estimate	2040 Population Estimate
39,789	39,978	40,167	40,356	43,584	43,773

<sup>1</sup>2035 housing units is based on average building permit activity of 33 single-family homes per year (660 total).  
<sup>2</sup>2035 total housing occupancy is based on total projected housing units and overall housing size reported under the 2015 US Census American Community Survey. These figures account for both seasonal visitors and permanent residents.  
<sup>3</sup>2035 total peak seasonal daily visitors is based on the availability of public access parking spaces through the Town’s corporate limits.  
 Source: US Census Bureau and HCP, Inc.

## HOUSING

As outlined under the existing land use discussion, there are currently 417 acres of vacant/undeveloped land located throughout Emerald Isle’s corporate limits. Nearly 88%, or 363 acres, are zoned for single-family (including duplex) residential development, while an additional 25 acres are zoned for multi-family, manufactured home, or mixed-use development. The remaining 27 acres are zoned for governmental/commercial growth and expansion.

Due to the limited number of available vacant/underutilized properties located throughout Emerald Isle’s corporate limits, total build-out of the Town is expected to occur at some point during the next 40 years; however, it is likely that redevelopment opportunities will persist during and beyond this time period. According to information outlined under the existing land use discussion, the average single-family home site within the Town is approximately 0.4 acres, or 17,400 square feet. Based on this site size and an average of 25 building permits issued per year (average based upon data from last ten years), the Town will be built out in approximately 37 years. This build-out will result in an increase of 930 new single-family/duplex homes throughout the Town.

As noted, there are approximately 26 acres of undeveloped land zoned for multi-family, manufactured home, and/or mixed use development. It is anticipated that this land will be developed at a similar pace as the single-family residential development in the future.

### COMMERCIAL/ECONOMIC DEVELOPMENT



Example of existing commercial development  
Image Source: HCP, Inc.

The Town of Emerald Isle has been successful in nurturing its commercial core and helping local businesses to thrive. Maintaining a thriving business district on a barrier island beach community is vital to

the community’s success as a destination for visitors, and also ensures that a range of commercial goods and services are available for permanent and seasonal residents.

With relatively high land prices, the lack of a central wastewater system, (in some cases) relatively small commercial parcels, and the seasonal population fluctuation, it can be challenging for new commercial ventures to succeed. In implementing its previous land use plan, the Town created new mixed-use zoning districts to promote redevelopment in certain areas of the Town and also to create greater profit opportunities for new commercial development by incorporating a complementary residential component. The Town should also consider additional mixed-use zoning districts in the future to promote new commercial development, and also consider strategies to provide small-scale centralized wastewater treatment facilities intended to serve only commercial and mixed-use districts.

The Town has undertaken several initiatives in the past decade to promote a more identifiable and vibrant “downtown” commercial area, including the implementation of a new mixed-use zoning district, installation of sidewalks and bicycle paths and crosswalks, construction of attractive new public buildings, and improved lighting, landscaping, and directional signage. Future improvements aimed at improving the “downtown” commercial area might include new traffic control infrastructure, access improvements, public art and other placemaking initiatives, and additional landscaping improvements.

With continuing advances in technology, and the increasing ability for professionals to work remotely from any location, there are likely additional economic development opportunities for communities like Emerald Isle that boast a beautiful natural environment and an attractive lifestyle. It may be beneficial for the Town to explore technology infrastructure improvements as an economic development tool to lure more remotely connected professionals to Emerald Isle, thereby providing a larger population base to support existing and new commercial ventures.

In addition to protecting and promoting the Town's commercial core, several other key concerns were identified that citizens have deemed vital to the Town's future economic viability. These issues were ranked/identified as key issues and concerns through either the citizen input survey effort or the public input workshop (a detailed discussion of these efforts is included as an introduction to Section 5 of the plan):

- Maintain the quality of local beaches (through development regulation and nourishment efforts)
- Maintain the Town's family-friendly atmosphere
- Maintain the Town's residential character
- Continue to invest in bicycle and pedestrian transportation facilities
- Maintain low tax rates
- Continue to seek solutions for relief of traffic congestion
- Limit development to single-family/duplex residential and mixed-use development patterns (as zoning currently permits)
- Continue to invest in public shoreline access (especially on Bogue Sound)
- Continue to promote and invest in the Town's commercial core
- Support redevelopment of the three areas of Town zoned for mixed-use development
- Continue to support a range of housing options: campground, manufactured home, single-family/duplex residential, and multi-family residential.
- Continue environmental protection efforts (through land development regulations)
- Continue to invest in public recreational options (both active and passive recreation)
- Maintain current density thresholds as established within the Town's Unified Development Ordinance

## FUTURE COMMUNITY FACILITIES & SERVICE NEEDS

Many factors have an impact on the land use, infrastructure, and transportation systems within a given jurisdiction. For Emerald Isle, the primary impacts are related to a growing permanent population, increasing use of second homes throughout the entire year, increasing visitation in the pleasant spring and fall seasons, the desire for additional amenities, and the desire for sustained economic growth.

While managing these impacts, the Town must stay true to its core identity, and recognize that the reason Emerald Isle has succeeded is its desirability as a beach destination that embraces its "family beach image" and "small-town atmosphere." Particular emphasis should be placed on preserving the Town's number one asset – the beach, and also on future development policies that carefully balance the "family beach image" and "small town atmosphere" with additional opportunities for economic success.

Community infrastructure and services such as utilities, beach nourishment, police, fire, emergency medical services, public works, and recreation will all be affected by these factors, as well as projected growth and development. Projected needs that will result from future development and changes to the land use pattern are discussed within this section. In addition to impacts on infrastructure and services, discussion includes recommendations for enhancing the built environment through capital improvement.

### Health Care Resources

Carteret Health Care has recently completed a substantial renovation that will serve the Emerald Isle population through the course of the planning period. The \$53,000,000 expansion added 110,000 square feet of space to the existing 300,000 square foot hospital and greatly increased efficiency. The expansion provided 68 replacement beds, all private rooms with bath and shower, and a Specialty Care Pavilion. The pavilion includes an updated Critical Care Unit, Progressive Care Unit, and Post-Partum Beds. The hospital’s Cancer Center is also housed in the new space, creating a new multi-disciplinary Cancer Center to serve residents. The project also included inpatient dialysis services to serve a large and growing population who suffer from chronic kidney disease.

The Town is currently served by a primary care/urgent care medical provider and a dental office, and efforts should be made to promote future health care resources within Emerald Isle. Additional new medical facilities have also recently been added on the mainland in western Carteret County, which provide additional convenience and reduce the need for trips to medical facilities in Morehead City or Jacksonville.

### Law Enforcement

The Town of Emerald Isle Police Department must consistently monitor and address changing conditions on the island. As noted earlier in the plan, seasonal population on the island can elevate close to 40,000 individuals. This population fluctuation impacts all Town services – perhaps none more than law enforcement.

As permanent and seasonal population increase in the future, efforts should be made to ensure adequate law enforcement staffing to respond to increasing demands for service. Future staffing needs may include increased presence on the beach strand and throughout the

community, along with more focused narcotics efforts. Additionally, community relationships and involvement are vital to the continued success of the Emerald Isle Police Department, and recent community relations and outreach efforts should be continued and expanded in the future.

The Emerald Isle Police Department operates out of a recently renovated Police Station with ample space to serve the department for the next 10-20 years or more. Continued emphasis should also be placed on equipping law enforcement with reliable and effective tools, including new technology.

### Fire Protection and Emergency Medical Services

The Town of Emerald Isle maintains a full-service fire department and provides significant funding for a separate, non-profit emergency medical services department. Currently, these departments provide effective service to Town residents throughout the year; however, resources can become strained during peak summer months. As permanent and seasonal population increase in the future, efforts should be made to ensure adequate fire and emergency medical services staffing to respond to increasing demands for service. Additional staffing may be required for both fire and EMS as service demands increase.



Emerald Isle Fire Station #2 *Image Source: Town of Emerald Isle.*

The Fire Department operates out of two stations, and a significant renovation and expansion is planned for Fire Station 1 in 2019, which should serve the department’s needs for the next 10-20 years or more. As service demands increase in the future, it may be beneficial to consider an additional Fire Station to serve the western area of Emerald Isle. Emerald Isle EMS, Inc., operates out of a relatively new station that should also serve the department’s needs for the next 10-20 years or more.

Both the fire and EMS departments are adequately equipped with reliable and current fire apparatus and ambulances, and established replacement schedules should be adhered to. Continued emphasis should also be placed on equipping fire and EMS personnel with reliable and effective tools, including new technology.

### Parks, Recreation, and Open Space



**Emerald Isle Public Access Boat Ramp**  
*Image Source: HCP, Inc.*

Emerald Isle has worked diligently over the last thirty years to develop an extensive inventory of passive and active recreational facilities. The Town’s support of these facilities is clearly

acknowledged through both the public input workshop and citizen input survey efforts. These facilities include public access areas, a Community Center and gymnasium, exercise facilities, parks, playgrounds, and a town-wide multi-use path.

The Town remains committed to the provision of plentiful beach and sound access throughout Emerald Isle, and efforts to provide additional access facilities and enhance existing access facilities should continue. The relatively high land acquisition costs in Emerald Isle

make this more challenging; however, the Town should continue to maximize outside funding sources to enhance public access to the ocean and sound.

Additional needs identified during community input processes include the provision of a traditional full-service marina and the continued existence of an open-to-the-public ocean fishing pier. In both cases, the provision of these facilities by the private sector is preferred; however, opportunities for publicly-owned facilities should also be considered in the future.

Future land use planning should also consider ways to maintain and encourage the provision of commercial recreational opportunities that create a more attractive community. Such opportunities include water parks, mini-golf, and other sports, entertainment, and cultural activities.

### Water System

The Town of Emerald Isle does not own or maintain the municipal water system. As noted in Section 3, water service throughout Emerald Isle is provided by the non-profit Bogue Banks Water Corporation (BBWC). BBWC serves roughly 7,300 customers, the majority of which are located within Emerald Isle. Water for the system is generated from a network of twelve wellheads. This water is treated either through the BBWC’s Reverse Osmosis Treatment Plant or by treating the water with chlorine.

Based on current conditions and land development regulations, BBWC should have adequate water system carrying capacity to support complete build-out of the Town (refer to Housing discussion above). The maximum capacity of the BBWC water system is 5.5 million gallons per day (MGD). Currently, during summer months, peak demand is approximately 3.5 MGD. During winter months, demand drops dramatically to as low as 1.0 MGD.



The current system is more than adequate to support demand generated by both the Town’s permanent and transient population. Thus, no expansion of the system’s capacity is expected to be

necessary. In terms of future improvements, BBWC has plans to construct a second reverse osmosis treatment plant in an effort to eliminate the need for chlorine-based treatment.

Currently, approximately 40% percent of the Town’s potable water (during peak summer months) is provided through the reverse osmosis plant. During winter months, 100% of the water is generated through this plant. Upon completion of the second reverse osmosis plant, it is anticipated that all wellheads will serve the two reverse osmosis plants, and the need for chlorine-based treatment will be eliminated.

Regardless of the treatment method, it is not anticipated that system demand will surpass the available capacity of 5.5 MGD during the planning period.

### Sewer System

The Town of Emerald Isle relies on a combination of private septic tanks and package treatment plants for the provision of wastewater treatment services. Nearly all single-family homes and manufactured residential units utilize private septic tanks. There are several isolated cases where a single septic tank may serve several manufactured home units.

The permitting of all wastewater treatment systems through the Town is handled by the Carteret County Health Department. At this time, all package treatment systems throughout Emerald Isle are functioning properly, and septic tank system failures have been very infrequent due

to the sandy soils prevalent in Emerald Isle and the relatively low-density development patterns currently in place. Assuming continued functionality, the Town will continue to rely on these wastewater treatment methods in lieu of a Town-wide, centralized wastewater treatment system.

However, as noted above, in order to promote vibrant commercial zones and promote strategic redevelopment, the Town should consider strategies to provide small-scale centralized wastewater treatment facilities intended to serve only commercial and mixed-use districts. The development of such facilities could remove critical barriers to commercial and mixed-use development in appropriate locations in Emerald Isle.

### Beach Nourishment/Bogue Inlet

The Town has invested in five beach nourishment projects since 2003, and these projects have successfully maintained the Town’s number one asset – the beach. The Town is committed to beach nourishment as the preferred strategy to combat beach erosion, and has established plans, funding sources, and permitting mechanisms in place or nearing completion. In conjunction with the Carteret County Beach Commission, the Town anticipates nourishing the Town’s 12 miles of beach as needed in the future (perhaps at intervals in the 5-10 year range), consistent with the parameters outlined in established plans.

The Town successfully realigned the main inlet channel in Bogue Inlet in 2005, relieving erosion pressure at The Point. The Town remains committed to a stable alignment for the main channel in Bogue Inlet in the future, and established plans incorporate future dredging efforts in Bogue Inlet to both stabilize the inlet and to provide a quality sand source for future beach nourishment efforts in western Emerald Isle. It is anticipated that the main channel will be periodically realigned approximately once every 15 years, depending on current conditions.

Established State and local funding sources are expected to be sufficient to meet future needs.

### Stormwater

As discussed in Section 3 of the plan, Emerald Isle has a comprehensive stormwater management program that involves both a regulatory framework and significant stormwater management infrastructure constructed and maintained by the Town. The Town has worked diligently in recent years to address the most significant drainage issues, and continues to work to address smaller-area drainage issues as time and funds permit. The Town has completed a multi-million dollar stormwater system to serve the Coast Guard Road area, with a total of 8 stormwater pump stations discharging to wetland areas in Emerald Isle Woods Park, with a 9<sup>th</sup> station expected to come online in early 2017. The Public Works Department has also installed numerous above ground and subsurface infiltration devices in various locations to address smaller-area issues, and is also experimenting with small-scale pump systems to clear smaller-area issues. Additionally, Public Works will continue to maintain historical drainage features as needed to promote effective function during significant rainfall events.

The Town has addressed most of the critical stormwater issues in recent years, and will continue its focus on addressing smaller-area issues in the future. The primary challenges in addressing these issues are the lack of publicly-owned land available to direct stormwater toward, and in many cases, the lack of private land available for purchase (if justified), and also the presence of a relatively high water table in certain areas.

The Town will continue to enforce State and local stormwater regulations for new development which essentially require the infiltration of runoff from all impervious surfaces associated with a 2-inch rainfall event. These regulations apply to all new development,

regardless of scale, from single-family homes to major commercial or multi-family residential projects.

### Water Quality

The Town is fortunate to enjoy excellent water quality in the Atlantic Ocean, Bogue Sound, and Bogue Inlet. As this excellent water quality is essential to the quality of life and the Town's economic success, the Town will continue to strive to maintain that excellent water quality. There are two significant threats to water quality in a community like Emerald Isle: stormwater runoff; and malfunctioning and/or failing septic tank systems.

Emerald Isle has worked diligently to establish policies and land development regulations aimed at mitigating and/or minimizing these impacts. The Town has established a comprehensive stormwater management program that requires both residential and non-residential development to construct on-site stormwater facilities that will limit or eliminate the impacts of runoff on adjoining properties, as well as Bogue Sound.

The Town is currently authorized by the NC Department of Environmental Quality, through the Universal Stormwater Management Program, to administer both State and local stormwater management requirements. In Emerald Isle, all development must have a stormwater management plan to demonstrate compliance with the ordinance. For all commercial development and for residential development that disturbs more than 10,000 square feet, a professional engineer must seal the plan; residential development with less than 10,000 square feet does not require an engineer's seal. The plan must be submitted before a commercial development plan or subdivision plat is approved, or before a building permit is issued.



Additions or modifications to existing single-family residential structures that involve less than 1,000 square feet of impervious surface are exempt from the stormwater management plan requirement. Also, maintenance or alterations that do not change quantity or quality of runoff are not required to submit a plan.

Septic tanks, when not properly maintained, can have significant impacts on water quality within coastal areas. Fortunately, at this time, all package treatment systems throughout Emerald Isle are functioning properly, and septic tank system failures have been very infrequent due to the sandy soils prevalent in Emerald Isle and the relatively low-density development patterns currently in place. The Carteret County Health Department monitors the condition of all septic systems on a periodic basis. If it is determined that a system is failing, formal steps are initiated to either rectify deficiencies and/or replace the system.

### Transportation/Street Maintenance

As noted in Section 3, Emerald Isle's road network is comprised of private roads, Town-maintained streets, and NC 58. The Town of Emerald Isle utilizes funding provided through the Powell Bill program for maintenance and improvement of all town-maintained streets. The Town maintains a prioritized maintenance schedule that is revisited on an annual basis in accordance with the availability of Powell Bill funding in a given fiscal year. The Town does not foresee any new Town-maintained streets in the future, with the exception of any new streets constructed in conjunction with new subdivisions.

There are currently no projects specifically outlined in the Statewide Transportation Improvement Plan impacting Emerald Isle; however, the Town has maintained dialogue with the NC Department of Transportation regarding traffic connection issues along NC 58. This main corridor not only provides access to Emerald Isle, but also serves as a gateway to the other three Bogue Banks communities from the

west. Additionally, traffic congestion was identified as a key concern in both the public input workshop and citizen survey process.

The Town has been working with the DownEast Rural Planning Organization and the NC Department of Transportation in recent years to identify and implement traffic congestion improvements at the four signalized intersections in Emerald Isle, and also on the mainland leading to the Emerald Isle bridge. During peak summer months, NC 58 traversing the entire length of the Town's corporate limits become highly congested, comprising level of service. There is no simple solution to this problem, which generally occurs between late June and mid-August. The Town is looking at innovative traffic calming facilities to address this issue. During periods of normal daily traffic volume, NCDOT has identified no level of service (LOS) issues. During peak summer months, traffic is an ongoing concern; however, this issue is during a limited period of time and no simple solution exists to alleviate the issue. NCDOT has identified traffic roundabouts as a potentially beneficial traffic improvement at the four signalized intersections; however, they have indicated additional analysis is necessary and that any future improvements would only proceed with concurrence from the Town. In response, the Town has officially requested that NCDOT provide funding for intersection improvements, and such improvements may ultimately consist of traffic roundabouts, additional and/or longer turn lanes, access improvements, and/or traffic signal improvements. Additionally, the Town has requested concurrent improvements to the NC 58/NC 24 intersection, potentially including a new overpass and/or additional lanes.

Public reaction to the potential traffic roundabouts has been mixed. This mixed reaction was confirmed by both the public input workshop and citizen survey effort, and will continue to be monitored throughout the planning process and beyond. Any final decisions will be made by NCDOT in conjunction with the Town in the future.

Other solutions that have been discussed include the construction of a mid-island bridge to be situated in the general vicinity of Salter Path. The Town's previous Land Use Plan preferred a mid-island bridge that would reduce the burden on both Emerald Isle and Atlantic Beach to serve as primary ingress and egress points for the entire island, and this solution was the most popular solution in the citizen input survey. However, this solution is likely the most expensive option and also the most difficult to implement for political, logistical, and environmental reasons. The Town's previous Land Use Plan specifically opposed the widening of the Emerald Isle bridge and NC 58 through Emerald Isle, and that solution did not receive significant support in the citizen input survey.

The Town has constructed 11 miles of dedicated multi-use paths and two miles of new sidewalks in the past decade. These facilities are heavily utilized by residents and visitors, and are considered among the Town's most important assets. The Town anticipates construction of future multi-use path segments in the future as funds permit, and as additional projects are identified. A planned new segment along Bogue Inlet Drive will be constructed in 2017, and will link the central business district with Bogue Inlet Pier.

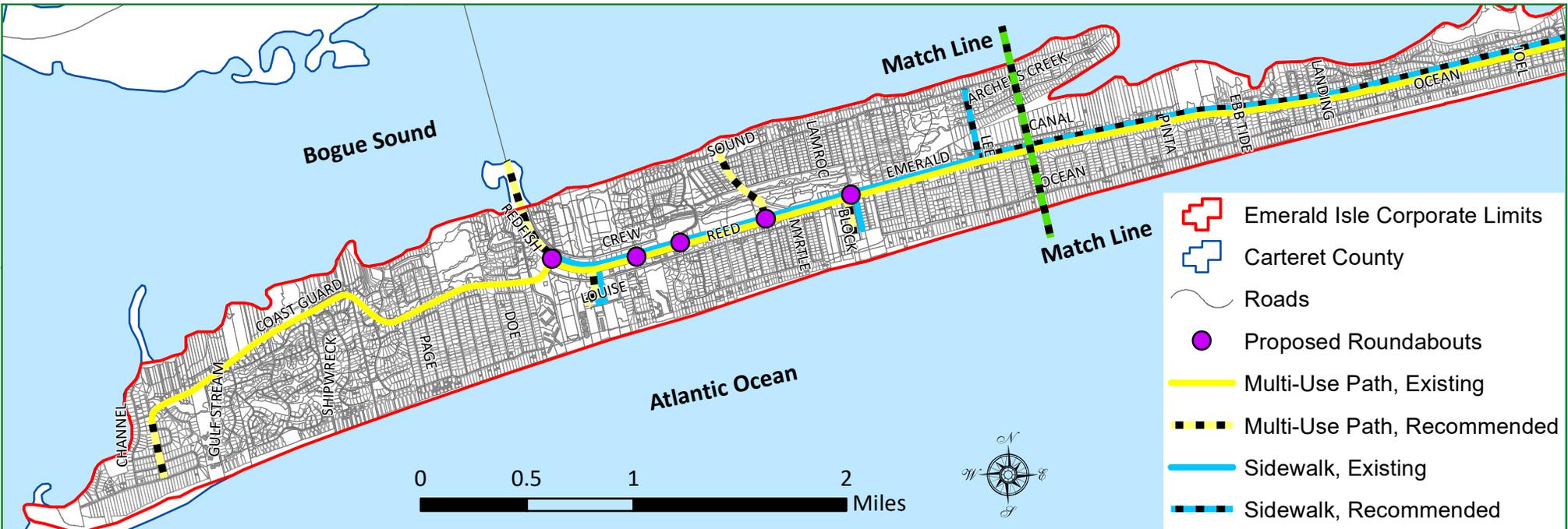
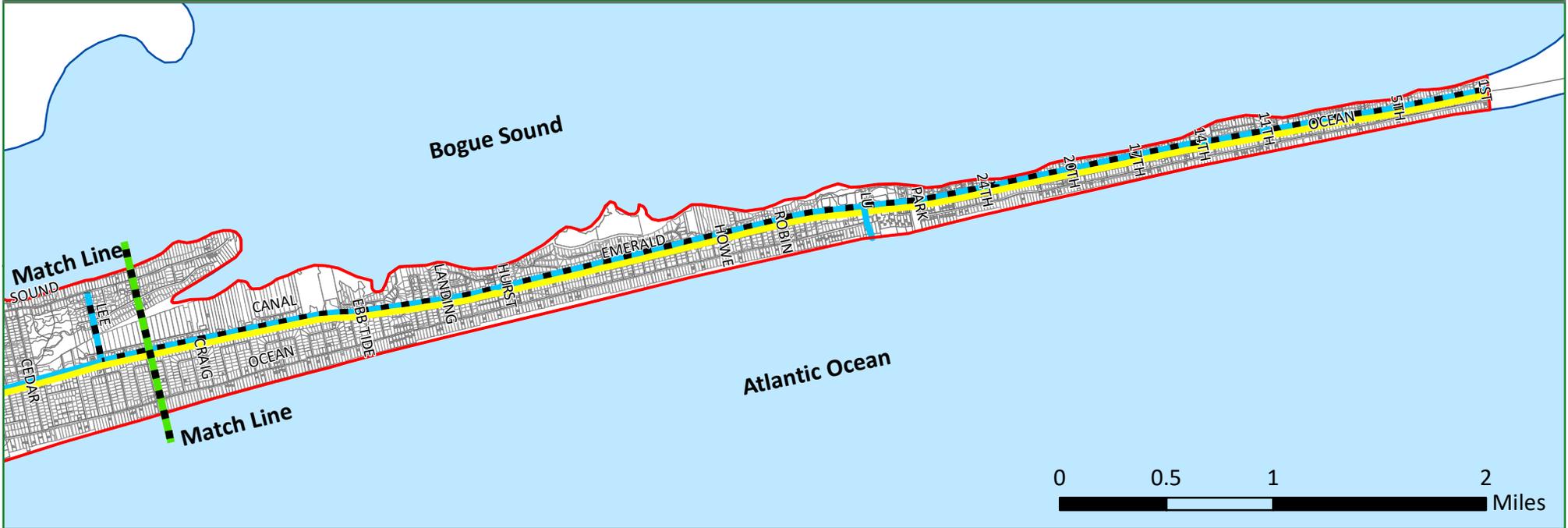
Additional sidewalks are also anticipated in the future as funds permit, with Lee Avenue often noted as a desired location for a new sidewalk due to the location of numerous housing units off of Lee Avenue and its distance from the beach strand. Additionally, there may be interest in the installation of pedestrian crosswalks to promote safer crossing of NC 58 at key locations, potentially including Lee Avenue, Cedar Street, the Town Government complex, and Islander Drive.

The Town manages a local program that allows permitted golf carts to operate on all public streets in the Town, except for NC 58 and Coast Guard Road. The golf cart program is very popular, as it provides convenient beach access and an alternative mode of transportation, with approximately 700 golf carts permitted. Due to the geography of the public street network in Emerald Isle, some areas cannot fully utilize this program, and land use policies should promote increased golf cart access to these areas in a safe manner. Because of high traffic volumes and safety concerns, golf cart use permitted through the Town's local program should continue to be prohibited on NC 58 and Coast Guard Road; however, alternative golf cart connections and/or limited use of these roads should be considered in these areas in the future.



Emerald Isle Corporate Limits  
Image Source: HCP, Inc.

# MAP 16. BICYCLE & PEDESTRIAN IMPROVEMENTS



## FUTURE LAND USE

The Future Land Use Districts listed below provide a basis for zoning deliberations and redevelopment considerations. The future land use district summaries define suitable development patterns for all portions of the Town’s corporate limits. The future land use districts are defined as follows:

- **Single/Dual-Family Residential** – These areas are planned primarily for single-family and duplex structures. This category includes many existing areas that are already developed. It is the Town’s intent to encourage only single-family or duplex structures in this future land use category.
- **Mixed Residential** – These areas are planned for single-family, duplex structures, or multi-family structures in the future, and it is the Town’s intent to limit future multi-family structures to these areas only. This category includes many existing multi-family developments and existing mobile homes in Emerald Isle, and all such existing uses may continue.
- **Mixed Use** – These areas have been identified as portions of Town that will accommodate varying land uses (residential, including multi-family, and non-residential) within the same future land use district, intended to provide housing choices, goods and services for the surrounding neighborhoods, as well as the community overall, and to promote quality redevelopment in those areas.
- **Commercial Village** – These portions of Town are dedicated to commercial land uses intended to provide goods, tourism-based services, and businesses and professional services to both citizens and visitors. This district will also allow residential use that is complementary to commercial uses, but is not intended for solely residential housing.

- **Government** – These portions of Town are dedicated to properties used by Federal, State, or local government.
- **Wetlands** – These portions of Town are inundated with coastal wetlands and are not suitable for development.

Table 18 provides a summary of acreages associated with the future land use map.

Table 18. Future Land Use		
Land Use Category	Acres	% of Corporate Limits
Single/Dual-Family Residential	2,087.85	64.4%
Mixed Residential	250.15	7.7%
Mixed Use	125.79	3.9%
Commercial Village	69.01	2.1%
Government	82.31	2.5%
Coastal Wetlands	190.96	5.9%
Non-Coastal Wetlands	156.88	4.8%
Roads/Right-of-way	278.79	8.6%
<b>Total</b>	<b>3,241.74</b>	<b>100.0%</b>

Source: HCP, Inc.

## LAND USE CONFLICTS

The land use patterns throughout Emerald Isle’s corporate limits are fairly static in that future development potential is limited by the lack of available vacant land. Due to this lack of vacant developable land, future development patterns will likely be limited to infill development in single/dual-family residential areas, commercial development on remaining vacant land along the NC 58 corridor, and redevelopment of larger tracts with either single/dual-family residential, mixed residential, or mixed use development.



As these areas are developed or redeveloped, careful attention should be given to the potential impacts that development may have on surrounding residential areas. As development intensity increases, the Town should monitor the effectiveness of existing buffering standards to ensure that they are adequate to protect the well-established neighborhoods in the immediate vicinity of potential commercial development and redevelopment sites – in particular, those areas designated for mixed-use residential development.

### DEVELOPMENT/REDEVELOPMENT POTENTIAL

As noted, there are likely limited opportunities for large scale new development or redevelopment in Emerald Isle in the future. With most areas likely to experience only infill single/dual-family residential development, that leaves the following areas of Emerald Isle with significant development/redevelopment potential:

- New commercial development is likely to be concentrated on vacant parcels in areas along the NC 58 corridor, Reed Drive, and Crew Drive.
- A small area for new commercial development is available in eastern Emerald Isle near the Ocean Drive “dog-leg.”
- Redevelopment is most likely to occur in the mixed use areas of Village East, Village West, and Marina Village, and appropriate zoning districts have been established to promote redevelopment in these areas.
- There is potential for future redevelopment of existing mobile home parks located north of NC 58 between Forest Hills and Bogue Inlet Drive, as well as those located in Eastern Emerald Isle. These mobile home parks are projected for mixed residential development in the future.

- A large, vacant tract located behind the Town Government complex is projected for mixed residential development in the future.

Several maps are included to illustrate the areas of Emerald Isle with potential for large scale new development or redevelopment in the future.

Map 17 provides an overview of potential redevelopment sites and their projected future land use as depicted on the Future Land Use Map (Map 21).

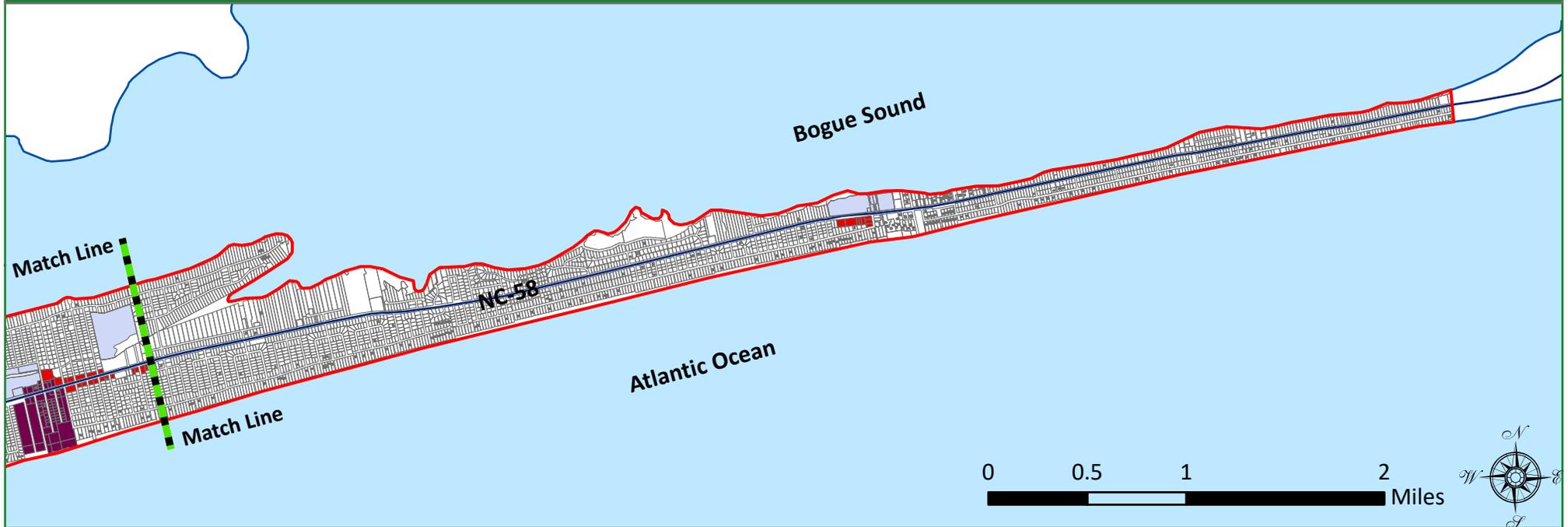
Map 18 provides a more detailed look at the Village East focus area that has been projected for future mixed use development.

Map 19 provides a more detailed look at the Village West focus area that has been projected for future mixed use development.

Map 20 includes a more detailed look at the Marina Village focus area that has been projected for future mixed use development.

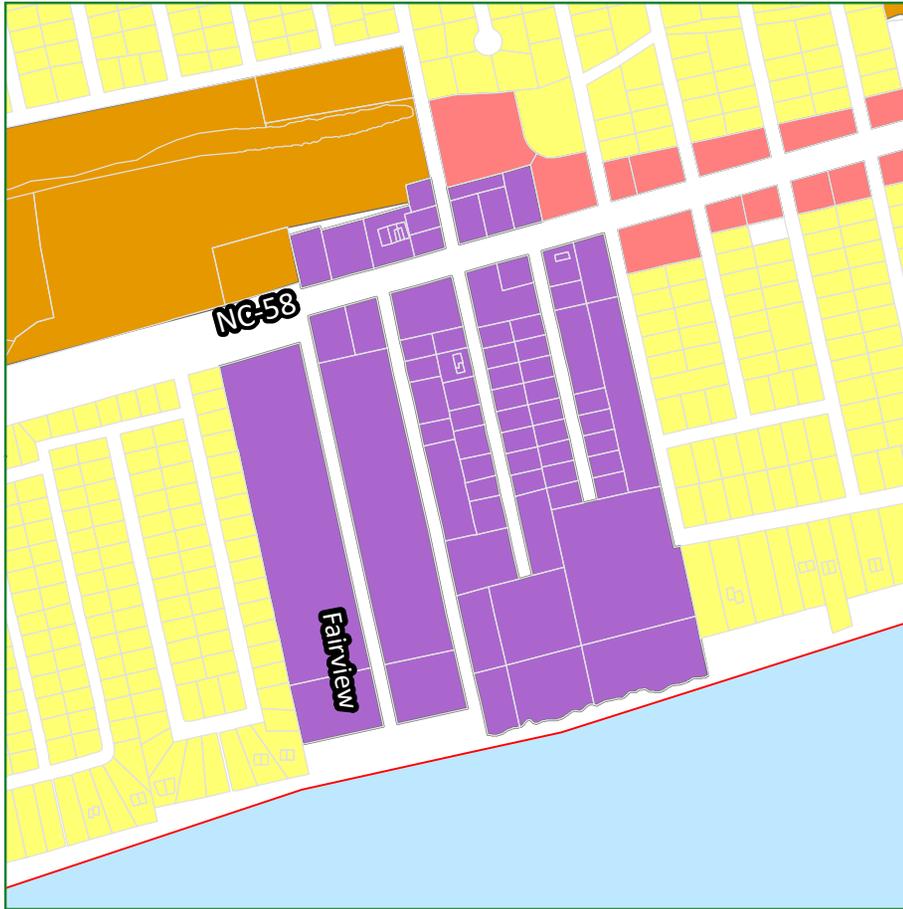
Map 21 represents the draft 2017 Future Land Use Map.

# MAP 17. DEVELOPMENT/REDEVELOPMENT POTENTIAL

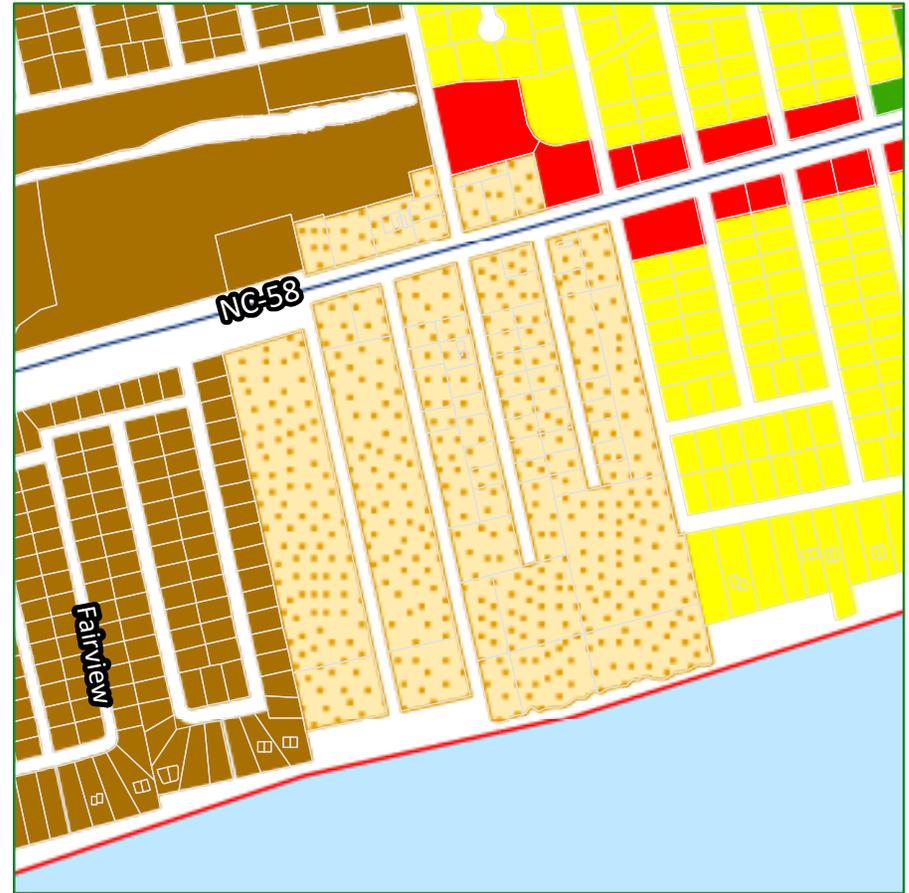


# MAP 18. VILLAGE EAST FOCUS AREA

**Future Land Use**



**Zoning**



**Future Land Use**

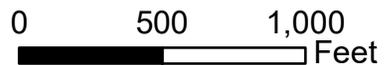
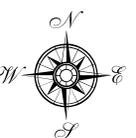
- Commercial Village
- Mixed Use
- Mixed Residential
- Single/Dual Family Residential

**Legend**

- Primary Roads
- Emerald Isle Corporate Limits
- Carteret County
- Parcels

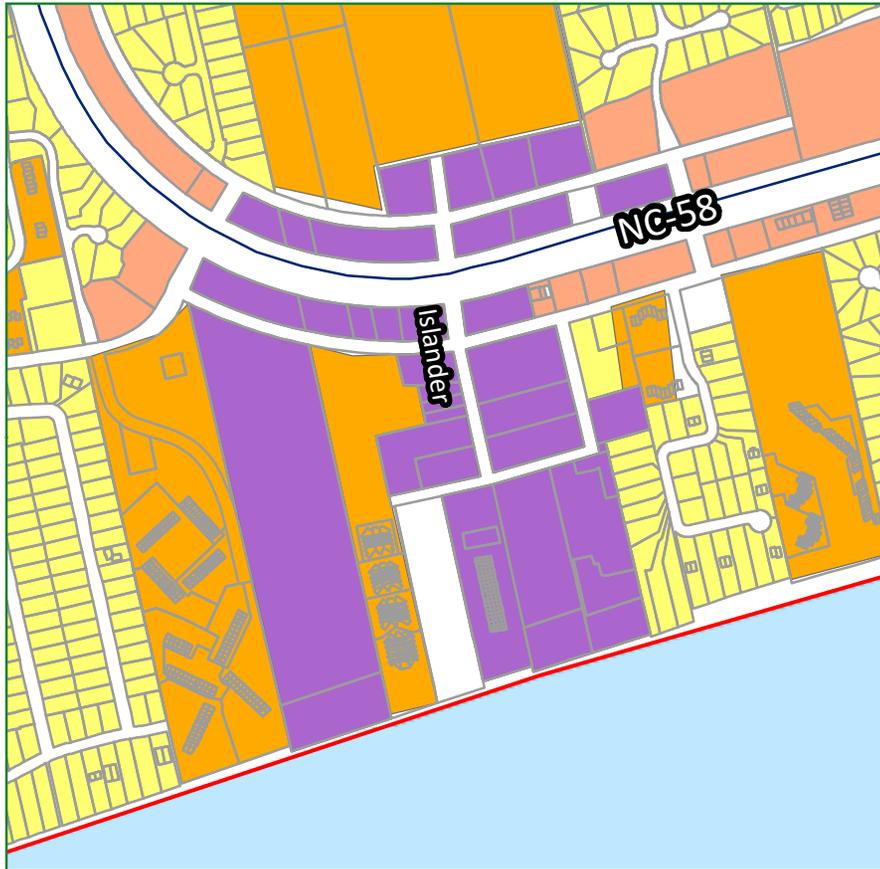
**Zoning**

- Business
- Mobile Home
- Residential
- Village East
- Mixed Use

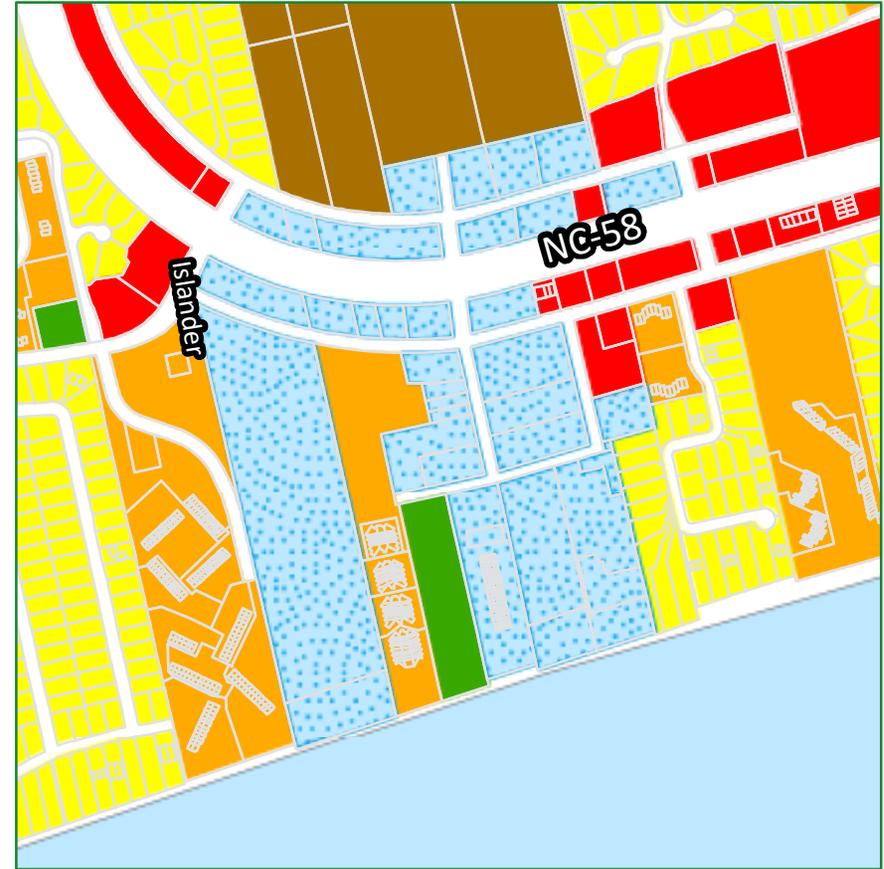


# MAP 19. VILLAGE WEST FOCUS AREA

Future Land Use



Zoning



## Legend

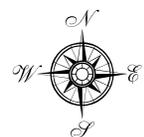
### Future Land Use

- Commercial Village
- Mixed Use
- Mixed Residential
- Single/Dual Family Residential

- Primary Roads
- Emerald Isle Corporate Limits
- Carteret County
- Parcels

### Zoning

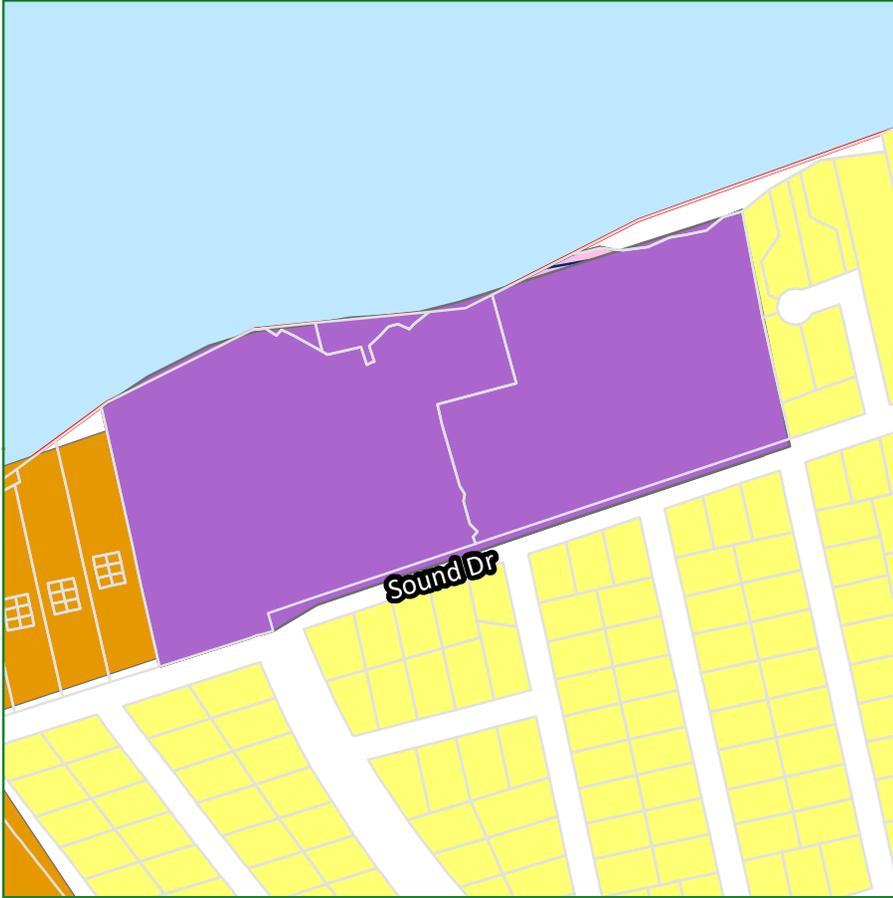
- Business
- Government
- Mobile Home
- Residential
- Residential Multi-Family
- Village West



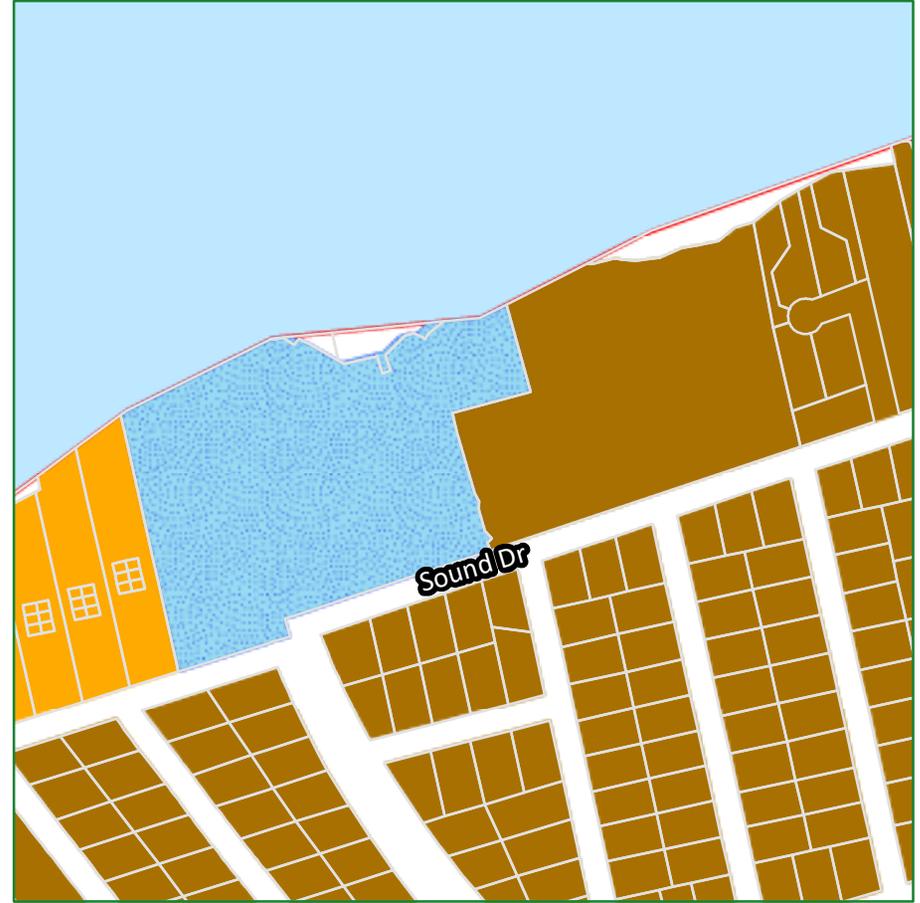
0 500 1,000  
Feet

# MAP 20. MARINA VILLAGE FOCUS AREA

Future Land Use



Zoning

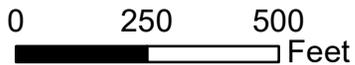
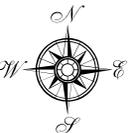


**Future Land Use**

- Mixed Use
- Mixed Residential
- Single/Dual Family Residential

**Legend**

- Primary Roads
- Emerald Isle Corporate Limits
- Carteret County
- Mobile Home
- Parcels
- Residential Multi-Family
- Marina Village

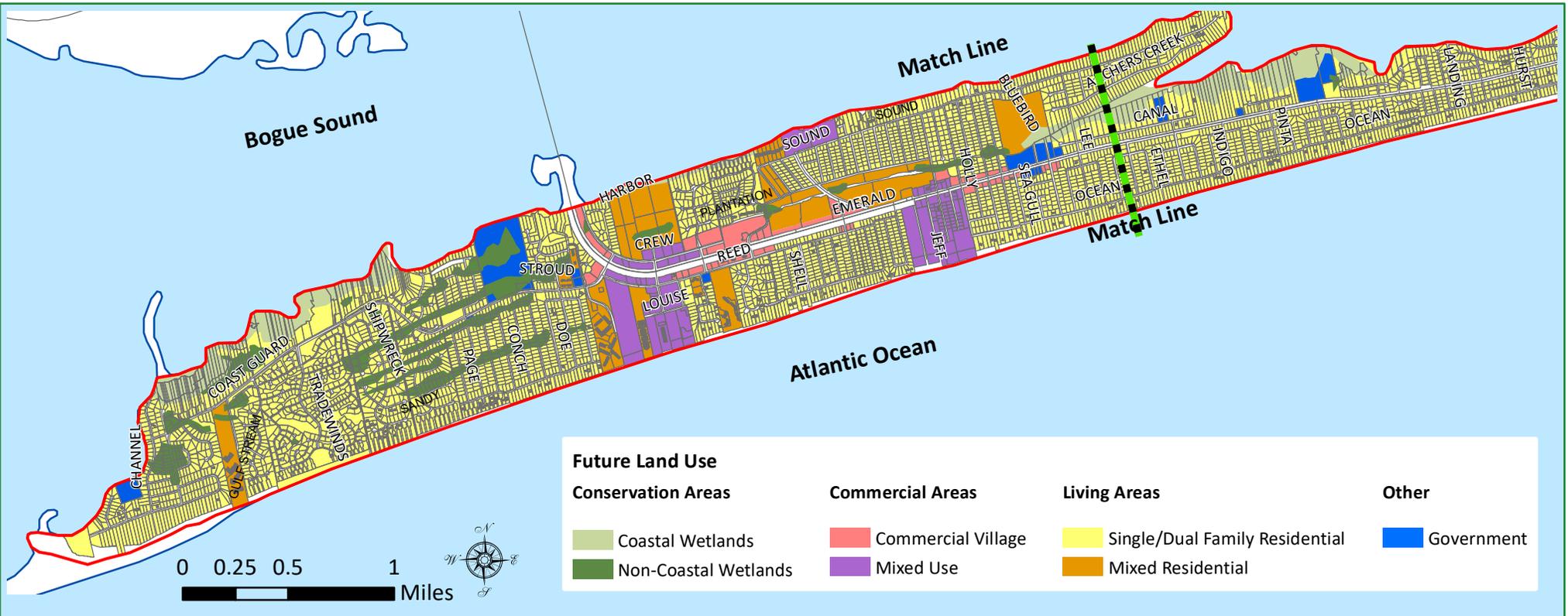


# MAP 21. FUTURE LAND USE



**Legend**

- + Emerald Isle Corporate Limits
- + Carteret County
- Roads



**Future Land Use**

Conservation Areas	Commercial Areas	Living Areas	Other
Coastal Wetlands	Commercial Village	Single/Dual Family Residential	Government
Non-Coastal Wetlands	Mixed Use	Mixed Residential	

# **Section 5. Goals & Implementing Actions**

## INTRODUCTION

This plan establishes goals and implementing actions for the land use/quality of life issues that will affect Emerald Isle's future. This section also responds to the NCAC 7B requirements for CAMA certified land use plans. The stated actions are designed to address issues which have been identified by the Steering Committee, staff, elected officials, and citizens of Emerald Isle.

The goals and implementing actions will also assist Town officials in making long-range decisions in such areas as economic development, provision of community services and facilities, transportation planning, community preservation, environmental management, and CAMA regulatory requirements.

This section of the plan includes specific implementing actions for each of the following areas of concern:

- Land Use Compatibility
- Public Access
- Infrastructure Carrying Capacity
- Natural Hazard Areas
- Water Quality
- Local Concerns

The responsibility for implementing the recommendations included in this plan belongs to the Emerald Isle elected officials. The adoption of this plan is not the end but rather the beginning of a continuous pragmatic process. Opportunity exists for the Town to provide positive direction to development as it continues to occur. How well this plan serves depends on the quality of the plan and how Emerald Isle officials administer local land use ordinances and capital spending programs. Creating a plan, workable conditions, and capital spending programs is not overly difficult. The true test will come in putting the

plan, ordinances, and programs into action on a day-to-day basis. Some of the actions stated in this plan may be implemented in months while others may require years to accomplish effectively. Planning is only as good as the commitment and abilities of the people responsible for implementing the plan. Emerald Isle has been blessed with involved citizens, dedicated elected officials, and competent staff. It is expected that this practice will continue into future years.

Goals and implementing actions frequently utilize the following words: should, continue, encourage, enhance, identify, implement, maintain, prevent, promote, protect, provide, support. The intent of these words is defined in Appendix C.

## PUBLIC INPUT

A successful planning process must have comprehensive, inclusive, and constructive input from the public. The plan will serve the needs of Emerald Isle's citizenry and should therefore, be written on their behalf. Throughout the planning process, a multitude of methods was used to solicit public input. A Comprehensive Plan Advisory Committee (CPAC), made up of key community representatives and citizens, was tasked with steering the consultant throughout the process. To supplement input received from this committee, a public input survey was distributed to all residents and property owners registered on the Town's outreach network. Additionally, the survey was posted continuously on a dedicated project website and survey data from transient visitors were captured through the delivery of 1,000 flyers/handouts distributed among local businesses.

Town-wide meetings were also used to gather citizen input. Survey results and information from the public meetings are summarized in this section. See Appendix D to view the community survey results in their entirety.



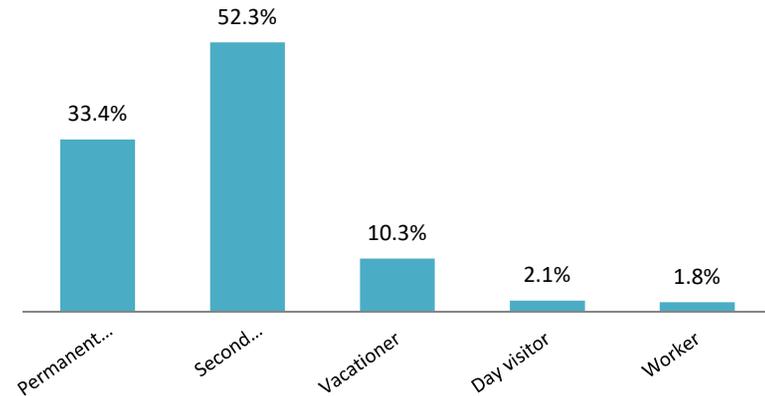
**Project Website**

At the outset of the project a website dedicated to the preparation of the Comprehensive Land Use Plan was established (<http://www.planei.org/>). Through November 8, 2016, there had been 10,621 “hits” on the website. All information concerning plan development was posted on the website. The website provided continuous access for the public to obtain information and provide input.

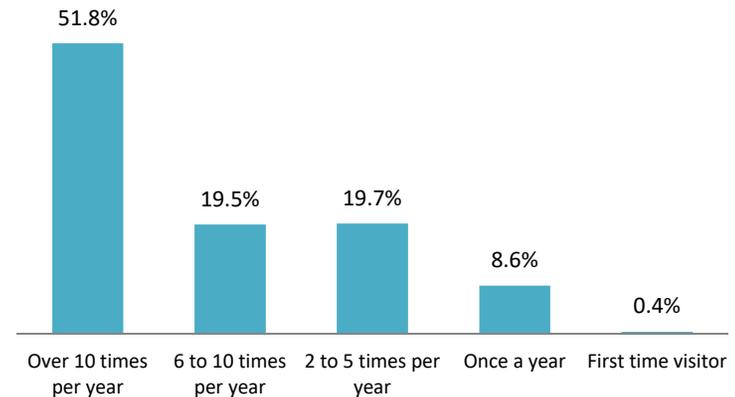
**Community Survey Results**

At the onset of the planning process, a community survey was created. The survey questions were drafted based upon stakeholder interviews conducted during project initiation. These interviews were conducted with various citizens, Town staff, and elected leaders. The survey was made available to residents online. The CPAC members were instrumental in distributing flyers at various institutional and vendor locations throughout Town. From May 2016 to July 2016, 1,479 survey responses were collected (494, or 33%, were permanent residents). All input from citizens was provided to the CPAC for review. The following summarizes the survey results:

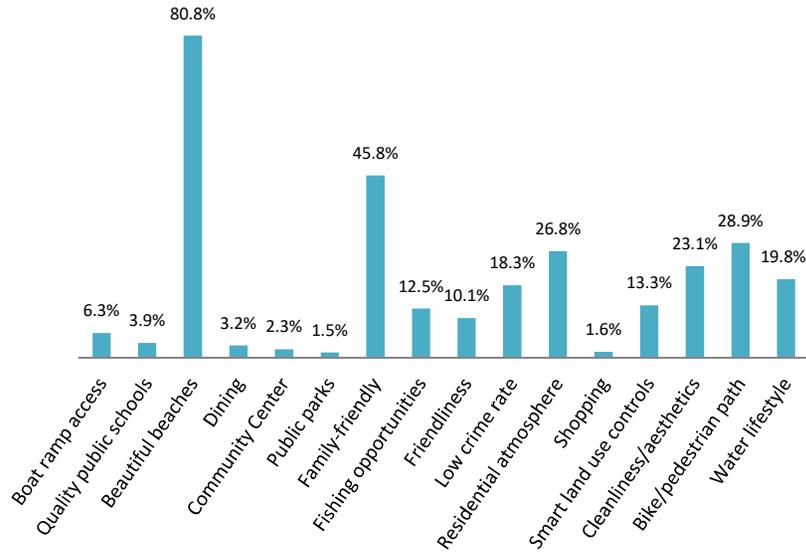
**Are you a permanent resident, second homeowner, vacationer, day visitor, or worker?**



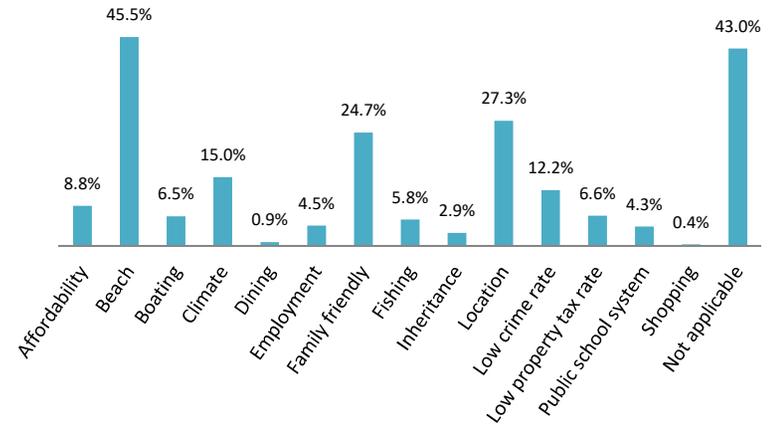
**If not a permanent resident, how often do you visit Emerald Isle?**



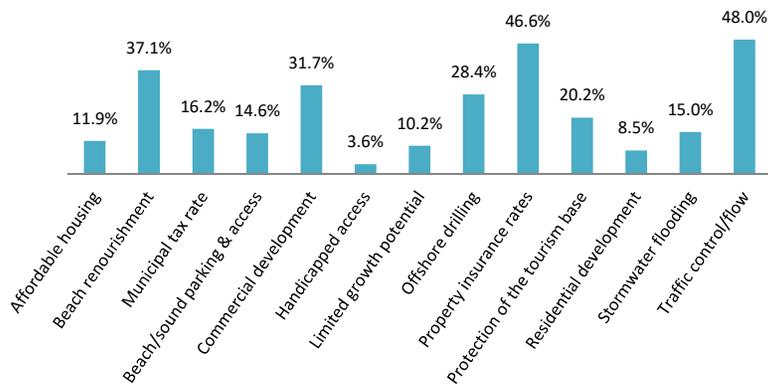
**What would you consider to be Emerald Isle's top THREE (3) assets?**



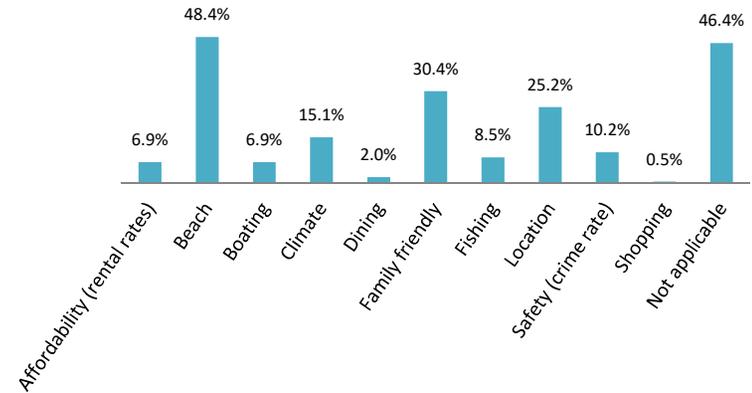
**Why did you choose Emerald Isle for permanent residence?**



**What would you consider the top THREE (3) most significant issues/concerns facing Emerald Isle?**



**Why did you choose Emerald Isle for a place to visit?**





### Town Meeting Results

In addition to the CPAC input and outreach survey, a Town Meeting public input meeting was conducted on August 20, 2016, to better understand the desires of residents. The meeting was advertised online, in the newspaper, and through posting of notices in public places. Approximately 140 people attended the August 20<sup>th</sup> meeting which focused on identification of the Town concerns/needs, prioritized by those in attendance. The following provides a summary of the top ten major concerns/needs identified:

1. Limit growth of high density RV parks
2. Improve traffic control/flow
3. Keep growth to a minimum
4. Protect wetlands & environment
5. Maintain height regulations
6. Promote traditional full service marina
7. Preserve dune/natural green area
8. Oppose offshore drilling
9. Prevent over-regulation
10. Advocate for fair homeowners insurance rates

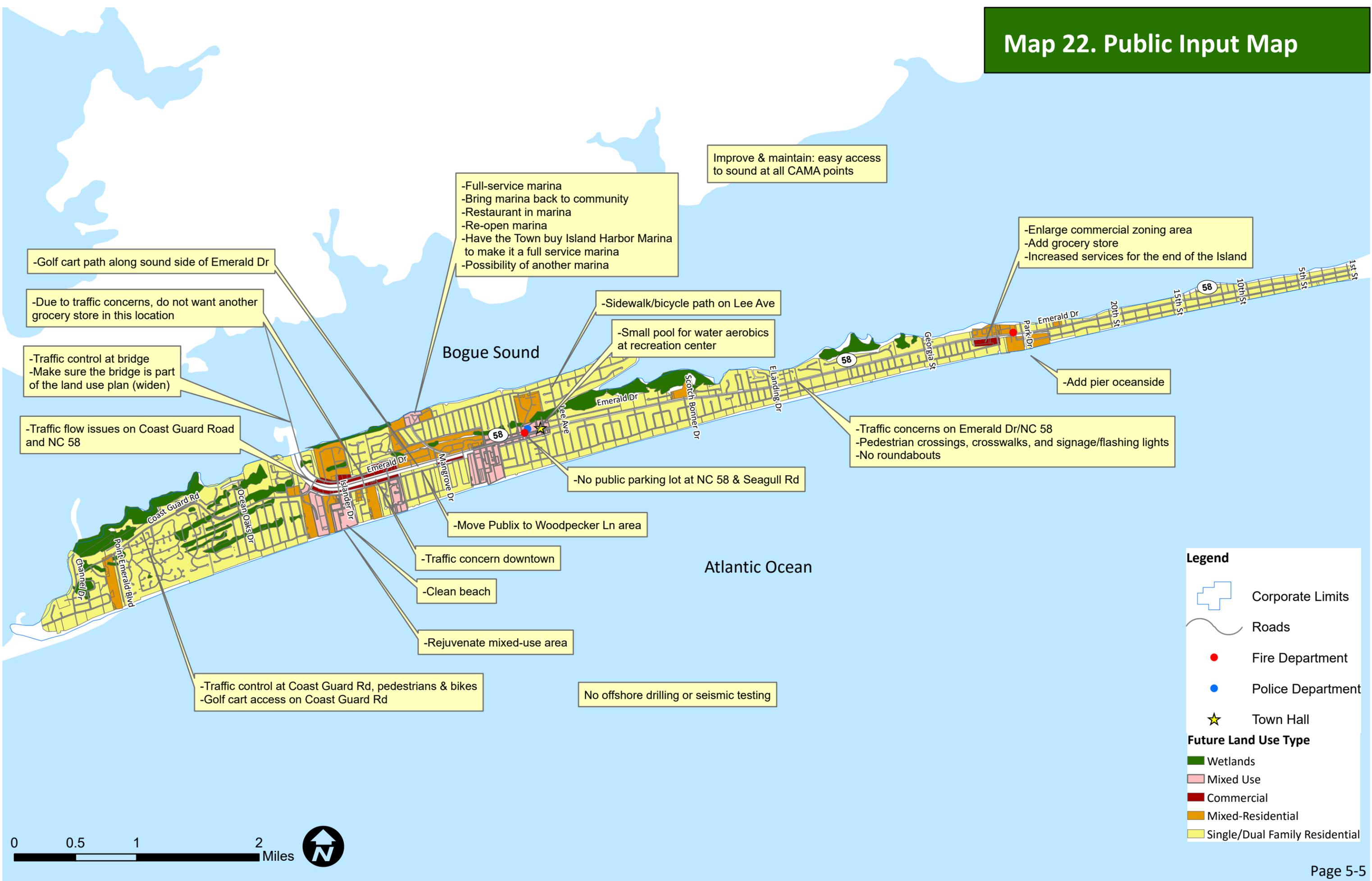
Attendees were also asked to participate in a map exercise to identify future land use concerns. Map 22 is a composite map which summarizes the map exercise input (the data on this map was not analyzed). Please note that Map 22 includes all comments and input received from all participants present at the August 20<sup>th</sup> public input meeting.

### GOALS

The following planning process goals have been heavily influenced by public input/opinion received during the planning process and the input of the CPAC. An annual review of these goals should be conducted by the Board of Commissioners and Planning Board, and adjusted, if necessary, as implementation is accomplished. These goals support carefully managed growth and have been prioritized by the CPAC.

- Satisfactory access for residents and visitors to the beaches and the sound for a range of activities.
- Land uses and land use patterns that are consistent with the capabilities and limitations of Emerald Isle’s natural systems.
- Preserved and reclaimed natural areas, such as Emerald Isle Woods Park, that have high biological, economic, and aesthetic value.
- Mitigation of risks from storms, flooding, beach erosion, and migration of Bogue Inlet.
- Better traffic flow and safety to accommodate the growing permanent and seasonal population.
- High quality waters in the ocean and sound that meet water quality standards and are approved for shellfishing.
- Stormwater that is managed to protect water quality and to prevent neighborhood flooding.
- Create a “village” type atmosphere in the commercial district that is pedestrian friendly, promotes successful businesses, is aesthetically pleasing and has attractive signage, and fosters a greater sense of community.

# Map 22. Public Input Map



-Golf cart path along sound side of Emerald Dr

-Due to traffic concerns, do not want another grocery store in this location

-Traffic control at bridge  
-Make sure the bridge is part of the land use plan (widen)

-Traffic flow issues on Coast Guard Road and NC 58

-Traffic control at Coast Guard Rd, pedestrians & bikes  
-Golf cart access on Coast Guard Rd

-Full-service marina  
-Bring marina back to community  
-Restaurant in marina  
-Re-open marina  
-Have the Town buy Island Harbor Marina to make it a full service marina  
-Possibility of another marina

Improve & maintain: easy access to sound at all CAMA points

-Sidewalk/bicycle path on Lee Ave

-Small pool for water aerobics at recreation center

-No public parking lot at NC 58 & Seagull Rd

-Move Publix to Woodpecker Ln area

-Traffic concern downtown

-Clean beach

-Rejuvenate mixed-use area

No offshore drilling or seismic testing

-Enlarge commercial zoning area  
-Add grocery store  
-Increased services for the end of the Island

-Add pier oceanside

-Traffic concerns on Emerald Dr/NC 58  
-Pedestrian crossings, crosswalks, and signage/flashing lights  
-No roundabouts

**Legend**

- Corporate Limits
- Roads
- Fire Department
- Police Department
- Town Hall

**Future Land Use Type**

- Wetlands
- Mixed Use
- Commercial
- Mixed-Residential
- Single/Dual Family Residential





## POLICIES REGARDING LAND USE AND DEVELOPMENT IN AEC'S

Emerald Isle accepts state and federal law regarding land uses and development in AEC's (Areas of Environmental Concern), including all NCAC 7H standards. By reference, all applicable state and federal regulations are incorporated into this document. No policies exceed the use standards and permitting requirements found in Subchapter 7H, State Guidelines for Areas of Environmental Concern. However, Emerald Isle does not consider the following issues to be relevant at this time within its planning jurisdiction:

- Maritime Forests
- Peat or Phosphate Mining's Impact on any Resource
- Development of Sound and Estuarine System Islands

The Areas of Environmental Concern and Fragile Areas within Emerald Isle's planning jurisdiction include the following:

- Public trust areas
- 404 wetlands
- Inlet hazard area
- Ocean erodible area
- Outstanding resource waters (ORW)

For the issuance of CAMA permits within areas of environmental concern, the state's minimum acceptable use standards are defined by 15A NCAC 7H. A local unit of government must adopt policies which are, at a minimum, equal to and consistent with the state's minimum use standards.

The second area of land use plan application is that of establishing policies to guide the jurisdiction's local planning. This process may apply both within areas of environmental concern where CAMA regulations apply and in non-CAMA regulated areas of the town's planning jurisdiction. Under North Carolina legislation, land use plans are not regulatory controls. Non-CAMA related recommendations must be implemented with local land use ordinances such as a Unified Development Ordinance. If this plan recommends that the average residential density should be three dwelling units per acre within a particular area, then the density must be achieved through local regulatory controls.

The final area of application is that of "Consistency Review." Proposals and applications for state and federal assistance, or requests for agency approval or projects, are normally reviewed against a jurisdiction's land use plan to determine if the project is consistent with local policies. Inconsistencies of a project with local policies could serve as grounds for denial or revision of a project. For example, an individual or agency may request state or federal funding to construct a 30-unit assisted living housing project. If the proposed location of the project is within an area in which this land use plan states that the residential density should not exceed two dwelling units per acre, the project may be judged to be inconsistent with the local land use plan.

Note the following clarifications:

- No policy is subordinate to another.
- All management topics have equal status.
- The future land use map may show some areas in a developed category which may also include sensitive habitats or natural areas. The intent of that development should be designed/permitted to protect these areas through utilization of concepts such as specific in-field verification and mapping, on-site plans, and subdivision plats. Development/project approval should be based on project design which avoids substantial loss of important habitat/environmentally sensitive areas.

## LAND USE MANAGEMENT TOPICS

A key objective of any comprehensive plan is the creation of a robust and achievable set of goals, objectives, and implementing actions. These items should support implementation of the future land use map. Implementation of these strategies is the responsibility of Emerald Isle elected officials, staff, and citizens. Decisions made as a result of this plan should serve to enhance the quality of life for residents, support long-term economic growth, and promote viable land use and development patterns. This plan serves as the town's overall comprehensive plan and also provides for compliance with the CAMA Land Use Plan requirements.

CAMA Land Use Plans must support the goals of CAMA, define the CRC's expectations for the land use policies, and provide a basis for land use plan review and certification. Goals, objectives, and implementing actions are provided for each of the following CAMA management topics: Public Access, Land Use Compatibility, Infrastructure Carrying Capacity, Natural Hazard Areas, and Water Quality, in addition to other local areas of concern. These strategies apply to the town's entire planning jurisdiction.

This plan is intended to support Emerald Isle's vision statement (page 1-7). No negative impacts are anticipated by the implementation of the goals, objectives, and policies/implementing actions which are included in this plan. Each statement in the following section is designated as a policy statement (P), implementing action (I), or both (P/I). All policies/implementing actions are prioritized/scheduled by: high; medium; low; or continuing. The scheduling for these priorities following plan adoption is: high - within 2 fiscal years (FY2017-2018 to FY2018-2019); medium - 3 to 5 fiscal years (FY2019-2023); low - 6 to 8 fiscal years (FY2024-2026); continuing - a daily implementing action.

**NOTE: It is intended that all goals, objectives, and implementing actions are consistent with applicable State and Federal requirements when State and Federal requirements apply.** The following item exceeds State or Federal requirements, including Subchapter 7H: Policy/Implementing Action 16.



## MANAGEMENT GOALS, PLANNING OBJECTIVES, AND POLICIES/IMPLEMENTING ACTIONS

### Public Access

Public access is important to the Town for the provision of recreational access and as a contributor to the Town's tourism industry and quality of life.

**Management Goal:** Maximize public access to the beaches and the public resources of the coastal region.

**Planning Objectives:** Policies that address access needs and opportunities, in strategies to develop public access and provisions for all segments of the community including persons with disabilities. For oceanfront communities, establish access policies for beach areas targeted for nourishment.

### Policies/Implementing Actions:

1. The Town will continue to maintain, improve, reclaim, and expand upon existing Public Access locations to ensure that residents and visitors have satisfactory access to the ocean beach and the sound. These efforts will focus on providing convenient public access sites to all portions of Town, especially residential areas on both the oceanfront and along the Bogue Sound shorefront as well as beach areas targeted for beach renourishment. The Town will establish new access sites if and when an opportunity arises, but the Town will continue to improve upon amenities and parking availability at existing access sites (P/I). **Schedule: Continuing**
2. The Town will provide satisfactory access to residents and visitors of all abilities, where feasible. It will review the

community's needs for universal access and take steps to eliminate barriers (P). **Schedule: Continuing**

3. The Town will seek financial assistance from the State and Carteret County for development of additional access facilities (I). **Schedule: Continuing**
4. Where there are currently dedicated but unimproved access locations, the Town will: (1) continue its policy of accepting maintenance of properly constructed walkways and crossovers built by surrounding property owners; and (2) identify walkways and crossovers where private encroachments exist and take steps, where practical, to open these access points to the public (P/I). **Schedule: Continuing**
5. The Town will consider service to the beach and sound access locations in the design and development of its pedestrian and bicycle systems and facilities (I). **Schedule: Continuing**
6. The Town will seek to protect public access to the ocean beach and the sound in its review and approval of development and redevelopment plans (P). **Schedule: Continuing**
7. The Town supports the installation of new public crosswalks at key intersections along NC 58 to promote safe access between the ocean and sound sides of NC 58 (P). **Schedule: High**
8. The Town will continue a beach conservation and nourishment program as part of an overall program to mitigate risks from coastal storm events (I). **Schedule: High**
9. The Town will promote the development of a traditional full-service marina to service residents and visitors. The Town will seek to provide flexibility in development regulations to foster

sub development provided said flexibility not in conflict with other land use policies included herein. The Town will also consider other viable options to achieve this goal (P).

**Schedule: Medium**

10. The Town will promote the continued operation of Bogue Inlet Pier (a privately-owned ocean fishing pier); however, the Town will also continue historical efforts to develop a new ocean fishing pier to serve the community in the event that Bogue Inlet Pier ceases to exist in the future (P). **Schedule: Low**

### Land Use Compatibility

Land use compatibility is always an issue as the Town looks to balance growth with the protection of valuable natural resources. As development occurs, the Town desires to protect its maritime forest, estuarine, and extensive sensitive natural and open space areas. The future land use map reflects the concentration of future development.

**Management Goal:** Promote the appropriate balance between private property rights, economic development, environmental protection, and community cohesiveness.

**Planning Objectives:** Policies that promote an attractive community, a high quality of life, and a unique sense of place while mitigating risks to public health, safety, and welfare.

### **Policies/Implementing Actions:**

11. The Town supports protection and conservation of Emerald Isle's coastal wetlands due to the essential role that they play in protecting water quality and providing food and habitat for fish and wildlife (P). **Schedule: Continuing**

12. The Town endorses the CAMA use standards, which may be minimum requirements, and the development permit system as effective tools for conserving coastal wetlands (P). **Schedule: Continuing**
13. The Town supports actions by property owners to slow or prevent erosion along Bogue Sound and its tributaries that are consistent with CAMA rules. The Town encourages property owners to use approved erosion prevention methods that are the most effective for preserving and restoring coastal wetlands (P). **Schedule: Continuing**
14. The Town recognizes the importance of the 575-foot outstanding resource waters (ORW) estuarine shoreline in protecting water quality in Bogue Sound, and supports use standards that preserve natural barriers to erosion, require vegetated buffers, require on-site retention of stormwater, and keep impervious surfaces to a minimum. The Town will continue to enforce local ordinances that support these objectives in the ORW-estuarine shoreline (P). **Schedule: Continuing.**
15. The Town will only allow uses in estuarine waters that are compatible with protection and conservation of their biological and community values. Proposed uses within estuarine waters should be water-dependent in nature, and design considerations should focus on protecting water quality within adjoining public trust waters. Appropriate uses include marinas, public access sites, docks, piers, and erosion control devices (P). **Schedule: Continuing**



- 16. Floating homes are expressly prohibited within public waters bordering the Town of Emerald Isle ; this strategy shall not apply to approved marina facilities (P). **Schedule: Continuing**
- 17. The Town of Emerald Isle considers local environmental resources (estuarine waters, subaquatic vegetation, coastal and noncoastal wetlands) as valuable assets and critical to the Town’s economic sustainability. The Town will factor environmental protection measures into all development approvals, especially those proposed within Areas of Environmental Concern (P). **Schedule: Continuing**
- 18. The Town strongly encourages overall land use and development patterns that support retention of the Emerald Isle’s small-town character, its existing quality of development, and its family atmosphere (P). **Schedule: Continuing**
- 19. The Town strongly encourages development practices that preserve important environmental features, provide a high quality living environment, address transportation needs, and emphasize compatibility with neighboring residential areas (P). **Schedule: Continuing**
- 20. Single-family and dual-family residential structures are strongly encouraged unless the development incorporates innovative site plan concepts such as clustering, mixed-use development, or “traditional neighborhood design” (P). **Schedule: Continuing**
- 21. The Town continues to allow multi-family development at a density not to exceed 8.0 dwelling units per acre. Areas for multi-family development are designated on the Future Land Use Map as mixed residential (P). **Schedule: Continuing**
- 22. The Town supports development of a more traditional “town center” that builds on development and redevelopment of the existing business areas. These development and redevelopment efforts should focus on providing a range of goods and services, serving both the year-round and transient population base, while establishing a sustainable built environment that has the potential to support a range of uses. These efforts align with the goal of preserving and enhancing Emerald Isle’s small town atmosphere. When considering future developments within these portions of Town, the following should be considered during design and approval phases of the project:
  - The town center will encourage mixed uses such as retail services, restaurants, entertainment, and residences.
  - It will take advantage of the ocean beach and strive to provide easy pedestrian and bike connections to surrounding neighborhoods and the sound.
  - It will encourage interconnections between businesses and shopping centers that minimize the need for trips on NC 58 (P/I). **Schedule: High**
- 23. The Town supports development of a commercial convenience area on Emerald Drive between Connie and Ocean Drives (P). **Schedule: High**

24. The Town recognizes the potential for location of new hotels or hotels and encourages location of these developments in the area designated on the Future Land Use Map for mixed use development (P). *Schedule: High*
25. The Town supports the development of complementary residential uses above ground floor commercial uses within the Commercial Village area (P). *Schedule: High*
26. The Town encourages the siting of commercial and mixed use buildings closer to the property line (street/right-of-way) and encourages the location of rear and/or side yard parking facilities (P/I). *Schedule: High*

### Infrastructure Carrying Capacity

Diversification of the Town's economy is dependent upon maintaining and providing adequate community and infrastructure services. In addition, future Town capital improvements plans will strongly influence the location of future land uses.

**Management Goal:** Ensure that public infrastructure systems are appropriately sized, located, and managed to meet long term needs, and so that quality and productivity of AECs and other fragile areas are protected or restored.

**Planning Objectives:** Policies that ensure adequate provision of public services and facilities to promote quality development, a high quality of life, and the protection of environmentally sensitive areas.

### Policies/Implementing Actions:

27. The Town supports transportation improvements that enhance area access and travel within the region without harming Emerald Isle's "small town atmosphere." These efforts shall include providing safe and convenient access between ocean- and sound-side portions of the Town, as well as expansion of pedestrian and bicycle transportation facilities (P/I). *Schedule: High*
28. The Town will seek to form a partnership with other Bogue Banks communities and the NC Department of Transportation to develop a strategy for additional access between the mainland and the island to address seasonal traffic demand and to provide faster and safer access in times of storms. The Town supports a mid-island bridge as a preferred solution to congestion on NC 58 (I). *Schedule: High*
29. The Town supports the construction of traffic improvements at the Town's four signalized intersections along NC Highway 58 to reduce congestion and promote a more efficient flow of traffic throughout the Town of Emerald Isle (P/I). *Schedule: High*
30. The Town will ensure that land use and development decisions and management of transportation facilities complement and enhance each other (P/I). *Schedule: Continuing*
31. The Town and Bogue Banks Water Corporation will periodically review population growth, development patterns, and water system capacity to ensure balance between the public water supply and population growth and development. Through these efforts, the Town will work to ensure capacity as well as quality regarding the Town's potable water system (I). *Schedule: Continuing*
32. The Town will maintain a comprehensive stormwater management program. This program will include three components: (1) protection and enhancement of water quality;



(2) actions to address flooding in existing neighborhoods; and  
 (3) enforcement of stormwater management ordinances and policies for new development and redevelopment (I).

**Schedule: Continuing**

- 33. All infrastructure carrying capacity policies/implementing actions will be carried out in a manner that minimizes impacts on AEC’s and other fragile areas (I). **Schedule: Continuing**
- 34. The Town will continue to rely on septic tanks and private “package treatment plants” for wastewater treatment. However, the Town will consider strategies to provide centralized wastewater treatment facilities to serve commercial and mixed use districts only (P/I). **Schedule: High**

**Natural Hazard Areas**

The preservation of natural hazard areas is important to the Town’s quality of life and the economy. The Town must deal with a range of issues associated with natural hazards, from hurricane preparation to beach nourishment and management.

**Management Goal:** Conserve AEC’s and maintain barrier dunes, beaches, floodplains, and other coastal features for their natural storm protection functions and their natural resources giving recognition to public health, safety, and welfare issues.

**Planning Objectives:** Policies that promote responsible development and that minimize threats to life, property, and natural resources resulting from erosion, high winds, storm surge, flooding, or other natural hazards.

**Policies/Implementing Actions:**

- 35. Due to the unique risks to life and property that exist within the area designated as the Ocean Hazard System AEC, the Town strongly supports the State policies that regulate the location and intensity of development in these areas. The Town will enforce local policies that bolster the State’s programs (P). **Schedule: Continuing**
- 36. The Town will avoid taking any action or approving any action that materially damages the frontal dune system or that hampers its recovery from storm damage (P/I). **Schedule: Continuing**
- 37. Due to the valuable role that vegetative cover plays in stabilizing soil and dune systems and increasing resistance to damage from storms, the Town opposes excessive removal of vegetation for development or redevelopment (P). **Schedule: Continuing**
- 38. The Town supports maintenance of the Bogue Inlet, on an as-needed basis, to address its encroachment on the western shoreline of the island, to promote safe navigation, and to protect valuable recreational and environmental resources (P/I). **Schedule: High**
- 39. The Town believes that safety and noise hazards within the Accidental Potential Zone (APZ) and noise contours should be disclosed to new buyers prior to purchase. Such disclosures are best conducted through real estate brokers in concert with land and property transactions (P/I). **Schedule: High**

40. The Town will not rezone areas within the APZ to a zoning district that allows higher residential densities than the current zoning district. The exceptions to this policy are the commercial areas identified as Commercial Village, Village East, Village West and Marina Village, which are specifically targeted for redevelopment in the future and may include a mix of residential and commercial uses (P/I). **Schedule: High**
41. Within the areas affected by elevated accident potential and higher noise, the Town encourages property owners and developers to consider compatible land uses and appropriate construction techniques when developing or redeveloping their property. The Town will provide property owners with informational brochures and access to maps that can assist them in evaluating the impact of potential accidents or noise on their property (P/I). **Schedule: Continuing**
42. When feasible, the Town seeks to promote government acquisition of land in the Accident Potential Zone (APZ) to further reduce potential future conflicts between Bogue Field and residents in the APZ (P). **Schedule: High**
43. The Town allows development and redevelopment within special flood hazard areas subject to the provisions and requirements of the National Flood Insurance Program, CAMA regulations, and the local zoning ordinance (Flood Damage Prevention section). Special flood hazard areas are those areas delineated on the Flood Insurance Rate Maps (FIRM) that have a 1% chance of flooding in any one year (P/I). **Schedule: Continuing**
44. The Town will adopt and periodically update a Hazard Mitigation Plan that addresses the community's natural hazards and meets the requirements of the NC Division of Emergency Management and the Federal Emergency Management Agency (P/I). **Schedule: Continuing**
45. The Town will maintain or improve its Community Rating System (CRS) score to make the community safer from flood risks and to reduce premiums for Federal flood insurance (I). **Schedule: Medium**
46. The Town will continue to work with the Emerald Isle Fire Department to maintain or improve its #4 Insurance Services Office (ISO) Rating (I). **Schedule: Continuing**
47. The Town will work cooperatively with NCDOT to improve traffic flow through Emerald Isle to promote orderly evacuation procedures (I). **Schedule: Continuing**
48. The Town encourages the use of higher engineering and building standards for new construction to build more resilient structures. The use of these standards may potentially reduce wind and hail insurance premiums (P). **Schedule: High**

### Water Quality

Water quality is important to the Town's quality of life and economic development. Water quality impacts the Town's natural assets and the activities of the Town's population. Preservation of the Town's water quality demands proper management of stormwater runoff.

**Management Goal:** Maintain, protect, and where possible, enhance water quality in all coastal wetlands, creeks, and estuaries.



**Planning Objectives:** Policies that effectively manage stormwater runoff to maintain or improve water quality in and around Emerald Isle.

**Policies/Implementing Actions:**

- 49. The Town will continue a comprehensive stormwater management program that controls the amount and quality of stormwater in an effort to maintain and enhance water quality in the ocean, Bogue Sound, and Archer's Creek (P/I). *Schedule: Continuing*
- 50. Reduce stormwater runoff to the ocean beaches, Bogue Sound, and the sound's tributaries from all public areas such as streets, parking lots, access areas, and ramps (P/I). *Schedule: Continuing*
- 51. Apply stormwater ordinances to new private development and significant redevelopment of existing properties (I). *Schedule: Continuing*
- 52. Retain vegetated buffers along drainageways where feasible (P). *Schedule: Continuing*
- 53. Cooperate with property owners to reduce sedimentation and pollution from local runoff (P). *Schedule: Continuing*
- 54. The Town will ensure that its land use and development policies support the goal of maintaining and enhancing water quality (P). *Schedule: High*
- 55. Maintain "low" density development patterns that are consistent with maintaining and enhancing water quality (P). *Schedule: High*

- 56. Encourage innovative development techniques and review current development regulations to identify opportunities to reduce impervious surfaces (P). *Schedule: High*
- 57. The Town recognizes that management of land uses and development in the 575-foot outstanding resource water shoreline of Bogue Sound is a major requirement for maintaining and enhancing water quality in the Sound. The Town will ensure that its land use and development regulations are consistent with the proper management of this resource and the applicable state and federal development regulations (P). *Schedule: Continuing*
- 58. The Town supports septic tanks as the primary means of wastewater treatment where soil limitations are not a factor (P). *Schedule: Continuing*
- 59. To minimize septic system problems, the Town will undertake an education program that provides information to property owners on proper maintenance of septic tanks (I). *Schedule: Medium*
- 60. Where the use of septic tanks for wastewater treatment is not consistent with public health or environmental quality, the Town supports the use of properly maintained "package" wastewater treatment plants (P). *Schedule: Continuing*

**Local Concerns**

In addition to the CRC Management Topics outlined above, CAMA guidelines also allow for the inclusion of policies to address local areas of concern. The following provides strategies which address concerns and/or issues unique to the Town of Emerald Isle.

**Policies/Implementing Actions:**

61. The Town will maintain its current building height limits (P).  
***Schedule: Continuing***
62. The Town will continue to maintain the Emerald Isle Gateway on Emerald Drive, beginning at the Cameron Langston Bridge and extending to the Coast Guard Road intersection. The Gateway will focus on preserving existing vegetation, introduction of complementary native vegetation, and minimizing public and private signage (P/I). ***Schedule: Continuing***
63. The Town will continue to place a high priority on aesthetics and landscaping in all public rights-of-way (P). ***Schedule: Continuing***
64. The Town supports establishment of a multi-purpose “meeting and events” center/facility that will provide additional opportunity for corporate or other group events. Such a development must comply with all State and local land development regulations (P/I). ***Schedule: High***
65. The Town will continue to facilitate the use of golf carts on public streets. Golf cart usage must comply with all NCDOT and local rules and regulations (P/I). ***Schedule: Continuing***
66. The Town supports development of wastewater package treatment plants to serve the Village East, Village West, and Marina Village mixed use districts (P). ***Schedule: High***
67. The Town will consider undertaking a community character/place-making campaign to bolster Emerald Isle’s economic development efforts (I). ***Schedule: Medium***
68. The Town recognizes the need and demand for affordable housing options in Emerald Isle, and will not take any action to force the removal or closure of existing mobile home parks, RV parks, or mobile homes on individual lots. Any such actions must be initiated by the property owner or be the result of the application of the Town’s existing zoning ordinances governing nonconformity (P). ***Schedule: Continuing***
69. The Town supports the development and recruitment of additional knowledge-based and technology-based businesses in Emerald Isle (P/I). ***Schedule: High***
70. The Town supports the improvement and enhancement of information technology infrastructure in Emerald Isle to better serve residents and visitors and to promote additional remote work opportunities (P/I). ***Schedule: High***
71. The Town opposes further homeowner / wind & hail insurance rate increases in coastal communities, and supports efforts to develop a fairer insurance rate structure that more equitably distributes insurance costs among inland and coastal communities (P/I). ***Schedule: High***
72. The Town seeks to provide additional active recreational facilities including athletic fields and other individual and team sports facilities (I). ***Schedule: High***

# Section 6. Tools for Managing Development

## GUIDE FOR LAND USE DECISION MAKING

It is intended that this document be an integral part of the Emerald Isle decision-making process concerning future land use. This document, including all guidance, policies/implementing actions, and the future land use map, should be consulted prior to any decision being made by the Emerald Isle staff, Planning Board, and/or Board of Commissioners concerning land use and development.

## EXISTING DEVELOPMENT PROGRAM

The existing management program includes the following plans/ordinances: Zoning Ordinance, Subdivision Regulations, Flood Damage Prevention Ordinance, Stormwater Management Ordinance, 2004 CAMA Core Land Use Plan Update, Bogue Banks Master Beach Nourishment Plan, and the Pamlico Sound Regional Hazard Mitigation Plan.

These documents were consulted as resources in developing this plan. Moving forward, all amendments to these regulatory and policy documents outlined above will consider the recommendations outlined in this land use plan. All amendments will be prepared by staff and subject to review by the Town's Planning Board and Town Council.

## CONTINUING PLANNING PROCESS

This plan provides the framework upon which zoning and subdivision regulations and the capital improvements plan should be based. In fact, the preparation of a land use plan and map is mandated by North Carolina legislation as a prerequisite for zoning for both cities and counties. Specifically, in implementing this plan, the following should serve as guiding land use/planning principles:

- Consider the future land use map as part of the policies included in this plan.
- Consult this plan, including the future land use map, during the deliberation of all rezoning requests and proposed text amendments.
- Consider the following in deliberation of all zoning petitions:
  - All deliberations should consider this plan's goals, implementing strategies, and future land use map.
  - All uses that are allowed in a zoning district must be considered. A decision to rezone or not to rezone a parcel or parcels of property cannot be based on consideration of only one use or a partial list of the uses allowed within a zoning district.
  - Requests for zoning changes should not be approved if the requested change will result in spot zoning.
  - Access management should be considered in all land use/zoning decisions.
  - The concept of uniformity should be supported in all zoning deliberations. Uniformity is a basic premise of zoning which holds that all land in similar circumstances should be zoned alike; any different circumstances should be carefully balanced with a demonstrated need for such different treatment.

Specifically, the Planning Board and Board of Commissioners should ask the following questions:

- Is the request in accordance with this plan? Zoning regulations shall be made in accordance with the Town's Comprehensive Plan (NCGS 160A-383). When adopting or rejecting any zoning amendment, the Board of Commissioners shall also approve a statement describing whether its action is consistent with the Town's Comprehensive Plan and any other officially adopted plan that is applicable, and briefly explaining why the Board of Commissioners considers the action taken to be responsible and in the best public interest.
- Will the request have a serious adverse impact on traffic circulation and other infrastructure?
- Will the request have an adverse impact on other Town services, including police protection, fire protection, or public works?
- Will the request have an adverse impact on Carteret County Schools?
- Is there a good possibility that the request, as proposed, will result in lessening the enjoyment or use of adjacent properties?
- Will the request, as proposed, cause serious noise, odors, light, activity, or unusual disturbances?
- Does the request raise legal questions such as spot zoning, hardship, or violation of precedents?
- Does the request adversely impact water quality or other natural resources?

- Will the request adversely impact beach maintenance or access?

Following adoption of this plan, the Town may implement the following to ensure effective citizen participation:

- Encourage diverse public participation and citizen input in all land use decisions and procedure development processes and encourage citizen input.
- Publicize all meetings of the Planning Board and Board of Adjustment through newspaper advertisements, public service announcements, and the Town's website.
- Utilize broad-based advisory committees to assess and advise the Town on special planning issues/needs, including implementation of this plan.
- Make notices of all Planning Department activities available on the Town's website.
- At a minimum, update this plan every ten to fifteen years.

### LAND USE PLAN AMENDMENTS

At which time the Town of Emerald Isle Comprehensive Plan needs to be amended, the Town will apply the guidelines for Land Use Plan Amendments under Subchapter 7B, Section 0803 of the North Carolina Administrative Code. A brief summary of those guidelines is provided below.

- The Land Use Plan may be amended as a whole by a single resolution or in parts by successive resolutions. The successive resolutions may address geographical sections, county divisions, or functional units of subject matter.

- The Town must hold a public hearing of which the public has been properly notified.
- Copies of the proposed amendment(s) must be available for review at the Town Municipal Building during designated hours.
- The executive secretary or a designated agent of the Coastal Resources Commission shall be given notice of the public hearing, a copy of the proposed amendment(s), and a reason for the amendment(s).
- Amendments must be consistent with the Coastal Resources Commission's Land Use Planning Guidelines (15A NCAC 7B) and, if possible, with the Land Use Plans of adjacent jurisdictions.
- If possible, the Town shall adopt the plan amendments expeditiously following the close of the public hearing.
- The Town will provide the executive secretary of the Coastal Resources Commission with a copy of the amended text or maps, and certification of adoption within 7 days of adoption.

## CITIZEN PARTICIPATION

For the preparation of this plan, the Emerald Isle Board of Commissioners adopted a citizen participation plan. A copy of that plan is included as Appendix A. Following adoption of this plan, Emerald Isle will implement the following to ensure adequate citizen participation:

- The Town will encourage public participation in all land use decisions and procedural development processes while encouraging citizen input via its boards and commissions.
- Emerald Isle will advertise all meetings of the Town's Planning Board and Board of Adjustment through newspaper advertisements, public service announcements, and the Town's website.
- The Town will, at least annually, conduct a joint meeting of the Board of Commissioners and the Town's Planning Board to identify planning issues/needs.
- Ensure that the membership of all planning related and *ad hoc* advisory committees has a cross-section of Emerald Isle's citizenry.

# **Appendix A. Citizen Participation Plan**

## INTRODUCTION

The Town of Emerald Isle has initiated the preparation of an updated Comprehensive Plan/Land Use Plan for the Emerald Isle planning area. The final document will serve as comprehensive plan for future public investment to achieve the community's overall vision. The intent of this project is to draft a plan that will maintain the positive attributes of the existing Plan, while identifying new and strategic development goals and policies, and also new and strategic public initiatives supported by the community.

Recognizing that a collaborative effort with the public is essential, the initial step in the planning process is the adoption of this Citizen Participation Plan (CPP) by the Emerald Isle Board of Commissioners. Approval of the CPP was accomplished on February 9, 2016.

## COMPREHENSIVE PLAN STEERING COMMITTEE

A Comprehensive Plan/Land Use Plan Steering Committee is established by the adoption of this plan. This committee will:

- Supervise the preparation of a draft Comprehensive Plan for presentation to the Emerald Isle Planning Board. (Upon recommendation of the Planning Board, the Plan will be presented to the Emerald Isle Board of Commissioners);
- Act in an advisory capacity to the Town staff, Consultant, Planning Board, and Board of Commissioners during the preparation of the draft Comprehensive Plan;

- Adhere to the terms of the scope of work included in the contract for consulting services with Holland Consulting Planners, Inc., dated January 12, 2016. Deviations from the scope of work will not be allowed without the express consent of the Town of Emerald Isle Board of Commissioners;
- Review and comment on all sections of the draft plan throughout its preparation;
- End its responsibilities with the recommendation of a draft plan to the Town of Emerald Isle Planning Board.

The committee is composed of thirteen (13) members representing diverse interests, and includes the following members appointed by the Emerald Isle Board of Commissioners:

- Jim Normile (Commissioner)
- Ken Sullivan (Planning Board)
- Larry Watson (Retail/Restaurant/Business)
- Bruce Hedreen (Retail/Restaurant/Business)
- Carole Lanier (Tourism-oriented Business)
- Malcolm Boartfield (Real Estate/Developer/Contractor)
- Nathan Wax (Vacation Rental Company)
- Georgia Ricks (Campground/RV Park/MH Park)
- Amy Reardon (Second Homeowner)
- Ron Harkless (Second Homeowner)
- Mike Campbell (Permanent Resident)
- Chad MacAvery (Permanent Resident)
- Randy Campbell (Permanent Resident)

## MEETINGS

All Steering Committee meetings will be conducted in an open format which will encourage public involvement/engagement. The Steering Committee will conduct approximately six (6) work sessions to prepare the draft Comprehensive Plan. All meetings of the Steering Committee will be advertised, posted on the project and Town websites, and open to the public. At a minimum, the following meetings will be conducted throughout the plan preparation process:

- Up to six (6) two-hour work sessions of the Steering Committee will be conducted. At each Steering Committee meeting, the location, date, and time of the succeeding meeting will be determined. All meetings will be advertised, posted on the project and Town websites, and open to the public.
- A mid-project public review meeting to report overall project status and to obtain public input on progress to date. This meeting will be scheduled approximately six (6) months into the project, and will provide a summary of all data and issues identification obtained to date in the process.
- Submittal of draft plan to the Steering Committee by the consultant. Following approval of a draft plan by the Steering Committee, one (1) open house meeting for public review will be conducted to allow the public to question and comment on the draft plan.
- A meeting with the Town Planning Board for presentation of the plan.
- Submittal of plan to the Board of Commissioners for consideration.
- Presentation of the final plan at a public hearing.

## RULES OF CONDUCT

The Steering Committee will adopt specific rules of procedure for its conduct. These rules should define at a minimum:

- Advertising of committee meetings.
- Designation of Chairperson/Vice-Chairperson.
- Controlled opportunities for public input/comments at meetings.
- Meeting locations.
- Steering Committee meeting schedule objectives.
- Decision-making procedures/guidelines.

## PUBLIC NOTIFICATION

To ensure that the public is informed of meeting times and has access to the draft Comprehensive Plan throughout this process, the following steps will be taken:

- Notices of all public meetings will be advertised in a non-legal advertisement section of the Carteret News-Times and Tideland News, and the Emerald Tidings newsletter, in addition to being placed in the Town Hall.
- Notices of all public meetings will be emailed to civic groups and other interested groups (to be determined by Town staff).
- The project team will create and maintain an interactive project-dedicated website to both collect and disseminate information regarding the project. The draft plan (as well as all notices) will be posted on this Comprehensive Plan/Land Use

Plan website so that citizens may either review the document online or print it out. Information regarding the project website will be posted in the Carteret News-Times, Tideland News, Emerald Tidings, Town Hall, and on the Town's official website.

- Notices of all meetings will be posted on the project website, [www.planEI.org](http://www.planEI.org), and the Town's official website at [www.emeraldisle-nc.org](http://www.emeraldisle-nc.org).

## DISSEMINATION OF INFORMATION

The following procedures will be utilized to ensure the availability of information:

- Copies of the draft plan will be placed at the Town Hall for citizen review, as well as being available at all meetings to ensure that the citizens in attendance can review items being discussed.
- The draft plan will be posted on the Town of Emerald Isle Comprehensive Plan/Land Use Plan website as it is developed for online review or printing. Information regarding the location of the document online will be included in all published notices of Steering Committee meetings.
- Sections of the proposed plan will be provided to the Steering Committee prior to any meetings at which the draft section(s) will be discussed.
- Copies of the draft plan or sections of the draft plan may be obtained from the Town Administration Building.

## PUBLIC COMMENT

Throughout the process, the public will have the following opportunities for input:

- At each Steering Committee meeting, time will be allocated for public comments and/or questions.
- At any time during the preparation of the draft plan, the public may obtain information and/or offer comments via email.
- A citizen (including absentee property owners) survey for widespread distribution and posting on project website will be developed and will be open for 60 days from the date of initial distribution.
- The town-wide mid-project status meeting/public input session, Steering Committee work sessions, open house, and public hearing will all provide additional opportunities for public input and questions.
- Sign-up sheets will be placed in the Emerald Isle Town Hall. Individuals who place their names on this list will be mailed or emailed notices announcing meeting times for review of the Comprehensive Plan/Land Use Plan.
- Social media will be utilized on an as-needed basis.

## SCHEDULE

The Comprehensive Plan planning process will utilize the following schedule:

Project Task	Schedule
<b>Phase I:</b> – Issue Notice to Proceed	January 2016
– Project Initiation	January-February 2016
<b>Phase II:</b> Research and Analysis	February-June 2016
<b>Phase III:</b> Plan Format/Development	June 2016-January 2017
<b>Phase IV:</b> – Preliminary Public Hearing	February 2017
– Final Public Hearing	November 2017

# **Appendix B. Regional Hazard Mitigation Plan Strategies**

The following mitigation strategies were developed by Carteret County and its participating municipalities (which includes the Town of Emerald Isle) as part of the Pamlico Sound Regional Hazard Mitigation Plan planning process. The full plan is available for review at the Emerald Isle Planning & Inspections office, or on the Town’s website.

Number	Strategy	Goal Addressed (see page 6-3)	Hazard Addressed (see page 3-1)	Applicable Jurisdictions	Priority	Responsible Party/Dept.	Funding Sources
CA1	Address the sheltering needs of County residents. Continue to work on improving the preparedness of all existing shelter facilities, including the installation of on-site generators at all shelter locations. Maintain updated information regarding all shelters on the County website. Continue support of the NC Coastal Region Evacuation and Sheltering (CRES) plan aimed at providing inland sheltering resources for coastal counties and preparation and adoption of a county sheltering plan.	1, 2, 4, 7, 8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County Emergency Services</li> <li>▪ Carteret County Social Services</li> </ul>	GF, NCDPS, ARC
CA2	Provide information regarding evacuation procedures and routes through County and municipal websites, as well as other means when feasible. These efforts will involve assisting the Towns of Atlantic Beach, Cape Carteret, Emerald Isle, Indian Beach, Morehead City, and Pine Knoll Shores with efforts relating to bridge closures and re-entry policies and procedures. As part of these efforts, the County will make handouts available for citizens and visitors outlining evacuation routes and procedures.	1, 2, 4, 7, 8	1, 2, 3, 5, 6	Carteret County, Atlantic Beach, Beaufort, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County Emergency Services</li> <li>▪ NC Highway Patrol</li> <li>▪ Atlantic Beach Administration</li> <li>▪ Cape Carteret Administration</li> <li>▪ Emerald Isle Administration</li> <li>▪ Indian Beach Administration</li> <li>▪ Morehead City Administration</li> <li>▪ Pine Knoll Shores Administration</li> </ul>	GF, NCDPS
CA3	Continue to maintain the County's Continuity of Operations Plan in an effort to ensure ongoing governmental operations following a natural or man-made disaster event. The County, in conjunction with all participating municipal jurisdictions, will review this plan annually and update as deemed necessary.	1, 2, 3, 4, 5, 6, 7, 8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County Emergency Services</li> <li>▪ Municipal Administrations</li> </ul>	GF, NCDPS



Number	Strategy	Goal Addressed (see page 6-3)	Hazard Addressed (see page 3-1)	Applicable Jurisdictions	Priority	Responsible Party/Dept.	Funding Sources
CA4	Annually review and update the County's Emergency Operations Plan (EOP) to ensure compliance with all NCEM and NCOEMS procedures and policies. Through these updates, the County will work closely with all participating municipalities to ensure that all jurisdictions continue to be educated and prepared for activation of the EOP in the event of a disaster event.	1, 2, 3, 4, 5, 6, 7, 8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County Emergency Services</li> </ul>	GF, NCDPS
CA5	Maintain, and where necessary, establish backup generators at all identified critical facilities. Additionally, County Emergency Services will evaluate the equipment on a regular basis to assure it continues to meet operational demands at county facilities.	4, 6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County Emergency Services</li> <li>▪ Independent Facility Operators</li> <li>▪ Town Public Utilities</li> </ul>	GF, NCDPS, NCDOT, HMGP
CA6	Maintain a contract with a qualified post-disaster recovery service provider. This contract will include the provision of essential services and equipment, including generators, and will include documentation required for reimbursement from FEMA/NCEM.	2, 4, 7, 8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County Governing Board</li> <li>▪ Municipal Governing Boards</li> </ul>	GF, HMGP

Number	Strategy	Goal Addressed (see page 6-3)	Hazard Addressed (see page 3-1)	Applicable Jurisdictions	Priority	Responsible Party/Dept.	Funding Sources
CA7	Hold a public information meeting (once annually) aimed at educating the public and elected officials about the jurisdictions' overall vulnerability to natural and man-made hazards, and the jurisdictions' hazard mitigation efforts.	1, 2, 4, 6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	Medium	<ul style="list-style-type: none"> <li>▪ Carteret County Emergency Services</li> <li>▪ Carteret County Planning</li> <li>▪ Municipal Administrations</li> </ul>	GF
CA8	Maintain the County's Mitigation Advisory Committee (MAC) in an effort to coordinate implementation and update of the Pamlico Sound Regional Hazard Mitigation Plan.	1, 2, 3, 4, 5, 6, 7, 8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County MAC</li> </ul>	GF, NCDPS
CA9	Continue to work on the five-year implementation of the HMP. At the end of this five-year period, the County will undertake efforts to update the plan including the following ten (10) steps: (1) Organize to prepare the plan, (2) Involve the public, (3) Coordinate with other agencies, (4) Assess the hazard, (5) Assess the problem, (6) Set goals, (7) Review possible activities, (8) Draft an action plan, (9) Adopt the plan, and (10) Implement, evaluate, and revise.	1, 2, 3, 4, 5, 6, 7, 8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County Emergency Services</li> <li>▪ Carteret County MAC</li> <li>▪ Municipal Administrations</li> </ul>	GF, NCDPS, HMGP, PDM, UHMA



Number	Strategy	Goal Addressed (see page 6-3)	Hazard Addressed (see page 3-1)	Applicable Jurisdictions	Priority	Responsible Party/Dept.	Funding Sources
CA10	Continue to maintain the County's Crisis Management System in an effort to efficiently deal with emergency situations. These efforts will involve training for officials and relevant staff regarding use of the program.	2, 4, 6, 7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County Emergency Services</li> <li>▪ Carteret County Planning</li> </ul>	GF, NCDPS
CA11	Meet annually with all electric service providers operating within the County prior to hurricane season, in preparation for the effects of severe weather, and will provide the preliminary planning steps required for effective post-disaster recovery.	1, 4, 5, 6, 7	1, 2, 3, 5, 6	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County Emergency Services</li> <li>▪ Municipal Administrations</li> </ul>	GF, NCDPS, Electric Service Providers
CA12	Maintain all property acquired within the Special Flood Hazard Area (SFHA) as undisturbed open space in perpetuity. Continue to proactively establish open space within the floodplain and floodway as HMGP grant funds become available to carry out this initiative.	2, 5, 6, 7, 8	1, 2, 3, 5, 9, 10	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County Planning</li> <li>▪ Municipal Administrations</li> </ul>	GF, NCDPS
CA13	Integrate, when feasible, new greenway and public park improvements into comprehensive planning and capital improvement efforts (including coordination with the County's certified CAMA Land Use Plans).	1, 2, 6, 7	1, 2, 3, 5, 9, 10	Carteret County, Morehead City	Medium	<ul style="list-style-type: none"> <li>▪ Carteret County Parks and Recreation</li> <li>▪ Carteret County Planning</li> <li>▪ Morehead City Parks and Recreation</li> </ul>	GF, NCDENR

Number	Strategy	Goal Addressed (see page 6-3)	Hazard Addressed (see page 3-1)	Applicable Jurisdictions	Priority	Responsible Party/Dept.	Funding Sources
CA14	Maintain reciprocal mutual aid agreements with all neighboring communities in an effort to ensure adequate fire protection throughout the County. Additionally, all jurisdictions will provide preventive maintenance efforts to ensure the fire hydrants and equipment are working properly.	1, 2, 4, 7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County Emergency Services</li> <li>▪ Municipal Administrations</li> <li>▪ Volunteer Fire Departments</li> </ul>	GF, NCDPS
CA15	Review and update respective Flood Damage Prevention Ordinances as deemed necessary. Once annually, all jurisdictions will conduct a review to ensure that the current FDPO is compliant with all FEMA and NCEM mandates.	1, 2, 4, 5	1, 2, 3, 5, 9, 10	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County Planning</li> <li>▪ Municipal NFIP participants</li> </ul>	GF, NCDPS
CA16	Maintain and map GIS-based data related to floodplain management and mitigation. These efforts will involve maintaining the most recent Flood Insurance Rate Maps (FIRMs), as well as GIS locations for each property either acquired or mitigated under current or prior year mitigation grant projects. Repetitive loss areas will also be mapped through this process.	2, 4, 7, 8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County Planning</li> <li>▪ Carteret County Information Technology Department</li> <li>▪ Carteret County Tax Department</li> <li>▪ Municipal Administrations</li> </ul>	GF, NCDPS
CA17	Continue to require a finished floor elevation certificate for all development within the Special Flood Hazard Area (SFHA) in both incorporated and unincorporated portions of the County. All elevation certificates will be submitted on an official FEMA elevation certificate. All elevation certificates shall be kept on file by the County or municipalities.	1, 2, 3, 4, 6	1, 2, 3, 5, 9, 10	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County Inspections</li> <li>▪ Municipal Building Inspections</li> </ul>	GF



Number	Strategy	Goal Addressed (see page 6-3)	Hazard Addressed (see page 3-1)	Applicable Jurisdictions	Priority	Responsible Party/Dept.	Funding Sources
CA18	Establish and/or maintain reconstruction policies that include procedures for issuance of building permits after a natural disaster.	1, 2, 4, 7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County Planning</li> <li>▪ Municipal Administrations</li> </ul>	GF
CA19	Strive to maintain respective CRS ratings through implementation of a comprehensive floodplain management program.	1, 2, 3, 4, 5, 6, 7, 8	1, 2, 3, 5, 9, 10	Carteret County, Atlantic Beach, Beaufort, Cape Carteret, Cedar Point, Emerald Isle, Morehead City, Newport, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County Planning</li> <li>▪ Municipal Administrations</li> </ul>	GF, NCDPS, HMGP, PDM, UHMA
CA20	Maintain a map information service involving the following: (1) Provide information relating to Flood Insurance Rate Maps (FIRMs) to all inquirers, including a provision of information on whether a given property is located with a flood hazard area; (2) Provide information regarding the flood insurance purchase requirement; (3) Maintain historical and current FIRMs; (4) Advertise once annually in the local newspaper the availability of FIRMs; and (5) Provide information to inquirers about local floodplain management requirements.	1, 2, 3, 4, 5, 6, 7, 8	1, 2, 3, 5, 9, 10	Carteret County, Atlantic Beach, Beaufort, Cape Carteret, Cedar Point, Emerald Isle, Morehead City, Newport, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County Planning</li> <li>▪ Municipal Administrations</li> </ul>	GF, NCDPS

Number	Strategy	Goal Addressed (see page 6-3)	Hazard Addressed (see page 3-1)	Applicable Jurisdictions	Priority	Responsible Party/Dept.	Funding Sources
CA21	Mail a notice annually to all property owners in an effort to educate citizens about dangers associated with flooding in low-lying coastal areas.	1, 2, 5, 7	1, 2, 3, 5, 9, 10	Carteret County, Atlantic Beach, Beaufort, Cape Carteret, Cedar Point, Emerald Isle, Morehead City, Newport, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County Planning</li> <li>▪ Municipal Administrations</li> </ul>	GF, NCDPS
CA22	Continue to work with local real estate agencies to ensure that agents are informing clients when property for sale is located within a SFHA. The County will provide these agencies with brochures documenting the concerns relating to development located with the floodprone areas and ways that homeowners may make their home more disaster resistant to strong winds, lightning, and heavy rains.	1, 2, 4, 6	1, 2, 3, 5, 9, 10	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County Planning</li> </ul>	GF, NCDPS
CA23	Make information regarding hazards and development regulations within floodplains available through the following: (1) Ensure that the local library maintains information relating to flooding and flood protection; (2) Provide a link on the county website to FEMA resources addressing flooding and flood protection; (3) Provide a link on all participating municipalities' websites to FEMA resources addressing flooding and flood protection, evacuation procedures, disaster preparedness, and post-disaster recovery; and (4) Provide website links to relevant hazard mitigation websites.	1, 2, 4, 6	1, 2, 3, 5, 9, 10	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County Planning</li> <li>▪ Municipal Administrations</li> </ul>	GF, NCDPS



Number	Strategy	Goal Addressed (see page 6-3)	Hazard Addressed (see page 3-1)	Applicable Jurisdictions	Priority	Responsible Party/Dept.	Funding Sources
CA24	Support the efforts of the Carteret County Local Emergency Planning Committee (LEPC) in their effort to address hazards associated with the storage of chemicals, noxious waste material and bulk fuel.	1, 2, 6, 7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	High	▪ Carteret County LEPC	GF, NCDPS
CA25	Continue to support the NC Office of Dam Safety in its efforts to monitor and inspect all dams throughout the state. The County will rely on this agency to ensure that all dam facilities, both public and private, are properly maintained and stable.	1, 2, 4, 6	1, 2, 3, 6, 8, 9, 10	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	High	▪ Carteret County Planning ▪ Municipal Administrations	GF, NCDPS, NCDENR
CA26	Continue to monitor water resources in an effort to mitigate the impacts of drought conditions. These efforts will include maintaining a local water shortage ordinance. This ordinance will be activated in coordination with all utility providers as the need arises.	1, 2, 7, 8	11	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	High	▪ Carteret County Planning ▪ Municipal Administrations	GF, NCDENR

Number	Strategy	Goal Addressed (see page 6-3)	Hazard Addressed (see page 3-1)	Applicable Jurisdictions	Priority	Responsible Party/Dept.	Funding Sources
CA27	In the event of a substantial flooding event or other natural hazard occurrence, perform damage assessments in coordination with NCEM. These assessments will assist the county in determining the extent of the damage caused by the respective disaster event. This data, in conjunction with the information outlined in this plan, will be utilized as a tool for land use planning and future hazard mitigation plan updates.	1, 2, 4, 7, 8	1, 2, 3, 5, 9, 10, 12	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County Planning</li> <li>▪ Municipal Administrations</li> </ul>	NF, NCDPS, HMGP
CA28	Review all land use planning and regulatory documents pertinent to hazard mitigation in an effort to: (1) Reduce exposure to natural hazards (2) Promote resource protection (3) Encourage the use of best management practices	1, 2, 3, 4, 5, 6, 7, 8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	Medium	<ul style="list-style-type: none"> <li>▪ Carteret County Planning</li> <li>▪ Municipal Administrations</li> </ul>	GF
CA29	Consider developing a hazardous materials actions plan focused on addressing the potential impacts of hazardous materials spills. Specifically, the plan will identify and address risk associated with known hazardous materials risk areas.	1, 2, 4, 6, 7	Man-made	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	Medium	<ul style="list-style-type: none"> <li>▪ Carteret County Emergency Services</li> </ul>	GF, NCDPS



Number	Strategy	Goal Addressed (see page 6-3)	Hazard Addressed (see page 3-1)	Applicable Jurisdictions	Priority	Responsible Party/Dept.	Funding Sources
CA30	Continue to enforce the NC State Building Code. Local government inspections staff will re-certify the NC State Building Code as the adopted local regulation applying to all construction activities on an annual basis. Through enforcement of the NC State Building Code, jurisdictions will work to ensure that all structures, including manufactured homes, are properly anchored to minimize potential impacts stemming from a disaster event.	1, 2, 5, 7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County Inspections</li> <li>▪ Municipal Building Inspections</li> </ul>	GF
CA31	Collaborate to provide education and training to local government officials in an effort to broaden understanding of public policy relating to hazard mitigation.	1, 2, 3, 4, 5, 6, 7, 8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	Medium	<ul style="list-style-type: none"> <li>▪ Carteret County Emergency Services</li> <li>▪ Carteret County Administration</li> <li>▪ Municipal Administration</li> </ul>	GF
CA32	Continue to proactively seek out grant funding through NCEM and FEMA for mitigation of repetitive loss properties (RLP's) from future flooding events. The County will maintain a list of RLP's, and on an annual basis, will apply for funding for all structures that meet cost-benefit thresholds as defined by FEMA. Carteret County will assist all municipal jurisdictions in working through the structural mitigation grant funding process.	1, 2, 4, 5, 7	1, 2, 3, 5, 9, 10, 12	Carteret County, Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, Pine Knoll Shores	High	<ul style="list-style-type: none"> <li>▪ Carteret County Planning Department</li> <li>▪ Carteret County Board of Commissioners</li> <li>▪ Municipal Administrations</li> </ul>	GF, NCDPS, HMGP, PDM, UHMA

# Appendix C. Definitions

**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. Town staff and Planning Board involved at all levels from planning to implementation.

**Shall/Will**

Expresses determination to implement/take action.

**Continue**

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

**Encourage**

Foster the desired goal through Town policies. Could involve Town financial assistance.

**Enhance**

Improve current goal to a desired state through the use of policies and Town staff at all levels of planning. This effort could include financial support.

**Identify**

Execute actions intended to guide the accomplishment of the plan recommendations.

**Maintain**

Keep in good condition the desired state of affairs through the use of Town policies and staff. Financial assistance should be provided if needed.

**Prevent**

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

**Promote**

Advance the desired state through the use of Town policies and Planning Board and staff activity at all levels of planning. This effort may include financial support.

**Protect**

Guard against a deterioration of the desired state through the use of Town policies, staff, and if needed, financial assistance.

**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.

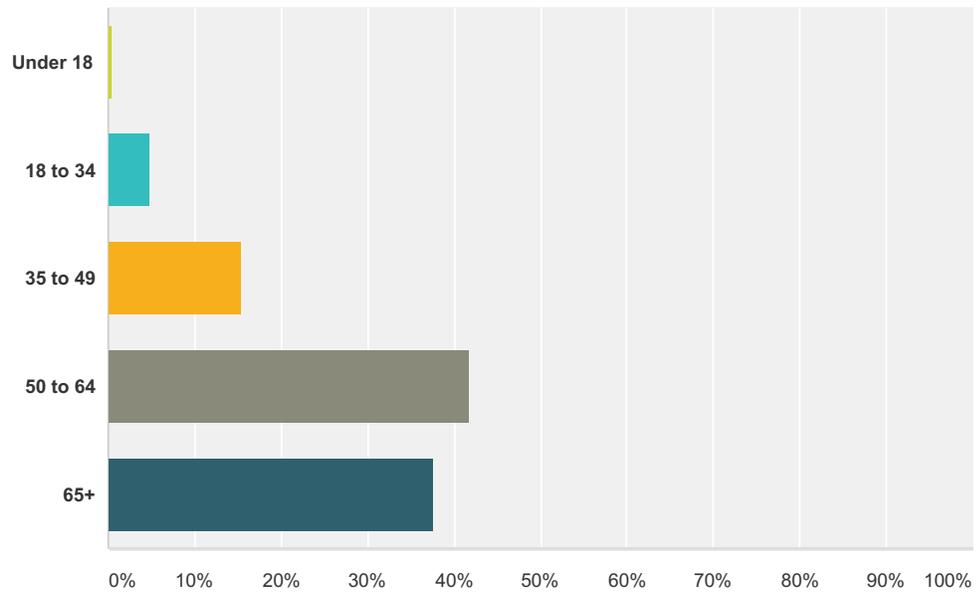
**Support**

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

# Appendix D. Survey Results

### Q1 What is your age range (age of person completing this survey)?

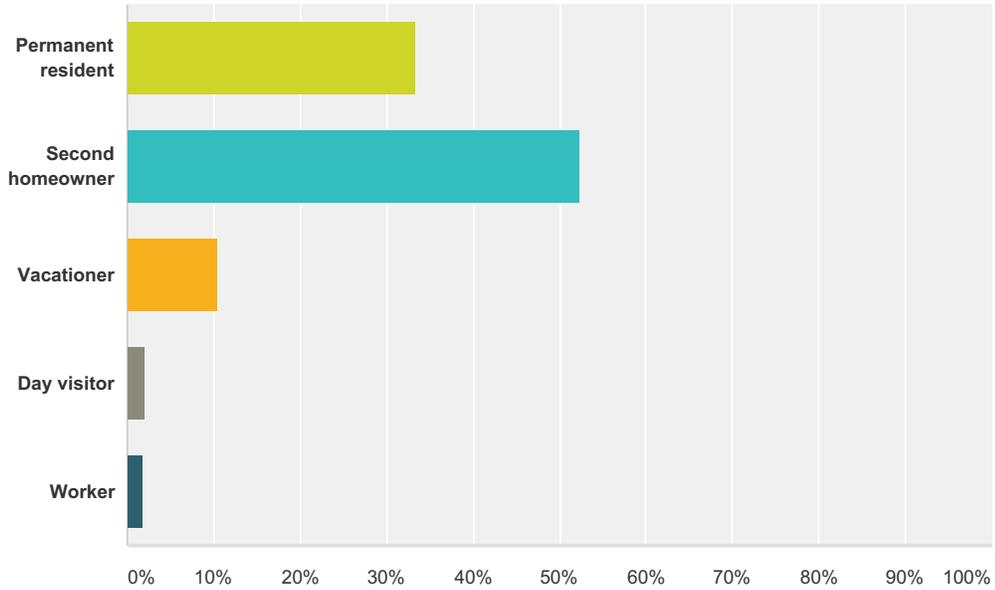
Answered: 1,479 Skipped: 0



Answer Choices	Responses	Count
Under 18	0.34%	5
18 to 34	4.80%	71
35 to 49	15.55%	230
50 to 64	41.72%	617
65+	37.59%	556
<b>Total</b>		<b>1,479</b>

**Q2 Are you a permanent resident, second homeowner, vacationer, day visitor, or worker?**

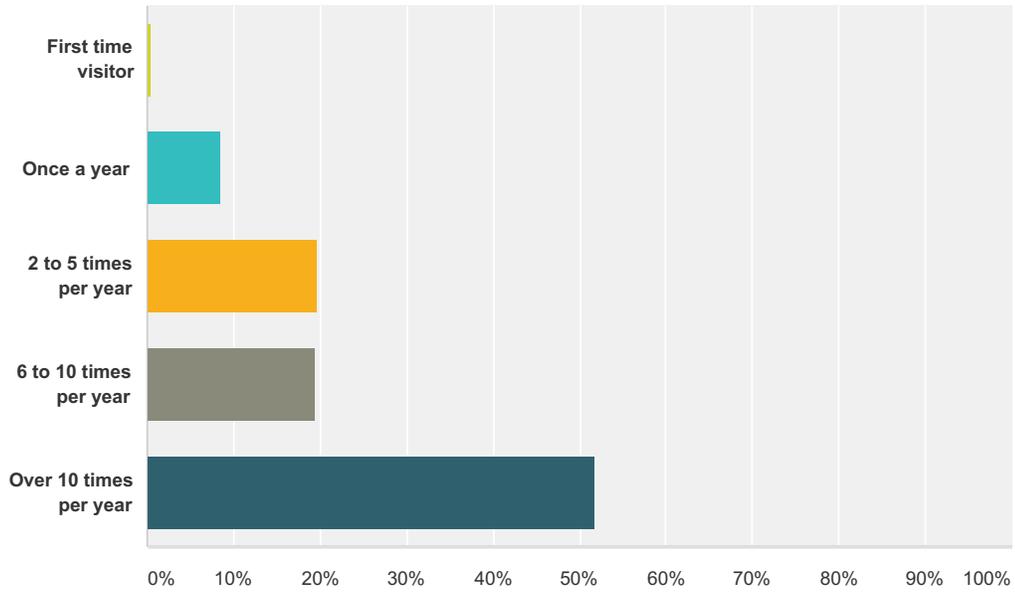
Answered: 1,479 Skipped: 0



Answer Choices	Responses	
Permanent resident	33.40%	494
Second homeowner	52.33%	774
Vacationer	10.34%	153
Day visitor	2.10%	31
Worker	1.83%	27
<b>Total</b>		<b>1,479</b>

### Q3 If not a permanent resident, how often do you visit Emerald Isle?

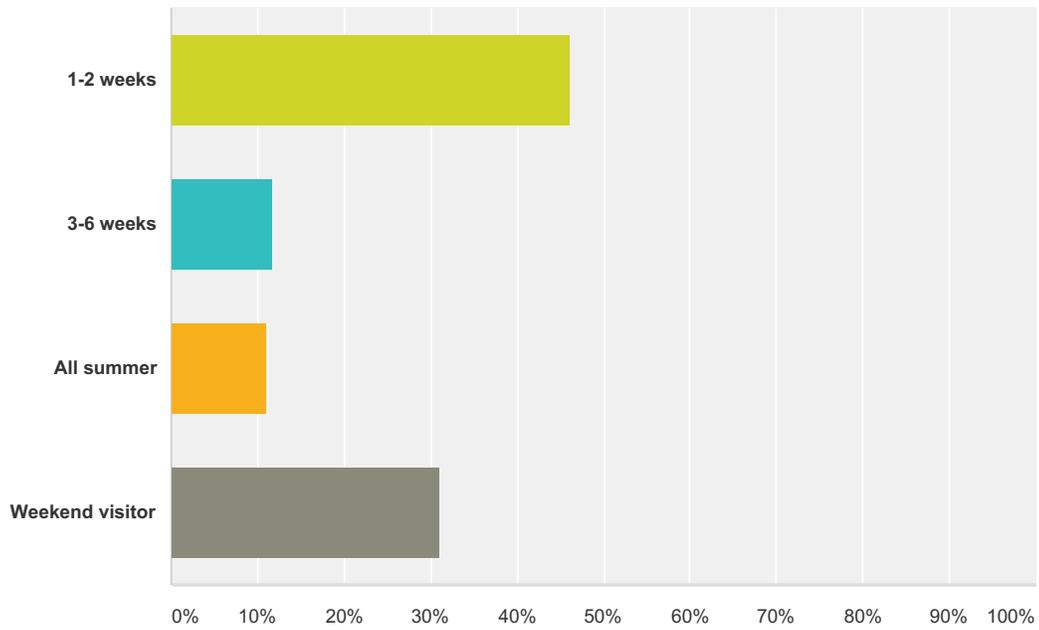
Answered: 944 Skipped: 535



Answer Choices	Responses
First time visitor	0.42% 4
Once a year	8.58% 81
2 to 5 times per year	19.70% 186
6 to 10 times per year	19.49% 184
Over 10 times per year	51.80% 489
<b>Total</b>	<b>944</b>

### Q4 What is the average duration of your stay?

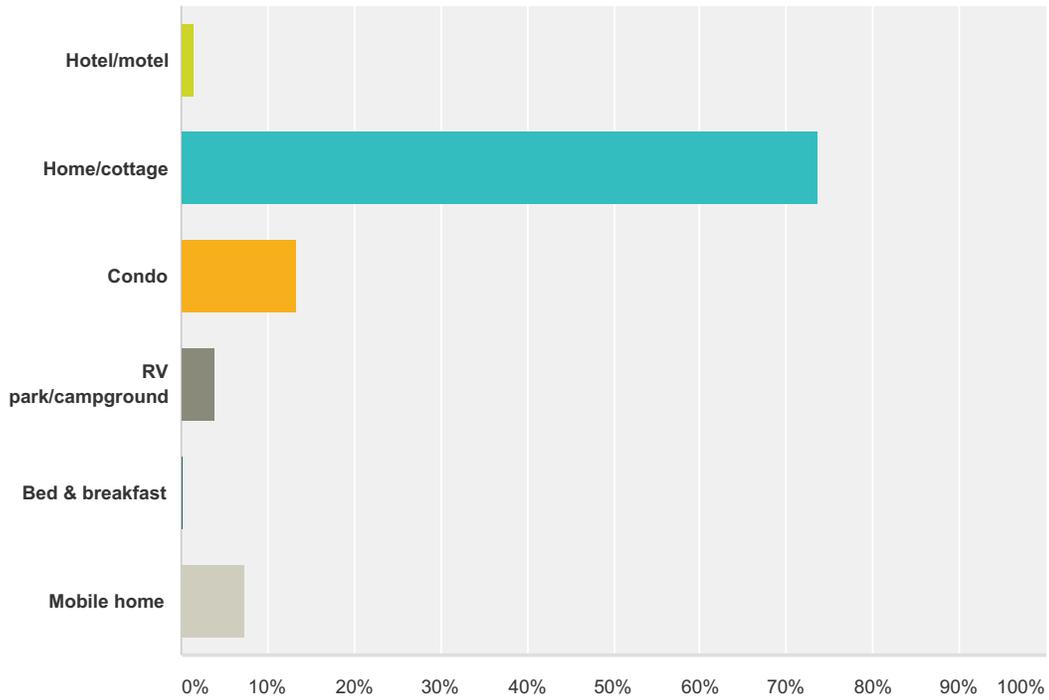
Answered: 944 Skipped: 535



Answer Choices	Responses
1-2 weeks	46.08% 435
3-6 weeks	11.76% 111
All summer	11.02% 104
Weekend visitor	31.14% 294
<b>Total</b>	<b>944</b>

### Q5 When you visit Emerald Isle, what is your choice for accommodations?

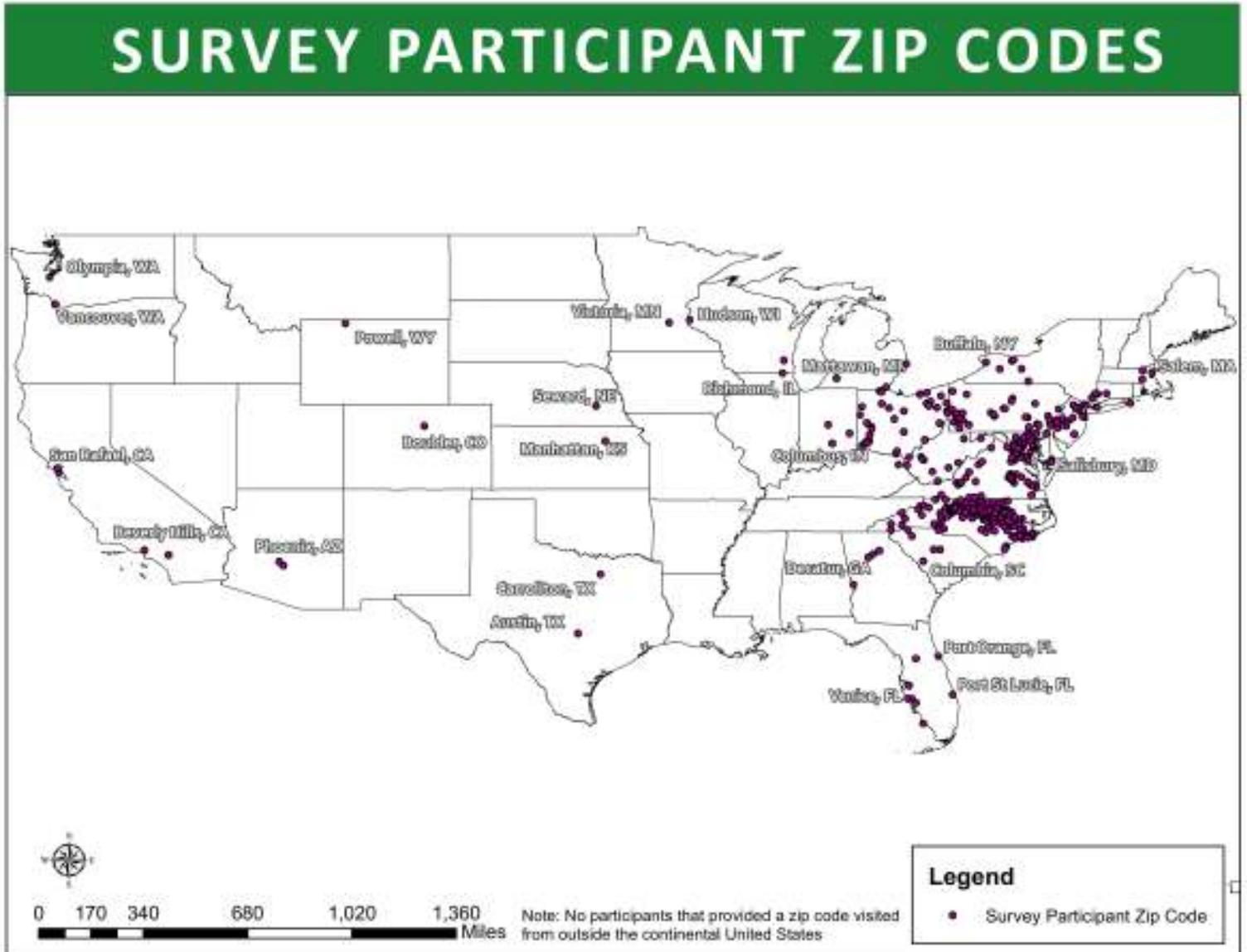
Answered: 944 Skipped: 535



Answer Choices	Responses
Hotel/motel	1.48% 14
Home/cottage	73.62% 695
Condo	13.35% 126
RV park/campground	4.03% 38
Bed & breakfast	0.21% 2
Mobile home	7.31% 69
<b>Total</b>	<b>944</b>

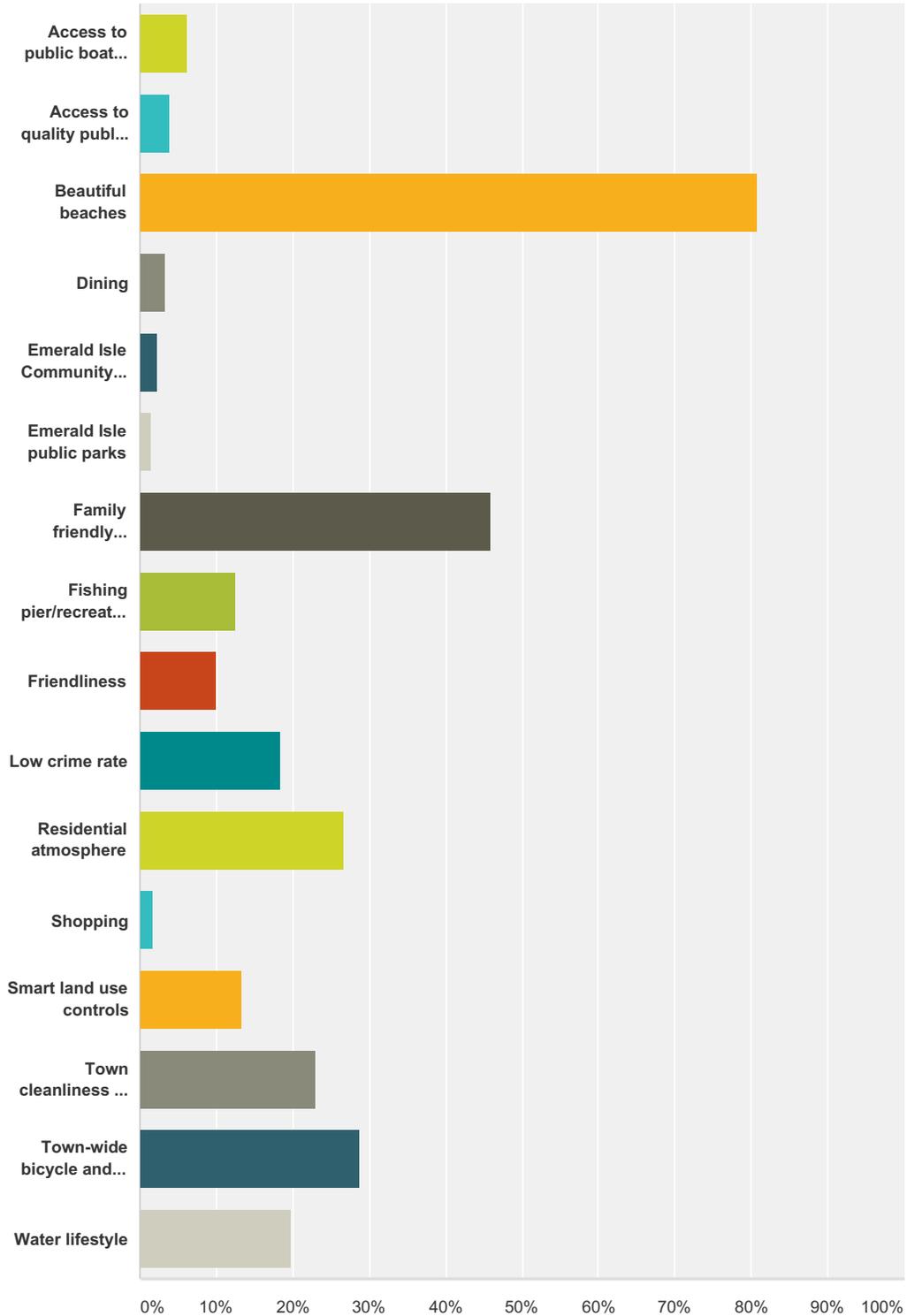
### Q6 What is the zip code for your primary residence?

Answered: 1,357 Skipped: 122



**Q7 What would you consider to be Emerald Isle's top THREE (3) assets? Please select ONLY THREE. Choices are listed in alphabetical order.**

Answered: 1,357 Skipped: 122

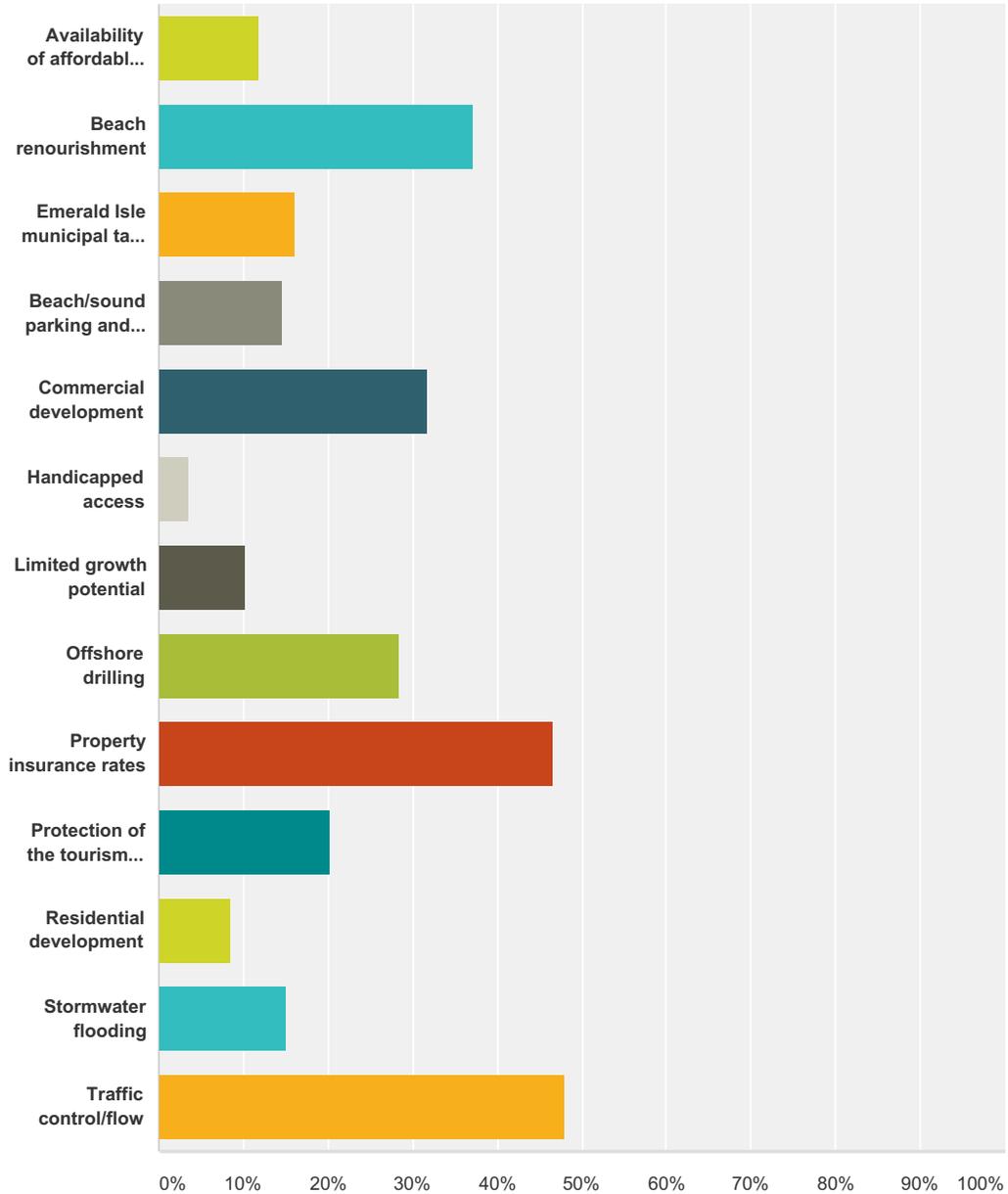


## Appendix D: Comprehensive Land Use Plan Survey

Answer Choices	Responses	
Access to public boat ramp	6.26%	85
Access to quality public schools	3.91%	53
Beautiful beaches	80.84%	1,097
Dining	3.24%	44
Emerald Isle Community Center	2.28%	31
Emerald Isle public parks	1.55%	21
Family friendly environment	45.84%	622
Fishing pier/recreational fishing opportunities	12.53%	170
Friendliness	10.10%	137
Low crime rate	18.28%	248
Residential atmosphere	26.82%	364
Shopping	1.62%	22
Smart land use controls	13.34%	181
Town cleanliness and aesthetics	23.07%	313
Town-wide bicycle and pedestrian path	28.89%	392
Water lifestyle	19.82%	269
<b>Total Respondents: 1,357</b>		

**Q8 What would you consider the top THREE (3) most significant issues/concerns facing Emerald Isle? Please select ONLY THREE. Choices are listed in alphabetical order.**

Answered: 1,349 Skipped: 130



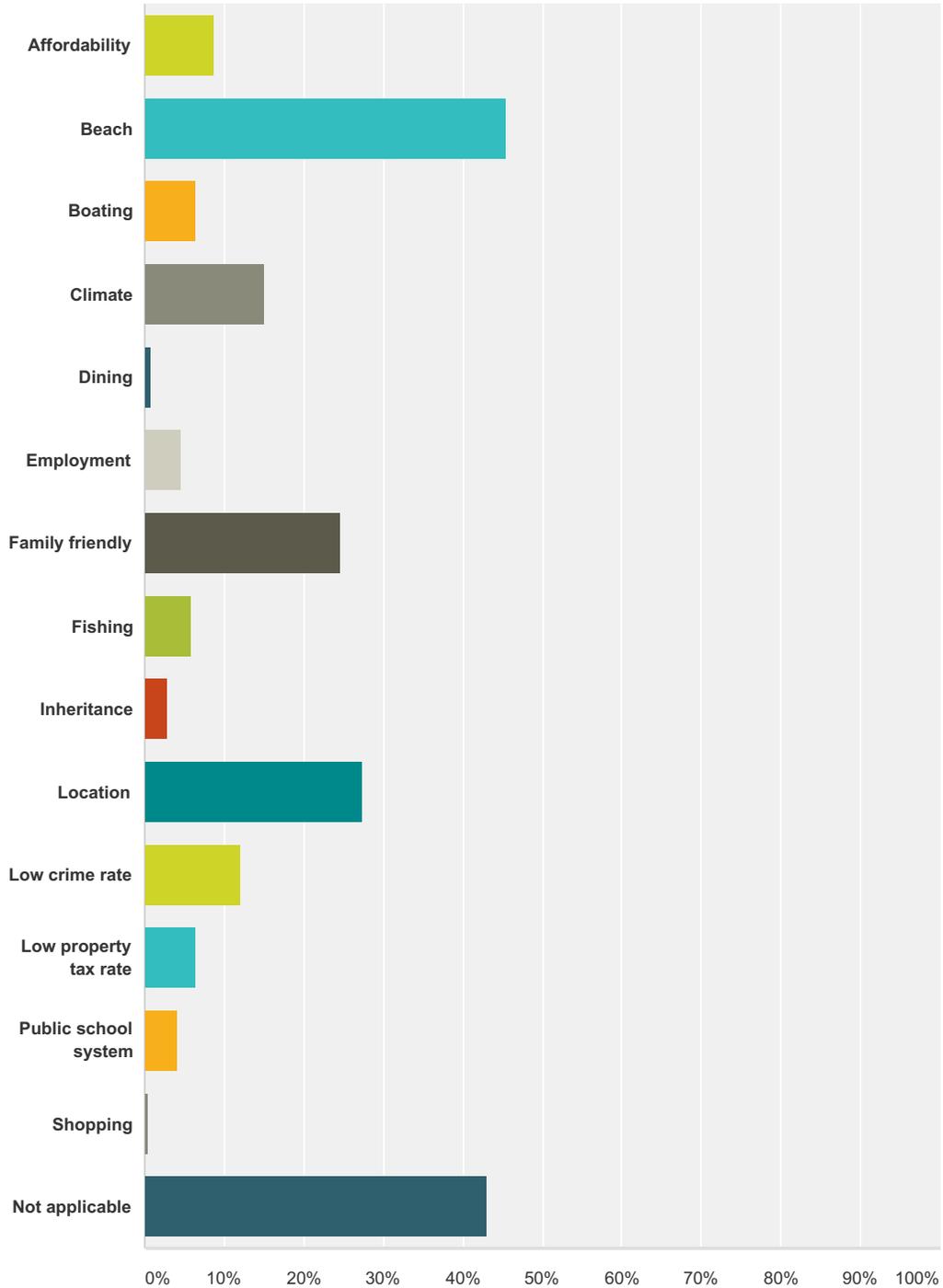
Answer Choices	Responses
Availability of affordable housing/accommodations	11.86% 160
Beach renourishment	37.06% 500
Emerald Isle municipal tax rate	16.16% 218
Beach/sound parking and access	14.60% 197

## Appendix D: Comprehensive Land Use Plan Survey

Commercial development	<b>31.65%</b>	427
Handicapped access	<b>3.56%</b>	48
Limited growth potential	<b>10.16%</b>	137
Offshore drilling	<b>28.39%</b>	383
Property insurance rates	<b>46.63%</b>	629
Protection of the tourism base	<b>20.16%</b>	272
Residential development	<b>8.52%</b>	115
Stormwater flooding	<b>14.97%</b>	202
Traffic control/flow	<b>48.04%</b>	648
<b>Total Respondents: 1,349</b>		

**Q9 Why did you choose Emerald Isle for permanent residence? Please select ONLY THREE. Choices are listed in alphabetical order.**

Answered: 1,357 Skipped: 122



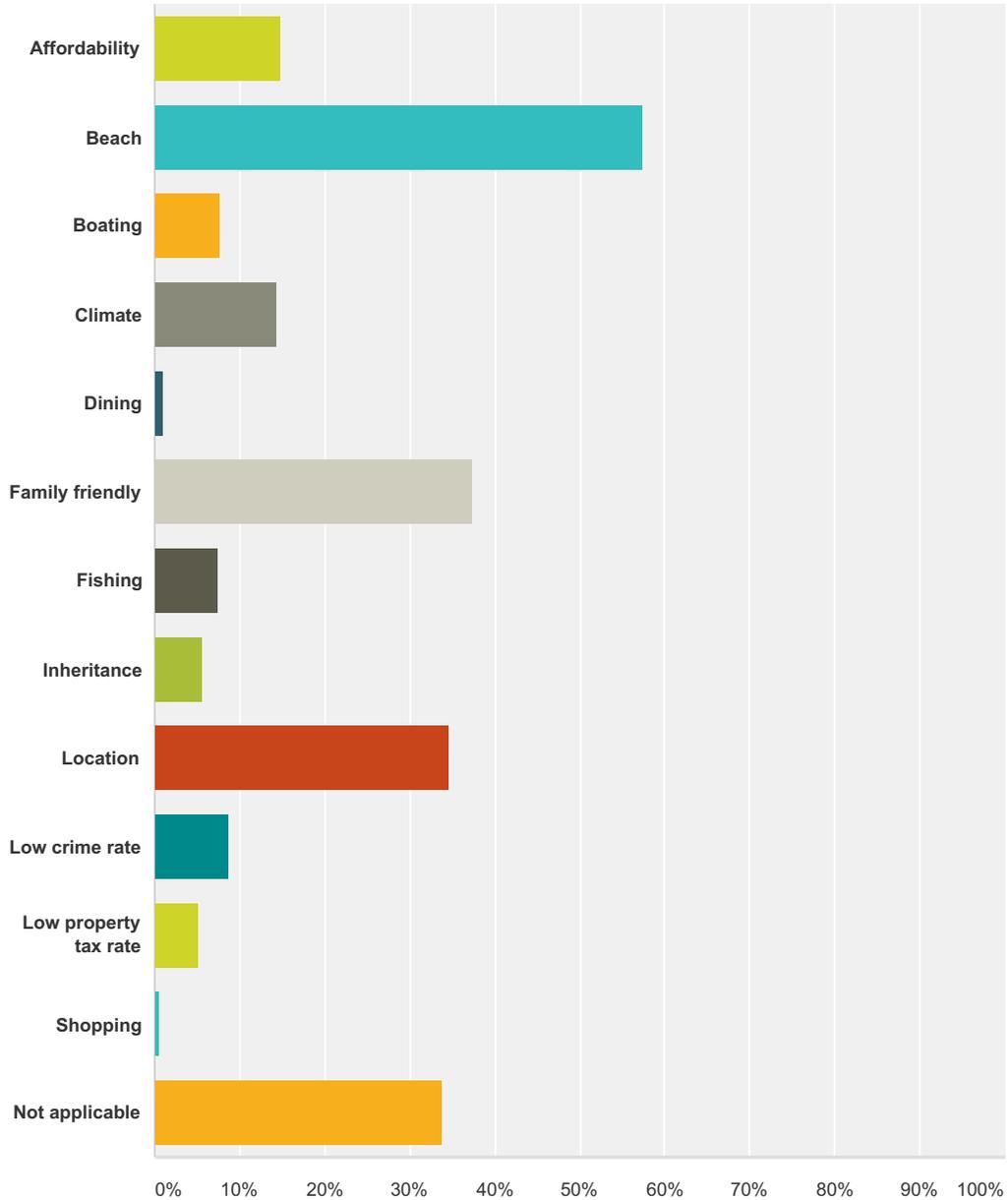
Answer Choices	Responses
Affordability	8.77%

## Appendix D: Comprehensive Land Use Plan Survey

Beach	45.47%	617
Boating	6.48%	88
Climate	15.03%	204
Dining	0.88%	12
Employment	4.50%	61
Family friendly	24.69%	335
Fishing	5.82%	79
Inheritance	2.87%	39
Location	27.27%	370
Low crime rate	12.16%	165
Low property tax rate	6.56%	89
Public school system	4.27%	58
Shopping	0.44%	6
Not applicable	42.96%	583
<b>Total Respondents: 1,357</b>		

**Q10 Why did you choose Emerald Isle for a second home? Please select ONLY THREE. Choices are listed in alphabetical order.**

Answered: 1,357 Skipped: 122



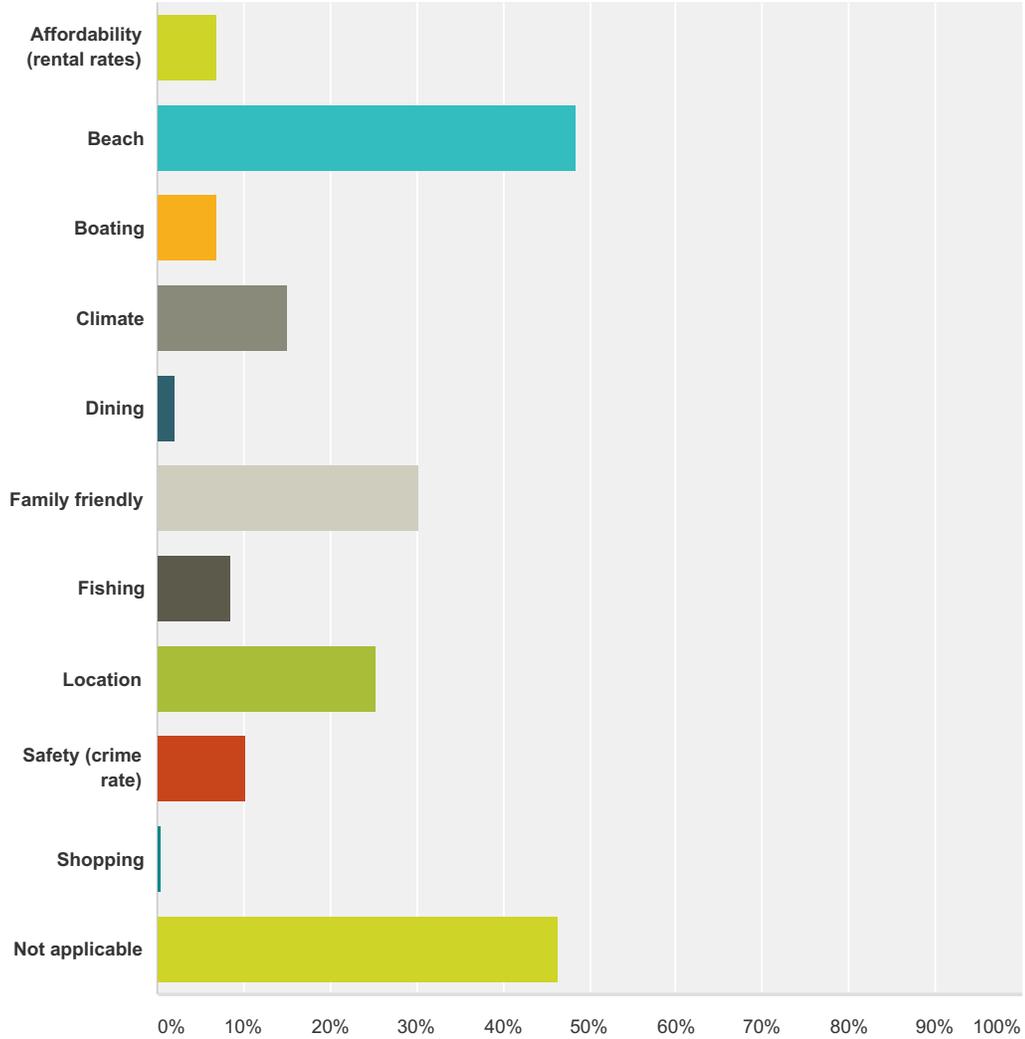
Answer Choices	Responses
Affordability	14.89% 202
Beach	57.41% 779
Boating	7.74% 105
Climate	14.44% 196

## Appendix D: Comprehensive Land Use Plan Survey

Dining	<b>0.96%</b>	13
Family friendly	<b>37.44%</b>	508
Fishing	<b>7.44%</b>	101
Inheritance	<b>5.60%</b>	76
Location	<b>34.64%</b>	470
Low crime rate	<b>8.84%</b>	120
Low property tax rate	<b>5.16%</b>	70
Shopping	<b>0.59%</b>	8
Not applicable	<b>33.75%</b>	458
<b>Total Respondents: 1,357</b>		

**Q11 Why did you choose Emerald Isle for a place to visit? Please select ONLY THREE. Choices are listed in alphabetical order.**

Answered: 1,357 Skipped: 122



Answer Choices	Responses
Affordability (rental rates)	6.85% 93
Beach	48.42% 657
Boating	6.93% 94
Climate	15.11% 205
Dining	1.99% 27
Family friendly	30.36% 412
Fishing	8.47% 115
Location	25.20% 342

## Appendix D: Comprehensive Land Use Plan Survey

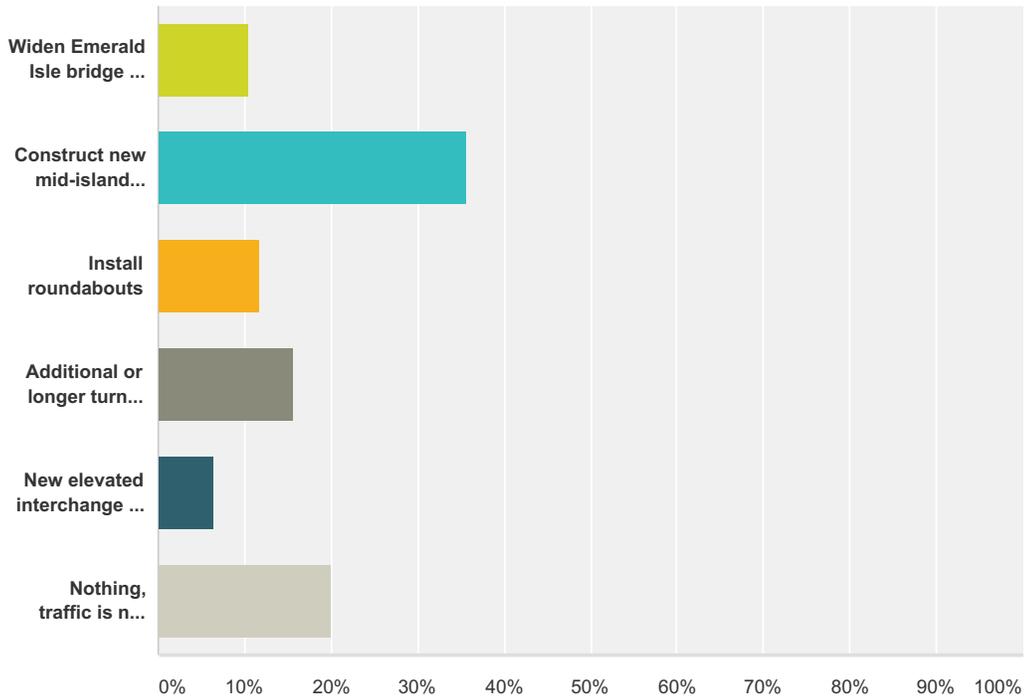
Safety (crime rate)	10.24%	139
Shopping	0.52%	7
Not applicable	46.35%	629
<b>Total Respondents: 1,357</b>		

**Q12 What would you consider your favorite place/location in Emerald Isle? Please list only one.**

Answered: 1,357 Skipped: 122

### Q13 Which solution would you prefer to reduce traffic congestion in Emerald Isle?

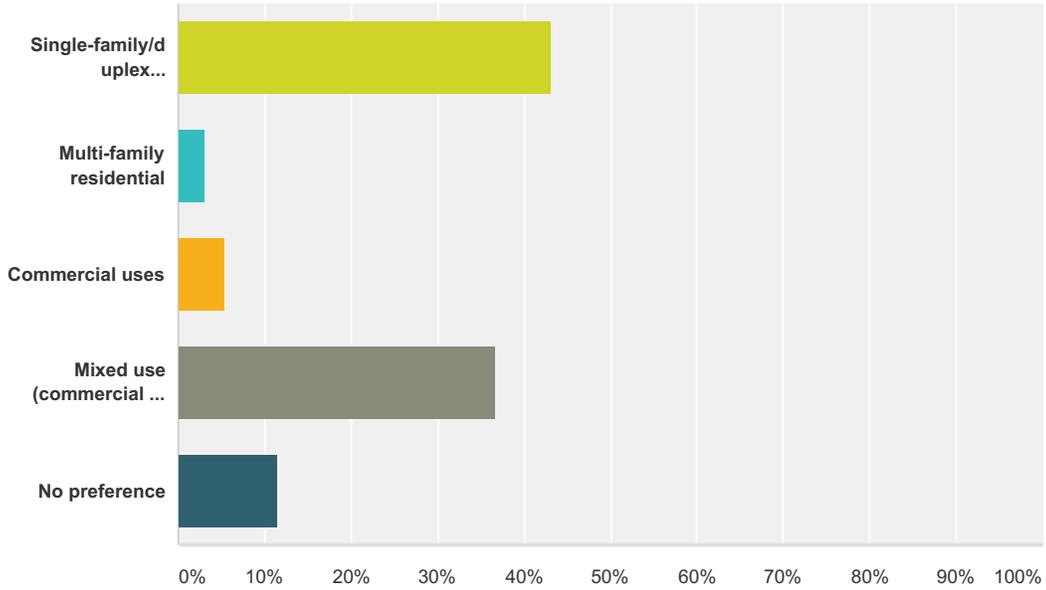
Answered: 1,342 Skipped: 137



Answer Choices	Responses
Widen Emerald Isle bridge and NC 58 to 4 lanes	10.51% 141
Construct new mid-island bridge near Indian Beach/Salter Path	35.69% 479
Install roundabouts	11.62% 156
Additional or longer turn lanes/signal improvements	15.65% 210
New elevated interchange at NC 58/NC 24 intersection on the mainland	6.56% 88
Nothing, traffic is not a significant problem	19.97% 268
<b>Total</b>	<b>1,342</b>

**Q14 What would you consider the most appropriate form of development in underutilized areas of Emerald Isle (larger, older tracts) that may experience redevelopment in the future?**

Answered: 1,280 Skipped: 199



Answer Choices	Responses	Count
Single-family/duplex residential	43.13%	552
Multi-family residential	3.05%	39
Commercial uses	5.47%	70
Mixed use (commercial and residential together)	36.80%	471
No preference	11.56%	148
<b>Total</b>		<b>1,280</b>

**Q15 Please list any specific areas in Emerald Isle where you believe redevelopment should be promoted, fostered, and encouraged.**

Answered: 582 Skipped: 897

**Q16 Please list things you feel the Town of Emerald Isle could do to improve the experience/quality of life for residents, visitors, and business owners.**

Answered: 757 Skipped: 722

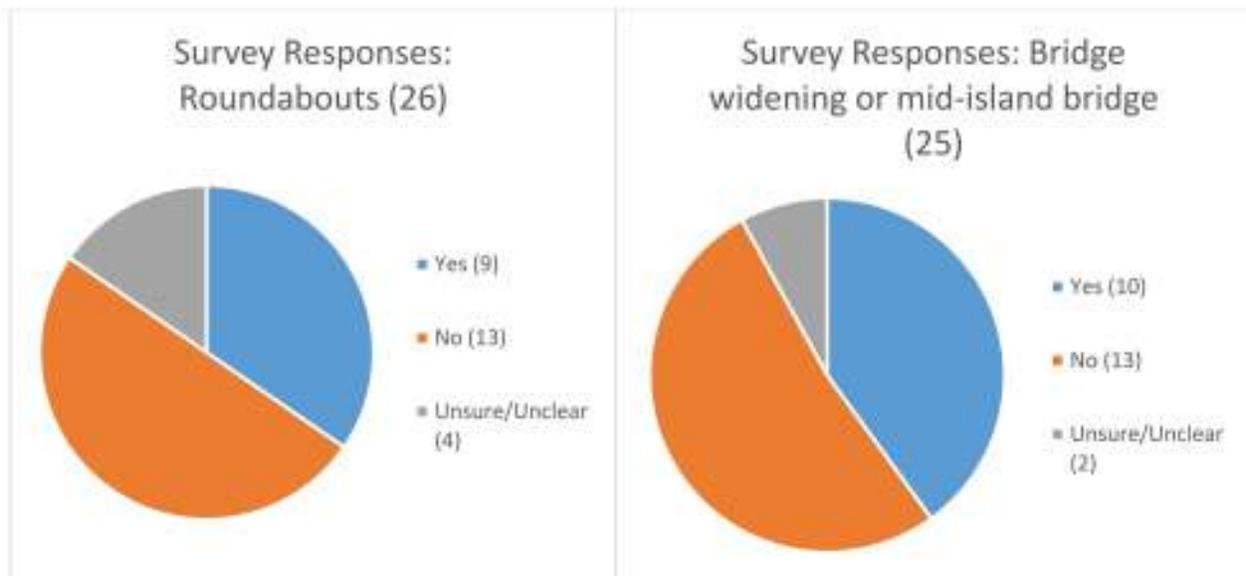
**Q17 Additional Comments: Please provide any additional comments you may have about the current or future aspects of Emerald Isle.**

Answered: 622 Skipped: 857

Survey question 17 was an open-ended question inquiring about additional comments regarding the current or future aspects of Emerald Isle.

The method used to analyze this information was to divide the responses into 4 primary categories: (1) Compliments, (2) Complaints, (3) Suggestions, and (4) Miscellaneous. Of the 622 total responses to this survey question, approximately 223 were considered compliments, 66 were considered complaints, 265 were considered suggestions, 58 were considered miscellaneous, and 10 were not responses.

Many topics were mentioned often to include, traffic, commercialization, roundabouts, and mid-island bridge construction or existing bridge widening. Of these items, only two contained responses that favored both sides. Below are charts depicting the breakdown of the survey responses mentioning either roundabouts or bridges.



# Appendix E. Soil Characteristics

Map Symbol	Soil Series	Dwellings without Basements	Local Roads and Streets	Septic Tank Absorption Fields
Be	Beaches, coastal	Consists of nearly level to gently sloping soil in long, broad areas adjacent to the ocean; flooded daily by ocean tides and are very unstable and highly susceptible to shoreline erosion. Beaches are used for recreation and has habitat for coastal birds and some marine species.		
Bf	Beaches, storm tidal	Consists of nearly level, poorly drained soil on Core Banks and Shackleford Banks; areas are on flats between ocean beaches and marshes on the sound side of the island. Frequently flooded with salt water by ocean storm tides; soil is used only as habitat by some marine species during storm tides.		
CH	Carteret sand, frequently flooded	Severe: flooding, ponding	Severe: ponding, flooding	Severe: flooding, ponding, poor filter
CL	Carteret sand, low, frequently flooded	Severe: flooding, ponding	Severe: ponding, flooding	Severe: flooding, ponding, poor filter
Co	Corolla fine sand	Severe: flooding	Moderate: flooding, wetness	Severe: wetness, poor filter
Cu	Corolla-Urban land complex	Severe: flooding	Moderate: flooding, wetness	Severe: wetness, poor filter
Du	Duckston fine sand, frequently flooded	Severe: flooding, wetness	Severe: flooding	Severe: flooding, wetness, poor filter
Fr	Fripp fine sand, 2 to 30 percent slopes	Severe: slope	Severe: slope	Severe: poor filter, slope
Nc	Newhan-Corolla complex, 0 to 30 percent slopes	Severe: slope, flooding	Severe: slope	Severe: poor filter, slope, wetness
Nd	Newhan fine sand, dredged, 2 to 30 percent slopes	Severe: slope	Severe: slope	Severe: poor filter, slope
Ne	Newhan-Urban land complex, 0 to 8 percent slopes	Slight	Slight	Severe: poor filter
Nh	Newhan fine sand, 2 to 30 percent slopes	Severe: slope	Severe: slope	Severe: poor filter, slope

# Appendix F. Endangered/Threatened Species

## Appendix F. Endangered Species, Threatened Species, Federal Species of Concern, and Candidate Species

### Carteret County, North Carolina



**Note:** Marine Threatened and Endangered Species information can be found at the [National Marine Fisheries Service \(NMFS\) Endangered and Threatened Species website](#)

**Updated:** 3-25-2015

#### Critical Habitat Designations:

**Piping plover - *Charadrius melodus*** - See the Federal Register for a description of the primary constituent elements essential for the conservation of wintering piping plovers within the designated units. This document also contains a map and a description of each designated unit.

**Federal Register Reference:** July 10, 2001, Federal Register, 66:36038-36136.

**Loggerhead Sea Turtle - *Caretta caretta*** - See the Federal Register for a description of the primary constituent elements essential for the conservation of nesting Loggerhead sea turtles within the designated units. This document also contains a map and a description of each designated unit.

**Federal Register Reference:** July 10, 2014, Federal Register, 79:51264-51266

Common Name	Scientific name	Federal Status	Record Status
<b>Vertebrate:</b>			
<a href="#">American alligator</a>	<i>Alligator mississippiensis</i>	T (S/A)	Current
American eel	<i>Anguilla rostrata</i>	FSC	Current
Bachman's sparrow	<i>Aimophila aestivalis</i>	FSC	Current
Black rail	<i>Laterallus jamaicensis</i>	FSC	Current
Black-throated green warbler	<i>Dendroica virens waynei</i>	FSC	Current
Carolina gopher frog	<i>Rana capito capito</i>	FSC	Current
Eastern Henslow's sparrow	<i>Ammodramus henslowii susurrans</i>	FSC	Current
Eastern painted bunting	<i>Passerina ciris ciris</i>	FSC	Current
<a href="#">Green sea turtle</a>	<i>Chelonia mydas</i>	T	Current

<a href="#">Hawksbill (=carey) sea turtle</a>	<i>Eretmochelys imbricata</i>	E	Historic
<a href="#">Kemp's (=Atlantic) ridley sea turtle</a>	<i>Lepidochelys kempii</i>	E	Current
<a href="#">Leatherback sea turtle</a>	<i>Dermochelys coriacea</i>	E	Current
<a href="#">Loggerhead sea turtle</a>	<i>Caretta caretta</i>	T	Current
Mimic glass lizard	<i>Ophisaurus mimicus</i>	FSC	Current
Northern diamondback terrapin	<i>Malaclemys terrapin terrapin</i>	FSC	Current
<a href="#">Piping plover</a>	<i>Charadrius melodus</i>	T	Current
<a href="#">Red-cockaded woodpecker</a>	<i>Picoides borealis</i>	E	Current
<a href="#">Red knot</a>	<i>Calidris canutus rufa</i>	T	Current
<a href="#">Roseate tern</a>	<i>Sterna dougallii dougallii</i>	T	Current
<a href="#">Shortnose sturgeon</a>	<i>Acipenser brevirostrum</i>	E	Current
Southern hognose snake	<i>Heterodon simus</i>	FSC	Obscure
<a href="#">West Indian manatee</a>	<i>Trichechus manatus</i>	E	Current

#### **Invertebrate:**

Buchholz's dart moth	<i>Agrotis buchholzi</i>	FSC	Current
Carter's noctuid moth	<i>Spartiniphaga carterae</i>	FSC	Historic
Eastern beard grass skipper	<i>Atrytone arogos arogos</i>	FSC	Current
Venus flytrap cutworm	<i>Hemipachnobia subporphyrea</i>	FSC	Current
a skipper	<i>Atrytonopsis sp. 1</i>	FSC	Current

#### **Vascular Plant:**

Coastal beaksedge	<i>Rhynchospora pleiantha</i>	FSC	Current
Dune blue curls	<i>Trichostema sp. 1</i>	FSC	Current
Loose watermilfoil	<i>Myriophyllum laxum</i>	FSC	Current
Pickering's daffodil	<i>Stylisma pickeringii var. pickeringii</i>	FSC	Current
Pondspice	<i>Litsea aestivalis</i>	FSC	Current
Raven's boxseed	<i>Ludwigia ravenii</i>	FSC	Current
<a href="#">Rough-leaved loosestrife</a>	<i>Lysimachia asperulaefolia</i>	E	Current
<a href="#">Seabeach amaranth</a>	<i>Amaranthus pumilus</i>	T	Current
Spring-flowering goldenrod	<i>Solidago verna</i>	FSC	Current
Venus' fly-trap	<i>Dionaea muscipula</i>	FSC	Current

#### **Nonvascular Plant:**

Savanna campylopus	<i>Campylopus carolinae</i>	FSC	Current
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#### **Lichen:**

#### **Definitions of Federal Status Codes:**

E = endangered. A taxon "in danger of extinction throughout all or a significant portion of its range."

T = threatened. A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range."

C = candidate. A taxon under consideration for official listing for which there is sufficient information to support listing. (Formerly "C1" candidate species.)

BGPA =Bald and Golden Eagle Protection Act. See below.

FSC=Federal Species of Concern. FSC is an informal term. It is not defined in the federal Endangered Species Act. In North Carolina, the Asheville and Raleigh Field Offices of the US Fish and Wildlife Service (Service) define Federal Species of Concern as those species that appear to be in decline or otherwise in need of conservation and are under consideration for listing or for which there is insufficient information to support listing at this time.Subsumed under the term "FSC" are all species petitioned by outside parties and other selected focal species identified in Service strategic plans, State Wildlife Action Plans, or Natural Heritage

## Program Lists.

T(S/A) = threatened due to similarity of appearance. A taxon that is threatened due to similarity of appearance with another listed species and is listed for its protection. Taxa listed as T(S/A) are not biologically endangered or threatened and are not subject to Section 7 consultation. See below.

EXP = experimental population. A taxon listed as experimental (either essential or nonessential). Experimental, nonessential populations of endangered species (e.g., red wolf) are treated as threatened species on public land, for consultation purposes, and as species proposed for listing on private land.

P = proposed. Taxa proposed for official listing as endangered or threatened will be noted as "PE" or "PT", respectively.

### **Bald and Golden Eagle Protection Act (BGPA):**

In the July 9, 2007 Federal Register( 72:37346-37372), the bald eagle was declared recovered, and removed (de-listed) from the Federal List of Threatened and Endangered wildlife. This delisting took effect August 8,2007. After delisting, the Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668-668d) becomes the primary law protecting bald eagles. The Eagle Act prohibits take of bald and golden eagles and provides a statutory definition of "take" that includes "disturb". The USFWS has developed National Bald Eagle Management Guidelines to provide guidance to land managers, landowners, and others as to how to avoid disturbing bald eagles. For mor information, visit <http://www.fws.gov/migratorybirds/baldeagle.htm>

### **Threatened due to similarity of appearance(T(S/A)):**

In the November 4, 1997 Federal Register (55822-55825), the northern population of the bog turtle (from New York south to Maryland) was listed as T (threatened), and the southern population (from Virginia south to Georgia) was listed as T(S/A) (threatened due to similarity of appearance). The T(S/A) designation bans the collection and interstate and international commercial trade of bog turtles from the southern population. The T(S/A) designation has no effect on land management activities by private landowners in North Carolina, part of the southern population of the species. In addition to its official status as T(S/A), the U.S. Fish and Wildlife Service considers the southern population of the bog turtle as a Federal species of concern due to habitat loss.

### **Definitions of Record Status:**

Current - the species has been observed in the county within the last 50 years.

Historic - the species was last observed in the county more than 50 years ago.

Obscure - the date and/or location of observation is uncertain.

Incidental/migrant - the species was observed outside of its normal range or habitat.

Probable/potential - the species is considered likely to occur in this county based on the proximity of known records (in adjacent counties), the presence of potentially suitable habitat, or both.

# Appendix G. NC Natural Heritage Data

Appendix G.  
 NCDEQ Natural Heritage Program  
 Heritage Data by County

TAXONOMIC_GROUP	SCIENTIFIC_NAME	COMMON_NAME	STATE_STATUS	FEDERAL_STATUS	STATE_RANK	GLOBAL_RANK	HABITAT_COMMENT	COUNTY	COUNTY_STATUS
Freshwater Fish	<i>Acipenser brevirostrum</i>	Shortnose Sturgeon	E	E	S1	G3	brackish water of large rivers and estuaries; spawns in freshwater areas	Carteret	Current
Freshwater Fish	<i>Acipenser oxyrinchus</i>	Atlantic Sturgeon	E	E	S2	G3	coastal waters, estuaries, large rivers	Carteret	Current
Vascular Plant	<i>Agalinis aphylla</i>	Scale-leaf Gerardia	W1		S3	G3G4	wet savannas and Sandhills streamhead pocosin ecotones	Carteret	Current
Vascular Plant	<i>Agalinis linifolia</i>	Flaxleaf Gerardia	W1		S3	G4?	savannas, clay-based Carolina bays, depression ponds, and other wet, open habitats	Carteret	Historical
Vascular Plant	<i>Agalinis obtusifolia</i>	Blunt-leaf False-foxglove	W1		S2S3	G4G5Q	savannas, seepage bogs, and wet ecotones	Carteret	Current
Vascular Plant	<i>Agalinis virgata</i>	Branched Gerardia	T		S2	G3G4Q	savannas and depression pond shores	Carteret	Current
Vascular Plant	<i>Agrostis altissima</i>	Tall Bentgrass	SR-T		S2	G4	wet savannas	Carteret	Current
Moth	<i>Agrotis carolina</i>	a Dart Moth	SR	FSC	S2S3	G2G3Q	flatwoods with pyxie-moss (<i>Pyxidanthera</i>) (endemic to North Carolina)	Carteret	Current
Reptile	<i>Alligator mississippiensis</i>	American Alligator	T	T(S/A)	S3	G5	fresh to slightly brackish lakes, ponds, rivers, and marshes	Carteret	Current
Vascular Plant	<i>Amaranthus pumilus</i>	Seabeach Amaranth	T	T	S1S2	G2	ocean beaches and island-end flats	Carteret	Current
Butterfly	<i>Amblyscirtes carolina</i>	Carolina Roadside-Skipper	W2		S3S4	G3G4	moist woods (mainly hardwoods) near cane; host plant -- cane (<i>Arundinaria</i>)	Carteret	Current
Butterfly	<i>Amblyscirtes reversa</i>	Reversed Roadside-Skipper	SR		S3	G3G4	flatwoods, savannas, pocosin borders, near cane; host plant -- cane (<i>Arundinaria</i>)	Carteret	Current
Amphibian	<i>Ambystoma mabeei</i>	Mabee's Salamander	SR		S2	G4	shallow ephemeral wetlands, such as Carolina bays, vernal pools, and sinkholes	Carteret	Historical
Bird	<i>Ammodramus henslowii</i>	Henslow's Sparrow	SC	FSC	S1B,S1N	G4	clearcut pocosins and other damp weedy fields [breeding season only]	Carteret	Current
Bird	<i>Ammodramus savannarum</i>	Grasshopper Sparrow	W1,W5		S3B,S1N	G5	pastures and other grasslands [breeding season only]	Carteret	Current
Vascular Plant	<i>Amphicarpum amphicarpon</i>	Pinebarrens Goober Grass	W1		S3	G4	pine savannas, pocosins, shallow peat burns in pocosin/savanna ecotones	Carteret	Current
Amphibian	<i>Anaxyrus quercicus</i>	Oak Toad	SR		S3	G5	pine flatwoods and savannas, pine sandhills where near water	Carteret	Current
Vascular Plant	<i>Andropogon mohrii</i>	Bog Bluestem	T		S2	G4?	wet savannas	Carteret	Current
Vascular Plant	<i>Andropogon perangustatus</i>	Narrowleaf Bluestem	W1		S2S3	G5T4	clay-based Carolina bays, upland depressions	Carteret	Current
Bird	<i>Anhinga anhinga</i>	Anhinga	W2		S3B	G5	wooded lakes or ponds, or open swamps (for nesting) [breeding evidence only]	Carteret	Current
Moth	<i>Anicla lubricans</i>	Slippery Dart	W3		S3?	G4G5	savannas and flatwoods	Carteret	Current
Vascular Plant	<i>Anthenantia rufa</i>	Purple Silkyscale	W1		S2	G5	savannas	Carteret	Current

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TAXONOMIC_GROUP	SCIENTIFIC_NAME	COMMON_NAME	STATE_STATUS	FEDERAL_STATUS	STATE_RANK	GLOBAL_RANK	HABITAT_COMMENT	COUNTY	COUNTY_STATUS
Vascular Plant	<i>Arenaria lanuginosa</i> var. <i>lanuginosa</i>	Spreading Sandwort	SR-P		S1	G5T5	maritime grasslands and forests, other sandy sites, shell middens, coquina limestone (marl) outcrops	Carteret	Historical
Moth	<i>Argyrostroma quadrifilaris</i>	Four-lined Chocolate	SR		S2S3	G4	pocosins and flatwoods	Carteret	Current
Vascular Plant	<i>Asclepias longifolia</i>	Longleaf Milkweed	W1		S2S3	G4G5	savannas and sandhill seeps	Carteret	Historical
Vascular Plant	<i>Asclepias pedicellata</i>	Savanna Milkweed	SC-V		S3	G4	dry savannas and moist flatwoods	Carteret	Current
Butterfly	<i>Atrytone arogos arogos</i>	Eastern Arogos Skipper	SR	FSC	SH	G3T1T2	savannas, open pinewoods, and other relatively undisturbed grasslands; host plants -- grasses, mainly pinebarrens sandreed (<i>Calamovilfa brevipilis</i>)	Carteret	Historical
Butterfly	<i>Atrytonopsis quinteri</i>	Crystal Skipper	SR	FSC	S1	G1Q	dunes and sandy flats; host plant -- seaside little bluestem (<i>Schizachyrium littorale</i>) (endemic to North Carolina)	Carteret	Current
Vascular Plant	<i>Baccharis angustifolia</i>	Saltwater False-willow	W1		S2	G4	brackish marshes, shrubby marsh edges	Carteret	Current
Vascular Plant	<i>Bartonia paniculata</i> ssp. <i>paniculata</i>	Twining Screwstem	W1		S2S3	G5T5	bogs, wet savannas, sandhill seeps, other open wet areas	Carteret	Current
Vascular Plant	<i>Bartonia verna</i>	White Screwstem	W1		S2	G5?	savannas, limesink ponds	Carteret	Current
Vascular Plant	<i>Bigelovia nudata</i> ssp. <i>australis</i>	Rayless-goldenrod	W7		S1?	G5T4T5	wet depressions and limesink ponds	Carteret	Current
Bird	<i>Botaurus lentiginosus</i>	American Bittern	SR		S1B,S3N	G5	fresh or brackish marshes [breeding evidence only]	Carteret	Current
Natural Community	Brackish Marsh (Needlerush Subtype)				S5	G5		Carteret	Current
Natural Community	Brackish Marsh (Salt Meadow Cordgrass Subtype)				S4	G4G5		Carteret	Current
Natural Community	Brackish Marsh (Smooth Cordgrass Subtype)				S1	G3G4		Carteret	Current
Vascular Plant	<i>Burmannia biflora</i>	Northern Bluethreads	W1		S2S3	G4G5	limesinks, cypress savannas, and sandhill seeps	Carteret	Current
Moth	<i>Cabera quadrifasciaria</i>	Four-lined Cabera Moth	W3		SU	GNR	unknown habitats	Carteret	Current
Vascular Plant	<i>Calamovilfa brevipilis</i>	Pinebarren Sandreed	W1		S3	G4	savannas, sandhill seeps	Carteret	Current
Butterfly	<i>Calephelis virginiensis</i>	Little Metalmark	SR		S2	G4	savannas and pine flatwoods; host plants -- vanilla-plant (<i>Trilisa odoratissima</i>), thistles (<i>Cirsium</i>)	Carteret	Current
Bird	<i>Calidris canutus rufa</i>	Red Knot -- Rufa subspecies	W1	T	S2N	G4T2	beaches and sand flats [wintering habitat only]	Carteret	Current
Moth	<i>Callosamia securifera</i>	Sweetbay Silkmoth	W3		SU	G4	pocosins and other wetlands with sweetbay	Carteret	Current
Vascular Plant	<i>Calopogon multiflorus</i>	Many-flower Grass-pink	E	FSC	S1	G2G3	savannas	Carteret	Current
Moss	<i>Campylopus carolinae</i>	Savanna Campylopus	SR-T	FSC	S1S2	G2	Obscure in xeric sandy soils or compact tufts of other mosses	Carteret	Current
Reptile	<i>Caretta caretta</i>	Loggerhead Seaturtle	T	T	S3B,S3N	G3	nests on beaches; forages in ocean and sounds	Carteret	Current
Vascular Plant	<i>Carex calcifugens</i>	Calcium-fleeing Sedge	SR-T		S2?	G3	mesic deciduous forests and maritime woodlands	Carteret	Current

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TAXONOMIC_GROUP	SCIENTIFIC_NAME	COMMON_NAME	STATE_STATUS	FEDERAL_STATUS	STATE_RANK	GLOBAL_RANK	HABITAT_COMMENT	COUNTY	COUNTY_STATUS
Vascular Plant	Carex chapmanii	Chapman's Sedge	W1		S3	G3	moist bottomlands and slopes, perhaps associated with marl	Carteret	Current
Vascular Plant	Carex hyalinolepis	Shoreline Sedge	W1		S2	G4G5	marshes	Carteret	Current
Vascular Plant	Carex mitchelliana	Mitchell's Sedge	W1		S2	G4	swampy woodlands and forests	Carteret	Current
Vascular Plant	Carex oligocarpa	Rich-woods Sedge	T		S1	G4G5	rich woods, mostly over calcareous or mafic rocks	Carteret	Current
Moth	Caripeta aretaria	Southern Pine Looper	W3		S3S4	G4	pine forests	Carteret	Current
Reptile	Cemophora coccinea	Scarlet Snake	W1,W5		S3	G5	sandhills, sandy woods, and other dry woods	Carteret	Current
Vascular Plant	Ceratophyllum australe	Southern Hornwort	SR-P		S1	G5TNR	pools in maritime forests, possibly other natural depression wetlands	Carteret	Historical
Bird	Charadrius melodus melodus	Piping Plover - Atlantic Coast subspecies	T	T	S1B,S1N	G3T3	ocean beaches and island-end flats [breeding evidence only]	Carteret	Current
Bird	Charadrius wilsonia	Wilson's Plover	SC		S2B	G5	beaches, island-end flats, estuarine islands [breeding evidence only]	Carteret	Current
Reptile	Chelonia mydas	Green Seaturtle	T	T	S1B,SUN	G3	nests on beaches; forages in ocean and sounds	Carteret	Current
Bird	Circus cyaneus	Northern Harrier	SR		S1B,S4N	G5	extensive brackish marshes (for nesting) [breeding evidence only]	Carteret	Current
Vascular Plant	Cirsium lecontei	Leconte's Thistle	SC-V	FSC	S2	G3	savannas	Carteret	Current
Vascular Plant	Cladium mariscoides	Twig-rush	SR-O		S3	G5	bogs, fens, brackish marshes, sandhill seepage bogs	Carteret	Current
Lichen	Cladonia evansii	Powder-puff Lichen	W7		S2	G3G5	sandhills (primarily near the coast) usually associated with Quercus geminata	Carteret	Current
Vascular Plant	Cleistesioipsis bifaria	Small Spreading Pogonia	W1		S3	G4?	savannas, dry meadows	Carteret	Current
Vascular Plant	Cleistesioipsis divaricata	Spreading Pogonia	W1		S3	G4	pine savannas	Carteret	Current
Vascular Plant	Clematis catesbyana	Coastal Virgin's-bower	SR-P		S2	G4G5	dunes, edges of maritime forests, or over dolomite	Carteret	Current
Natural Community	Coastal Fringe Evergreen Forest (Typic Subtype)				S2	G2		Carteret	Current
Natural Community	Coastal Plain Semipermanent Impoundment (Cypress-Gum Subtype)				S4	G4G5		Carteret	Obscure
Natural Community	Coastal Plain Semipermanent Impoundment (Open Water Subtype)				S4	G5		Carteret	Obscure
Natural Community	Coastal Plain Small Stream Swamp				S4	G4?		Carteret	Current
Vascular Plant	Coelorachis rugosa	Wrinkled Jointgrass	W1		S3	G5	limesink ponds, clay-based Carolina bays, wet savannas	Carteret	Current
Vascular Plant	Corallorhiza wisteriana	Spring Coral-root	SR-O		S1S2	G5	nutrient-rich forests, especially over limestone, mafic rocks or shell rich sands	Carteret	Historical
Vascular Plant	Coreopsis palustris	Beadle's Coreopsis	SR-P		S1S2	G3G4Q	swamp forests and swamp edges	Carteret	Current
Vascular Plant	Corydalis micrantha	Slender Corydalis	T		S1	G5T4	thin, circumneutral soils on rock outcrops or cliffs	Carteret	Current
Dragonfly or Damselfly	Coryphaeschna ingens	Regal Darner	SR		S2?	G5	lakes and ponds	Carteret	Historical
Vascular Plant	Crocianthemum carolinianum	Carolina Sunrose	E		S1	G4	sandhills, pinelands, dry savannas	Carteret	Current
Vascular Plant	Crocianthemum corymbosum	Pinebarren Sunrose	T		S1	G4G5	maritime forests	Carteret	Current

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TAXONOMIC_GROUP	SCIENTIFIC_NAME	COMMON_NAME	STATE_STATUS	FEDERAL_STATUS	STATE_RANK	GLOBAL_RANK	HABITAT_COMMENT	COUNTY	COUNTY_STATUS
Vascular Plant	<i>Crocotanthemum georgianum</i>	Georgia Sunrose	E		S1	G4	maritime forests	Carteret	Current
Reptile	<i>Crotalus adamanteus</i>	Eastern Diamondback Rattlesnake	E	FSC	S1	G4	pine flatwoods, savannas, pine-oak sandhills	Carteret	Current
Reptile	<i>Crotalus horridus</i>	Timber Rattlesnake	SC		S3	G4	wetland forests in the Coastal Plain; rocky, upland forests elsewhere [NHP tracking only den/hibernacula sites and selected isolated populations]	Carteret	Current
Vascular Plant	<i>Cyperus tetragonus</i>	Four-angled Flatsedge	SC-V		S1	G4?	maritime forests and barrier island grasslands	Carteret	Current
Moth	<i>Dargida aleada</i>	an Armyworm Moth	SR		S1S2	GNR	maritime grasslands	Carteret	Current
Moth	<i>Dargida rubripennis</i>	Pink Streak	SR		S2S3	G3G4	beach grasslands and sandy fields	Carteret	Current
Reptile	<i>Deirochelys reticularia</i>	Chicken Turtle	SR		S3	G5	quiet waters of ponds, ditches, and sluggish streams	Carteret	Current
Reptile	<i>Dermochelys coriacea</i>	Leatherback Seaturtle	E	E	S1B,SUN	G2	oceans, rarely in sounds	Carteret	Current
Vascular Plant	<i>Dichanthelium caeruleascens</i>	Blue Witch Grass	E	FSC	S1S2	G2G3	maritime grasslands and wet savannas with a calcareous influence	Carteret	Current
Vascular Plant	<i>Dichanthelium columbianum</i>	American Witch Grass	W7		S2?	G5T5	thin woods and open ground, usually in sandy soil	Carteret	Current
Vascular Plant	<i>Dichanthelium cryptanthum</i> (syn. <i>Dichanthelium</i> sp. 9)	Hidden-flowered Witchgrass	SR-T		S2	G3G4Q	wet streamhead pocosin openings, including utility clearings	Carteret	Current
Vascular Plant	<i>Dichanthelium neuranthum</i>	Nerved Witch Grass	SC-V		S1	G5T3	maritime wet grasslands	Carteret	Historical
Vascular Plant	<i>Dichanthelium oligosanthes</i> var. <i>scribnerianum</i>	Scribner's Witch Grass	W7		S1?	G5T5	calcareous, coastal-fringe forests and dry, thin woods on basic soils	Carteret	Current
Vascular Plant	<i>Dichanthelium ovale</i> var. <i>ovale</i>	Elliott's Witch Grass	W1		S2S3	G5T5	dry to damp, sandy pinelands	Carteret	Current
Vascular Plant	<i>Dichanthelium spretum</i>	Eaton's Witch Grass	SR-D		S1S2	G5	wet sands and peats of bogs, savannas, meadows, and shores	Carteret	Current
Vascular Plant	<i>Dichanthelium webberianum</i> (syn. <i>Panicum webberianum</i> )	Webber's Witch Grass	W1		S3	GNR	moist pine savannas and flatwoods	Carteret	Current
Moss	<i>Dicranum spurium</i>	Rusty Fork Moss	W7		S2?	G5	sandy soil, decayed logs, acidic rock, humus over rock, pine woods, sometimes bogs	Carteret	Historical
Vascular Plant	<i>Dionaea muscipula</i>	Venus Flytrap	SC-V	FSC	S2	G3	savannas, seepage bogs, pocosin edges	Carteret	Current
Moth	<i>Doryodes bistrialis</i>	Double-lined Doryodes	W3		SU	G4	marshes	Carteret	Current
Moth	<i>Doryodes</i> sp. 1	Wiregrass Doryodes	W3		S3S4	G3G4	savannas, flatwoods, and sandhills	Carteret	Current
Vascular Plant	<i>Dryopteris ludoviciana</i>	Southern Woodfern	W1		S2	G4	acid swamps	Carteret	Current
Natural Community	Dune Grass (Bluestem Subtype)				S1	G3		Carteret	Current
Natural Community	Dune Grass (Southern Subtype)				S2	G3		Carteret	Current
Bird	<i>Egretta caerulea</i>	Little Blue Heron	SC		S3B,S3N	G5	forests or thickets on maritime islands, rarely in swamps or at ponds½[breeding evidence only]	Carteret	Current
Bird	<i>Egretta thula</i>	Snowy Egret	SC		S2S3B,S3N	G5	forests or thickets on maritime islands, rarely in swamps or at ponds½[breeding evidence only]	Carteret	Current

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Bird	<i>Egretta tricolor</i>	Tricolored Heron	SC		S3B,S3N	G5	forests or thickets on maritime islands [breeding evidence only]	Carteret	Current
Vascular Plant	<i>Eleocharis cellulosa</i>	Gulfcoast Spikerush	E		S2	G4G5	interdune ponds, brackish marshes & tidal freshwater marshes	Carteret	Current
Vascular Plant	<i>Eleocharis equisetoides</i>	Horsetail Spikerush	W1		S3	G4	limesink ponds, lakes, borrow pits, ditches	Carteret	Current
Vascular Plant	<i>Eleocharis erythropoda</i>	Bald Spikerush	W7		S1	G5	stream banks and marshes	Carteret	Historical
Vascular Plant	<i>Eleocharis fallax</i>	Creeping Spikerush	SR-T		S1S2	G4G5	fresh to brackish tidal marshes	Carteret	Historical
Vascular Plant	<i>Eleocharis parvula</i>	Little-spike Spikerush	SR-D		S1	G5	brackish and fresh marshes	Carteret	Current
Vascular Plant	<i>Eleocharis robbinsii</i>	Robbins' Spikerush	SC-V		S2	G4G5	limesink ponds, clay-based Carolina bays, peat-burn lakes, millponds, beaver ponds, artificial lakes	Carteret	Current
Vascular Plant	<i>Eleocharis rostellata</i>	Beaked Spikerush	SR-O		S2	G5	brackish marshes	Carteret	Current
Vascular Plant	<i>Eleocharis tricostata</i>	Three-angle Spikerush	W1		S2S3	G4	bogs and savannas	Carteret	Historical
Vascular Plant	<i>Eleocharis vivipara</i>	Viviparous Spikerush	E		S1	G5	bogs and pools	Carteret	Current
Vascular Plant	<i>Elymus virginicus</i> var. <i>halophilus</i>	Terrell Grass	SC-V		S1	G5T5	brackish marshes, maritime forests and hammocks	Carteret	Current
Freshwater Fish	<i>Enneacanthus obesus</i>	Banded Sunfish	SR		S3	G5	most Atlantic drainages	Carteret	Current
Vascular Plant	<i>Erythrina herbacea</i>	Coralbean	E		S2	G5	maritime forests	Carteret	Historical
Natural Community	Estuarine Fringe Pine Forest (Loblolly Pine Subtype)				S3	G3		Carteret	Current
Bird	<i>Eudocimus albus</i>	White Ibis	W2		S3B,S3N	G5	forests or thickets on maritime islands, rarely at ponds [breeding sites only]	Carteret	Current
Vascular Plant	<i>Euphorbia bombensis</i>	Southern Seaside Spurge	SR-T		S2?	G4G5	seabeaches	Carteret	Current
Butterfly	<i>Euphyes berryi</i>	Berry's Skipper	SR		S1	G2	wet areas near ponds, canals, or marshes; host plants -- sedges (<i>Carex</i>)	Carteret	Current
Butterfly	<i>Euphyes bimacula</i>	Two-spotted Skipper	SR		S2	G4	wet savannas, bogs, sedgy areas near wet woods; host plants -- sedges (<i>Carex</i>)	Carteret	Current
Moss	<i>Fabronia ciliaris</i> var. <i>polycarpa</i>	A False Crushed-rice Moss	W7		S2?	G5T4T5	bark of trees, less commonly on rocks	Carteret	Historical
Bird	<i>Falco peregrinus anatum</i> (syn. <i>Falco peregrinus</i> )	American Peregrine Falcon	E		S1B,S2N	G4T4	cliffs (nesting); coastal ponds and mudflats (foraging in winter) [breeding evidence; 1/2 regular wintering sites]	Carteret	Current
Reptile	<i>Farancia erythrogramma</i>	Rainbow Snake	SR		S3	G4	swamps, lakes, rivers, and other sluggish water	Carteret	Historical
Moth	<i>Franclemontia interrogans</i>	Franclemont's Cane Moth	SR		S2S3	G3G4	canebrakes	Carteret	Current
Liverwort	<i>Frullania donnellii</i>	A Liverwort	SR-T		SH	G3?	on bark of Ilex in marshes	Carteret	Historical
Freshwater Fish	<i>Fundulus confluentus</i>	Marsh Killifish	W2		S3	G5	fresh to brackish waters along coast	Carteret	Current
Freshwater Fish	<i>Fundulus luciae</i>	Spotfin Killifish	W2		S3	G4	ponds and pools along coast	Carteret	Current
Bird	<i>Gallinula galeata</i>	Common Gallinule	W2		S3B,S2N	G5	freshwater ponds and impoundments with much emergent vegetation [breeding season only]	Carteret	Current
Bird	<i>Gelochelidon nilotica</i>	Gull-billed Tern	T		S1S2B	G5	sand flats on maritime islands [breeding evidence only]	Carteret	Current

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Moth	Gondysia similis	Gordonia Darkwing	W3		S2S3	G3G4	pocosins and bay forests	Carteret	Current
Vascular Plant	Habenaria repens	Water-spider Orchid	W1		S2	G5	in stagnant, blackwater pools and impoundments	Carteret	Current
Bird	Haematopus palliatus	American Oystercatcher	SC		S2S3B,S3N	G5	estuaries, oyster beds, mudflats [breeding evidence only]	Carteret	Current
Bird	Haliaeetus leucocephalus	Bald Eagle	T	BGPA	S3B,S3N	G5	mature forests near large bodies of water (nesting); rivers, lakes, and sounds (foraging) [breeding evidence only]	Carteret	Current
Bird	Helmitheros vermivorum pop. 1	Worm-eating Warbler - Coastal Plain Population	W5		S3B	G5TNR	nonriverine wet hardwoods, pocosins [breeding season only]	Carteret	Current
Moth	Hemipachnobia subporphyrea	Venus Flytrap Cutworm Moth	SR	FSC	S1?	G1	savannas with Venus flytraps (endemic to North Carolina)	Carteret	Current
Butterfly	Hermeuptychia intricata	Intricate Satyr	W3		SU	GNR	mesic to moist hardwood forests; host plants -- grasses; newly described species, very difficult to identify; most NC records based on old specimens	Carteret	Historical
Reptile	Heterodon simus	Southern Hognose Snake	SC	FSC	S2	G2	sandy woods, particularly pine-oak sandhills	Carteret	Historical
Vascular Plant	Hibiscus aculeatus	Comfortroot	T		S1	G4G5	bay forests, sand ridges, and roadsides	Carteret	Current
Natural Community	High Pocosin (Evergreen Subtype)				S3S4	G3		Carteret	Current
Bird	Himantopus mexicanus	Black-necked Stilt	SR		S1B	G5	fresh or brackish ponds and impoundments [breeding evidence only]	Carteret	Current
Vascular Plant	Hypericum fasciculatum	Peelbark St. John's-wort	E		S1	G5	beaver ponds, low pinelands, pools	Carteret	Current
Vascular Plant	Hypoxis juncea	Fringed Yellow Stargrass	SR-P		S1	G4?	savannas	Carteret	Current
Vascular Plant	Ilex cassine	Dahoon	W1		S2	G5	blackwater swamps and pocosins	Carteret	Current
Natural Community	Interdune Marsh				S1	G2		Carteret	Current
Natural Community	Interdune Pond				S1	G1		Carteret	Current
Vascular Plant	Ipomoea imperati	Beach Morning-glory	T		S1	G5	sea beaches and foredunes	Carteret	Current
Vascular Plant	Ipomoea pes-caprae	Railroad Morning-glory	W4		S1	G5	ocean beaches	Carteret	Current
Vascular Plant	Iresine rhizomatosa	Rootstock Bloodleaf	W1		S2S3	G5	low wet places, interdune swales, damp woods, edges of brackish marshes	Carteret	Current
Vascular Plant	Isotria verticillata	Large Whorled Pogonia	W1		S2S3	G5	forests	Carteret	Current
Bird	Ixobrychus exilis	Least Bittern	SC		S2S3B	G5	fresh or brackish marshes [breeding evidence only]	Carteret	Current
Reptile	Lampropeltis getula sticticeps	Outer Banks Kingsnake	SC		S2	G5T2Q	maritime forests, thickets, and grasslands on the Outer Banks (endemic to North Carolina)	Carteret	Historical
Bird	Lanius ludovicianus	Loggerhead Shrike	SC, W2		S3B,S3N	G4	fields and pastures [breeding season only]	Carteret	Historical
Mammal	Lasiurus seminolus	Seminole Bat	W2		S3	G5	forages over open areas, often over water (summer); ½ mainly in southern half of the state	Carteret	Current
Bird	Laterallus jamaicensis	Black Rail	SC	FSC	S2S3B,S2N	G3G4	brackish marshes, rarely fresh marshes [breeding evidence only]	Carteret	Current

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Liverwort	Lejeunea bermudiana	A Liverwort	SR-P		S1	G3G4	on marl outcrops or on decaying logs in blackwater swamps, or tree bases in swamps	Carteret	Current
Liverwort	Lejeunea dimorphophylla	A Liverwort	SR-L		S1	G2G3	on bark in maritime forests	Carteret	Historical
Reptile	Lepidochelys kempii	Kemp's Ridley Seaturtle	E	E	S1B,SUN	G1	ocean and sounds	Carteret	Current
Vascular Plant	Leucospora multifida	Cliff Conobea	W4		SU	G5	sandy margins of ponds and wetlands	Carteret	Current
Reptile	Liodytes pygaea	Black Swampsnake	SR		S2	G5	in lush vegetation of ponds, ditches, or sluggish streams	Carteret	Historical
Reptile	Liodytes rigida	Glossy Crayfish Snake	SR		S2S3	G5	marshes, cypress ponds, other wetlands	Carteret	Historical
Moth	Lithophane lemmeri	Lemmer's Pinion	W3		S1S3	G3G4	cedar glades and Atlantic white cedar forests	Carteret	Current
Moth	Litoprosopus futilis	Palmetto Borer	W3		SU	G4	palmettos	Carteret	Current
Vascular Plant	Litsea aestivalis	Pondspice	SC-V	FSC	S2S3	G3?	limesink ponds, other pools	Carteret	Current
Natural Community	Low Pocosin (Titi Subtype)				S2S3	G2G3		Carteret	Current
Vascular Plant	Ludwigia alata	Winged Seedbox	SR-P		S2	G3G5	interdune ponds, marshes	Carteret	Current
Vascular Plant	Ludwigia lanceolata	Lanceleaf Seedbox	E		S1	G3	interdune ponds, open wet areas	Carteret	Current
Vascular Plant	Ludwigia linifolia	Flaxleaf Seedbox	T		S2	G4	limesink ponds	Carteret	Current
Vascular Plant	Ludwigia maritima	Seaside Seedbox	W7		S2S3	G5	savannas, dunes, and ditches	Carteret	Current
Vascular Plant	Ludwigia ravenii	Raven's Seedbox	T	FSC	S1	G1G2	savannas, swamps, marshes, wet open places	Carteret	Current
Vascular Plant	Lysimachia asperulifolia	Rough-leaf Loosestrife	E	E	S3	G3	pocosin/savanna ecotones, pocosins	Carteret	Current
Vascular Plant	Lysimachia loomisii	Loomis's Loosestrife	W1		S3	G3?	savannas and pocosins	Carteret	Current
Dragonfly or Damselfly	Macrodiplax balteata	Marl Pennant	W3		S2S3	G5	ponds and lakes near the coast, usually brackish or near marl	Carteret	Current
Vascular Plant	Magnolia grandiflora	Southern Magnolia	W7		S2?	G5	mainland forests with maritime influence on the southeastern coast of North Carolina; introduced elsewhere	Carteret	Current
Reptile	Malaclemys terrapin	Diamondback Terrapin	SC	FSC	S3	G4	salt or brackish marshes, estuaries	Carteret	Current
Vascular Plant	Malaxis spicata	Florida Adder's-mouth	SC-V		S1	G4?	maritime swamp forests, calcareous but mucky outer coastal plain swamps	Carteret	Current
Natural Community	Maritime Dry Grassland (Typic Subtype)				S2	G2G3		Carteret	Current
Natural Community	Maritime Evergreen Forest (Mid Atlantic Subtype)				S2	G2		Carteret	Current
Natural Community	Maritime Shrub (Stunted Tree Subtype)				S2	G3		Carteret	Current
Natural Community	Maritime Shrub (Wax-Myrtle Subtype)				S4?	G3G5		Carteret	Current
Natural Community	Maritime Shrub Swamp (Dogwood Subtype)				S1	G1		Carteret	Current
Natural Community	Maritime Swamp Forest (Typic Subtype)				S2	G2		Carteret	Current
Natural Community	Maritime Wet Grassland (Southern Hairgrass Subtype)				S2	G2		Carteret	Current
Natural Community	Marsh Hammock				S2	G3?		Carteret	Current

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Reptile	Masticophis flagellum	Coachwhip	SR		S3	G5	dry and sandy woods, mainly in pine/oak sandhills	Carteret	Historical
Butterfly	Megathymus yuccae	Yucca Giant-Skipper	W2		S3S4	G5	dunes, flatwoods, old fields, and other places near yuccas; host plants - <i>Yucca</i> species	Carteret	Historical
Grasshopper or Katydid	Melanoplus decorus	Decorated Spur-throat Grasshopper	SR		S2S3	G2G3	savannas, flatwoods, low pocosins (endemic to North Carolina)	Carteret	Current
Grasshopper or Katydid	Mermiria bivittata	Two-striped Mermiria	SR		S2S3	G5	dune grasslands and other grassy areas in or near coastal forests	Carteret	Current
Grasshopper or Katydid	Mermiria picta	Lively Mermiria	W3		S3?	G5	longleaf pine savannas and flatwoods	Carteret	Current
Moth	Meropleon cinnamicolor	a Borer Moth	SR		S1?	GU	coastal marshes	Carteret	Current
Natural Community	Mesic Mixed Hardwood Forest (Coastal Plain Subtype)				S3	G3		Carteret	Current
Natural Community	Mesic Pine Savanna (Coastal Plain Subtype)				S2	G2G3		Carteret	Current
Liverwort	Metzgeria uncigera	A Liverwort	W7		S1	G3	on bark in maritime forests or on rhododendron in mountain forests	Carteret	Historical
Vascular Plant	Myriophyllum laxum	Loose Water-milfoil	E		S2	G3	limesink ponds, waters of natural lakes	Carteret	Current
Moth	Nemoria outina	an Emerald Moth	W3		SU	GNR	no habitat information	Carteret	Current
Butterfly	Neonympha areolatus	Georgia Satyr	SR		S2	G3G4	savannas, wet powerline clearings, other damp grassy places; host plants -- sedges	Carteret	Current
Moth	Neoplynes eudora	a Wasp Moth	W3		S2S3	G5	unknown	Carteret	Current
Mammal	Neotoma floridana floridana	Florida Eastern Woodrat	T		S1	G5T5	forests, mainly in moist areas	Carteret	Historical
Reptile	Nerodia sipedon williamengelsi	Carolina Watersnake	SC		S3	G5T3	salt or brackish marshes (endemic to North Carolina)	Carteret	Current
Natural Community	Nonriverine Wet Hardwood Forest (Oak Flat Subtype)				S1	G2		Carteret	Current
Freshwater Fish	Notropis chalybaeus	Ironcolor Shiner	SR		S2S3	G4	coastal plain rivers and creeks (Beaufort*, Bertie*, Bladen, Brunswick, Carteret, Chowan*, Columbus, Craven*, Cumberland*, Duplin, Edgecombe*, Gates*, Greene*, Halifax*, Harnett, Hertford, Hoke, Johnston, Jones, Lenoir*, Martin, Moore*, Nash*, New Hanover*, Northampton, Onslow, Pender*, Richmond, Robeson, Sampson*, Scotland, Wake, Wayne*, Wilson*)	Carteret	Current
Bird	Nyctanassa violacea	Yellow-crowned Night-Heron	SR		S2B	G5	inland swamps; woods or thickets on maritime islands [breeding evidence only]	Carteret	Current
Bird	Nycticorax nycticorax	Black-crowned Night-Heron	W1		S3B,S3N	G5	maritime thickets or forests, almost always on small islands [nesting sites only]	Carteret	Current
Vascular Plant	Oenothera fruticosa var. unguiculata	Southern Sundrops	W7		S2S3	G5T2T3	wet clay savannas	Carteret	Current

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Vascular Plant	<i>Ophioglossum crotalophoroides</i>	Bulbous Adder's-tongue	W7		S1?	G5	moist ditchbanks and grassy roadside flats	Carteret	Historical
Vascular Plant	<i>Ophioglossum petiolatum</i>	Long-stem Adder's-tongue	W7		S2?	G5	maritime wet grasslands, moist ditchbanks, grassy roadside flats	Carteret	Current
Reptile	<i>Ophisaurus mimicus</i>	Mimic Glass Lizard	SC	FSC	S1	G3	pine flatwoods, savannas, pine/oak sandhills	Carteret	Current
Vascular Plant	<i>Oplismenus setarius</i>	Shortleaf Basket Grass	SR-P		S1	G5T5	maritime forests, bottomlands	Carteret	Current
Moth	<i>Orgyia detrita</i>	a tussock moth	W3		S2S3	G3G4	hardwood forests	Carteret	Current
Vascular Plant	<i>Panicum tenerum</i>	Southeastern Panic Grass	W1		S3	G4	wet savannas, sandhill seeps, limesink ponds	Carteret	Current
Butterfly	<i>Papilio cresphontes</i>	Giant Swallowtail	SR		S2S3	G5	primarily coastal in maritime forests or thickets; also in foothills and mountains near hoptree; host plants - prickly-ash (<i>Zanthoxylum</i>), hoptree (<i>Ptelea</i>)	Carteret	Current
Vascular Plant	<i>Parietaria praetermissa</i>	Large-seed Pellitory	SC-V		S1	G3G4	shell middens, disturbed sites, maritime forests	Carteret	Current
Vascular Plant	<i>Paspalum praecox</i>	Early Crown Grass	W1		S2S3	G4	limesink ponds and savannas	Carteret	Current
Vascular Plant	<i>Paspalum vaginatum</i>	Seashore Crown Grass	SR-P		S1S2	G5	brackish marshes, low wet places	Carteret	Current
Bird	<i>Passerina ciris</i>	Painted Bunting	SC	FSC	S3B	G5	maritime shrub thickets and forest edges [breeding evidence only]	Carteret	Current
Bird	<i>Pelecanus occidentalis</i>	Brown Pelican	SR		S3B,S4N	G4	maritime islands [breeding evidence only]	Carteret	Current
Vascular Plant	<i>Peltandra sagittifolia</i>	Spoonflower	SR-P		S2S3	G3G4	pocosins, other wet, peaty sites	Carteret	Current
Mammal	<i>Perimyotis subflavus</i>	Tricolored Bat	SR		S3	G2G3	roosts in clumps of leaves (mainly in summer), caves, rock crevices, and other dark and sheltered places	Carteret	Current
Vascular Plant	<i>Persea borbonia</i>	Upland Red Bay	W7		S2	G5	sandy upland soils in maritime forests	Carteret	Current
Vascular Plant	<i>Persicaria glabra</i>	Dense-flower Knotweed	W1		S3	G5	Swamp forests	Carteret	Current
Vascular Plant	<i>Persicaria hirsuta</i> (syn. <i>Polygonum hirsutum</i> )	Hairy Smartweed	E		S1	G3G4	limesink ponds, clay-based Carolina bays, drawdown zones of blackwater riverbanks	Carteret	Historical
Bird	<i>Peucaea aestivalis</i>	Bachman's Sparrow	SC	FSC	S3B,S2N	G3	open longleaf pine forests, old fields [breeding evidence only]	Carteret	Current
Bird	<i>Phalacrocorax auritus</i>	Double-crested Cormorant	SR		S1B,S5N	G5	lakes with scattered trees, coastal sand bars (nesting) [breeding evidence only]	Carteret	Current
Moth	<i>Photodes carterae</i>	Carter's Noctuid Moth	SR		S2S3	G2G3	savannas and sandhills with pinebarrens sandreed (<i>Calamovilfa brevipilis</i>)	Carteret	Historical
Moth	<i>Photodes enervata</i>	a Borer Moth	W3		SU	G4	tidal marshes	Carteret	Current
Butterfly	<i>Phyciodes phaon</i>	Phaon Crescent	W5		S3	G5	open, often dry areas, mainly on barrier islands; host plants -- fogfruit (<i>Lippia</i>)	Carteret	Current
Vascular Plant	<i>Phytolacca rigida</i>	Maritime Pokeweed	W7		S2	G5T5	dunes, edges of brackish or salt marshes	Carteret	Current

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Bird	<i>Picoides borealis</i>	Red-cockaded Woodpecker	E	E	S2	G3	mature open pine forests, mainly in longleaf pine [breeding evidence only]	Carteret	Current
Natural Community	Pine/Scrub Oak Sandhill (Blackjack Subtype)				S3	G3		Carteret	Current
Natural Community	Pine/Scrub Oak Sandhill (Coastal Fringe Subtype)				S2	G2		Carteret	Current
Natural Community	Pine/Scrub Oak Sandhill (Mixed Oak Subtype)				S3	G3?		Carteret	Current
Vascular Plant	<i>Pinguicula pumila</i>	Small Butterwort	E		S2	G4	savannas	Carteret	Current
Liverwort	<i>Plagiochila ludoviciana</i>	A Liverwort	SR-P		S1	G5	on bark or moist rock in swamps and mountain gorges	Carteret	Current
Liverwort	<i>Plagiochila miradorensis</i> var. <i>miradorensis</i>	A Liverwort	SR-P		SH	G4T4	on bark in maritime forests and swamps	Carteret	Historical
Vascular Plant	<i>Platanthera blephariglottis</i>	White-fringed Orchid	W1		S3?	G4G5	bogs or depressions	Carteret	Current
Vascular Plant	<i>Platanthera integra</i>	Yellow Fringeless Orchid	SC-V		S2	G3G4	savannas	Carteret	Current
Bird	<i>Plegadis falcinellus</i>	Glossy Ibis	SC		S1S2B	G5	forests or thickets on maritime islands [breeding evidence only]	Carteret	Current
Natural Community	Pocosin Opening (Sedge-Fern Subtype)				S1S2	G1G2		Carteret	Current
Bird	<i>Podilymbus podiceps</i>	Pied-billed Grebe	W2		S3B,S5N	G5	fresh to slightly brackish ponds and impoundments, usually with fringing vegetation [breeding season only]	Carteret	Current
Vascular Plant	<i>Polygala hookeri</i>	Hooker's Milkwort	SC-V		S2S3	G3	savannas	Carteret	Current
Vascular Plant	<i>Polygonum glaucum</i>	Seabeach Knotweed	E		S1	G3	ocean and sound beaches	Carteret	Current
Natural Community	Pond Pine Woodland (Canebrake Subtype)				S1	G1		Carteret	Historical
Natural Community	Pond Pine Woodland (Typic Subtype)				S3	G3		Carteret	Current
Vascular Plant	<i>Ponthieva racemosa</i>	Shadow-witch	T		S2	G4G5	blackwater forests and swamps, especially over marl	Carteret	Current
Bird	<i>Porphyrio martinicus</i>	Purple Gallinule	SR		SHB	G5	freshwater ponds with floating vegetation [breeding evidence only]	Carteret	Historical
Vascular Plant	<i>Potamogeton foliosus</i>	Leafy Pondweed	W1		S2	G5	lakes, streams, and ponds	Carteret	Current
Vascular Plant	<i>Potamogeton nodosus</i>	American Pondweed	SR-D		SH	G5	ponds and streams with moderate to high PH	Carteret	Historical
Amphibian	<i>Pseudacris nigrita</i>	Southern Chorus Frog	SR		S2	G5	ditches, Carolina bays, and other temporary shallow pools and ponds	Carteret	Historical
Amphibian	<i>Pseudacris ornata</i>	Ornate Chorus Frog	SR		S1S2	G4	swamps, savannas, wooded ponds and pools	Carteret	Historical
Butterfly	<i>Pyrgus albescens</i>	White Checkered-Skipper	W3		SU	G5	dry, open habitats, often where sandy, in the southern parts of the state; host plants -- mallows (<i>Sida</i>)	Carteret	Current
Vascular Plant	<i>Quercus minima</i>	Dwarf Live Oak	SR-P		S1	G5	pine flatwoods, coastal fringe sandhills	Carteret	Current
Bird	<i>Rallus elegans</i>	King Rail	W1,W3		S3B,S3N	G4	fresh to slightly brackish marshes [breeding season only]	Carteret	Current

Appendix G.  
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TAXONOMIC_GROUP	SCIENTIFIC_NAME	COMMON_NAME	STATE_STATUS	FEDERAL_STATUS	STATE_RANK	GLOBAL_RANK	HABITAT_COMMENT	COUNTY	COUNTY_STATUS
Bird	<i>Rallus limicola</i>	Virginia Rail	W3		S3B,S5N	G5	brackish to nearly fresh marshes near coast [breeding season only]	Carteret	Current
Amphibian	<i>Rana capito capito</i> (syn. <i>Rana capito</i> , <i>Rana capito capito</i> )	Carolina Gopher Frog	T	FSC	S1	G3	breeds in temporary fish-free pools; forages in sandy woods, especially pine-oak sandhills	Carteret	Current
Reptile	<i>Rhadinaea flavilata</i>	Pine Woods Snake	W2		S3	G4	pine flatwoods and other damp woodlands	Carteret	Current
Vascular Plant	<i>Rhexia cubensis</i>	West Indies Meadow-beauty	W1		S3	G4G5	limesink ponds	Carteret	Current
Vascular Plant	<i>Rhynchospora galeana</i>	Short-bristled Beaksedge	SR-P		S2S3	G3G4	savannas	Carteret	Current
Vascular Plant	<i>Rhynchospora harperi</i>	Harper's Beaksedge	SC-V		S2	G4?	limesink ponds and cypress savannas	Carteret	Current
Vascular Plant	<i>Rhynchospora inundata</i>	Narrowfruit Beaksedge	W1		S3	G4?	limesink ponds, clay-based Carolina bays	Carteret	Current
Vascular Plant	<i>Rhynchospora macra</i>	Southern White Beaksedge	T		S2	G3	sandhill seeps, blackwater impoundments, streamhead pocosins	Carteret	Current
Vascular Plant	<i>Rhynchospora microcarpa</i>	Southern Beaksedge	SR-P		S2	G5	maritime wet grasslands, clay-based Carolina bays, limesink ponds, swamp forests	Carteret	Current
Vascular Plant	<i>Rhynchospora nitens</i>	Shortbeak Baldsedge	W1		S3	G4?	savannas, limesinks, other wet open places	Carteret	Current
Vascular Plant	<i>Rhynchospora odorata</i>	Fragrant Beaksedge	SC-V		S1	G4	maritime wet grasslands	Carteret	Current
Vascular Plant	<i>Rhynchospora oligantha</i>	Feather-bristle Beaksedge	W1		S3	G4	savannas, seepage bogs	Carteret	Current
Vascular Plant	<i>Rhynchospora pallida</i>	Pale Beaksedge	W1		S3	G3	savannas, sandhill seeps, and pocosins	Carteret	Current
Vascular Plant	<i>Rhynchospora pinetorum</i>	Small's Beaksedge	SR-T		S2	G5?T3?	wet savannas, maritime wet grasslands	Carteret	Current
Vascular Plant	<i>Rhynchospora pleiantha</i>	Coastal Beaksedge	T	FSC	S2	G2G3	limesink ponds	Carteret	Current
Vascular Plant	<i>Rhynchospora scirpoides</i>	Long-beak Baldsedge	W1		S3	G4	beaver ponds, limesink ponds, wet savannas	Carteret	Current
Vascular Plant	<i>Rhynchospora</i> sp. 2	Croatan Beaksedge	W7	FSC	S1?	G1?	ecotone between savanna and pocosin	Carteret	Historical
Vascular Plant	<i>Rhynchospora stenophylla</i>	Littleleaf Beaksedge	W1		S3	G4	savannas, seepage bogs	Carteret	Historical
Vascular Plant	<i>Rhynchospora wrightiana</i>	Wright's Beaksedge	W1		S3	G5	savannas	Carteret	Current
Bird	<i>Rynchops niger</i>	Black Skimmer	SC		S2B,S3N	G5	sand flats on maritime islands [breeding evidence only]	Carteret	Current
Vascular Plant	<i>Sabal palmetto</i>	Cabbage Palm	T		S1	G5	maritime forests on the southeastern coast	Carteret	Historical
Vascular Plant	<i>Sabatia dodecandra</i>	Large Marsh Pink	W1		S3?	G5?	tidal, brackish, and freshwater marshes	Carteret	Current
Vascular Plant	<i>Sageretia minutiflora</i>	Small-flowered Buckthorn	T		S1	G4	shell middens	Carteret	Current
Vascular Plant	<i>Sagittaria chapmanii</i>	Chapman's Arrowhead	E		S1	G5T3?	limesink ponds	Carteret	Current
Vascular Plant	<i>Sagittaria engelmanniana</i>	Engelmann's Arrowhead	W1		S2	G5?	mostly blackwater streams and bogs	Carteret	Current
Natural Community	Salt Flat				S4	G5		Carteret	Current
Natural Community	Salt Marsh (Carolinian Subtype)				S4	G5		Carteret	Current
Natural Community	Salt Shrub (High Subtype)				S4?	G5		Carteret	Current
Natural Community	Salt Shrub (Low Subtype)				S4?	G4		Carteret	Current
Natural Community	Sand Flat				S2	G3		Carteret	Current

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TAXONOMIC_GROUP	SCIENTIFIC_NAME	COMMON_NAME	STATE_STATUS	FEDERAL_STATUS	STATE_RANK	GLOBAL_RANK	HABITAT_COMMENT	COUNTY	COUNTY_STATUS
Natural Community	Sandy Pine Savanna (Typic Subtype)				S1	G3		Carteret	Current
Butterfly	Satyrrium favonius ontario	Northern Oak Hairstreak	SR		S2S3	G4G5T4	oak-dominated woods, usually in dry sites; host plants -- oaks (<i>Quercus</i>)	Carteret	Current
Butterfly	Satyrrium kingi	King's Hairstreak	W2		S3S4	G3G4	forests, often moist, usually near sweetleaf; host plant -- sweetleaf (<i>Symplocos tinctoria</i>)	Carteret	Current
Moth	Schinia siren	Alluring Schinia Moth	W3		SU	GNR	open hardwood forests	Carteret	Current
Moth	Schinia sordidus	Sordid Flower Moth	W3		S2S3	G4?	savannas	Carteret	Current
Vascular Plant	Schizachyrium littorale	Seaside Little Bluestem	W1		S2S3	G5T5	coastal dunes and maritime dry grasslands	Carteret	Current
Vascular Plant	Schoenoplectus acutus	Hardstem Bulrush	SR-P		SH	G5	natural lakes	Carteret	Historical
Vascular Plant	Schoenoplectus americanus	Olney Threesquare	W7		S1?	G5	tidal marshes	Carteret	Current
Vascular Plant	Schoenoplectus etuberculatus	Canby's Bulrush	SR-P		S3	G3G4	blackwater creeks	Carteret	Current
Vascular Plant	Scirpus lineatus	Drooping Bulrush	T		S2	G4	low rich woods over marl	Carteret	Current
Vascular Plant	Scirpus pendulus	Rufous Bulrush	SR-O		S1	G5	wet places over mafic rocks	Carteret	Current
Vascular Plant	Scleria baldwinii	Baldwin's Nutrush	T		S2	G4	wet savannas	Carteret	Current
Vascular Plant	Scleria georgiana	Georgia Nutrush	W1		S3	G4	savannas	Carteret	Current
Vascular Plant	Scleria verticillata	Savanna Nutrush	SR-P		S2	G5	calcareous wet savannas, maritime wet grasslands influenced by shell deposits	Carteret	Current
Vascular Plant	Sesuvium portulacastrum	Shoreline Sea-purslane	SR-P		S1	G5	seabeaches	Carteret	Current
Bird	Setophaga virens waynei	Black-throated Green Warbler - Coastal Plain population	SR	FSC	S2S3B	G5T3	nonriverine wetland forests, especially where white cedar or cypress are mixed with hardwoods [breeding evidence only]	Carteret	Current
Vascular Plant	Sideroxylon lycioides	Buckthorn Bumelia	W1		S2S3	G5	maritime forests, bluffs or forests over calcareous or mafic rocks	Carteret	Historical
Reptile	Sistrurus miliarius miliarius	Carolina Pigmy Rattlesnake	SC		S3	G5T4T5	pine flatwoods, pine/oak sandhills, other pine/oak forests	Carteret	Current
Natural Community	Small Depression Drawdown Meadow (Typic Subtype)				S2S3	G2?		Carteret	Current
Natural Community	Small Depression Pocosin (Typic Subtype)				S2S3	G2G3		Carteret	Current
Natural Community	Small Depression Pond (Open Lily Pond Subtype)				S3	G3?		Carteret	Current
Natural Community	Small Depression Pond (Typic Marsh Subtype)				S3	G3?		Carteret	Current
Natural Community	Small Depression Shrub Border				S3	G3?		Carteret	Current
Vascular Plant	Solanum pseudogracile	Graceful Nightshade	SR-T		S1	GNR	dunes	Carteret	Current
Vascular Plant	Solidago gracillima	Graceful Goldenrod	W1		S3	G4?	savannas, boggy sites, peaty places	Carteret	Current
Vascular Plant	Solidago leavenworthii	Leavenworth's Goldenrod	T		S1	G3G4	savannas, pocosin borders, clay-based Carolina bays, peaty seeps	Carteret	Historical
Vascular Plant	Solidago pulchra	Carolina Goldenrod	W1		S3	G3	savannas	Carteret	Current
Vascular Plant	Solidago verna	Spring-flowering Goldenrod	SR-O		S3	G3	mesic to moist pinelands, pocosin ecotones	Carteret	Current
Vascular Plant	Spergularia salina	Saltmarsh Sandspurrey	W7		S1S2	G5	salt marshes and tidal flats	Carteret	Current
Moss	Sphagnum cribrosum	Florida Peatmoss	W7		S2?	G3G5T3	in blackwater streams; ditches	Carteret	Historical

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TAXONOMIC_GROUP	SCIENTIFIC_NAME	COMMON_NAME	STATE_STATUS	FEDERAL_STATUS	STATE_RANK	GLOBAL_RANK	HABITAT_COMMENT	COUNTY	COUNTY_STATUS
Moss	<i>Sphagnum fitzgeraldii</i>	Fitzgerald's Peatmoss	W1		S2S3	G3	pocosins and savannas	Carteret	Current
Moss	<i>Sphagnum henryense</i>	Peatmoss	W1		S2S3	G4?	bogs	Carteret	Historical
Moth	<i>Spilosoma dubia</i>	Dubious Tiger Moth	W3		S3?	G4	acidic wetlands	Carteret	Current
Vascular Plant	<i>Spiranthes eatonii</i>	Eaton's Ladies'-tresses	E		S2	G2G4	pine savannas and pine-oak sandhills	Carteret	Current
Vascular Plant	<i>Spiranthes laciniata</i>	Lace-lip Ladies'-tresses	SC-V		S2	G4G5	moist wet habitats	Carteret	Current
Vascular Plant	<i>Spiranthes longilabris</i>	Giant Spiral Orchid	E		S1	G3	savannas	Carteret	Current
Bird	<i>Spiza americana</i>	Dickcissel	SR		S2B,S2N	G5	fallow fields and pastures with tall forbs [breeding evidence for consistent year-to-year sites only]	Carteret	Current
Bird	<i>Sterna dougallii dougallii</i>	Roseate Tern	E	E	SHB	G4T3	sand flats on maritime islands [breeding evidence only]	Carteret	Historical
Bird	<i>Sterna forsteri</i>	Forster's Tern	W2		S3B,S5N	G5	salt or brackish marshes, nesting on wrack material or matted grasses [breeding sites only]	Carteret	Current
Bird	<i>Sterna hirundo</i>	Common Tern	SC		S2B	G5	sand flats on maritime islands [breeding evidence only]	Carteret	Current
Bird	<i>Sternula antillarum</i>	Least Tern	SC		S3B	G4	beaches, sand flats, open dunes, gravel rooftops [breeding evidence only]	Carteret	Current
Vascular Plant	<i>Stylisma pickeringii</i> var. <i>pickeringii</i>	Pickering's Dawnflower	SC-V	FSC	S3	G4T3	sandhills	Carteret	Current
Vascular Plant	<i>Syngonanthus flavidulus</i>	Yellow Hatpins	W1		S3	G5	ditches, pocosin ecotones, savannas	Carteret	Current
Lichen	<i>Teloschistes flavicans</i>	Sunrise Lichen	SR-P		S1	G4G5	on branches of trees and shrubs or on the ground in open areas, especially near the coast	Carteret	Current
Vascular Plant	<i>Thalictrum macrostylum</i>	Small-leaved Meadowrue	SR-T		S2	G3G4	bogs and wet woods	Carteret	Current
Butterfly	<i>Thorybes confusus</i>	Confused Cloudywing	W3		S3S4	G4	dry woodland borders and openings, brushy fields; host plants -- legumes	Carteret	Current
Moss	<i>Thuidium allenii</i>	Fernmoss	W7		S2?	G3G5	on soil, logs, exposed roots, and tree bases in swamps, often just above water line	Carteret	Historical
Natural Community	Tidal Freshwater Marsh (Cattail Subtype)				S3	G4G5		Carteret	Current
Natural Community	Tidal Freshwater Marsh (Giant Cordgrass Subtype)				S4	G4		Carteret	Current
Natural Community	Tidal Freshwater Marsh (Mixed Freshwater Subtype)				S1	G2?		Carteret	Current
Natural Community	Tidal Freshwater Marsh (Sawgrass Subtype)				S4	G4?		Carteret	Current
Natural Community	Tidal Swamp (Cypress--Gum Subtype)				S4	G3G4		Carteret	Current
Moss	<i>Tortella flavovirens</i>	Beach Moss	W7		S3	G4G5	dune swales	Carteret	Historical
Moss	<i>Tortula plinthobia</i>	A Chain-teeth Moss	SR-O		S1?	G4G5	calcareous rocks, concrete or mortared walls	Carteret	Current
Dragonfly or Damselfly	<i>Triacanthagyna trifida</i>	Phantom Darner	SR		S1?	G5	slow-flowing streams	Carteret	Historical
Mammal	<i>Trichechus manatus</i>	West Indian Manatee	E	E	S1N	G2	warm waters of estuaries and river mouths	Carteret	Current
Vascular Plant	<i>Trichostema</i> sp. 1	Dune Bluecurls	SR-L	FSC	S2	G2	dunes, openings in maritime forest and scrub	Carteret	Current

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TAXONOMIC_GROUP	SCIENTIFIC_NAME	COMMON_NAME	STATE_STATUS	FEDERAL_STATUS	STATE_RANK	GLOBAL_RANK	HABITAT_COMMENT	COUNTY	COUNTY_STATUS
Vascular Plant	<i>Tridens chapmanii</i>	Chapman's Redtop	T		S1S2	G5T3	dry pine and oak woods, sandy roadsides	Carteret	Historical
Vascular Plant	<i>Triphora trianthophoros</i> var. <i>trianthophoros</i>	Three Birds Orchid	W1		S2S3	G3G4T3T4	moist forests	Carteret	Current
Vascular Plant	<i>Typha domingensis</i>	Southern Cattail	W7		S2?	G4G5	brackish marshes	Carteret	Historical
Natural Community	Upper Beach (Southern Subtype)				S3	G3		Carteret	Current
Vascular Plant	<i>Utricularia olivacea</i>	Dwarf Bladderwort	T		S2	G4	limesink ponds, beaver ponds	Carteret	Current
Vascular Plant	<i>Verbena scabra</i>	Sandpaper Vervain	W7		S2?	G5	marsh edges, shell middens	Carteret	Historical
Reptile	<i>Virginia valeriae</i>	Smooth Earthsnake	W2		S3	G5	deciduous or mixed woods, usually in mesic soils	Carteret	Current
Animal Assemblage	Waterbird Colony				S3	GNR		Carteret	Current
Natural Community	Wet Loamy Pine Savanna				S1	G1		Carteret	Current
Natural Community	Wet Pine Flatwoods (Sand Myrtle Subtype)				S1	G2?		Carteret	Current
Natural Community	Wet Pine Flatwoods (Typic Subtype)				S3	G3		Carteret	Current
Natural Community	Xeric Sandhill Scrub (Coastal Fringe Subtype)				S2	G2?		Carteret	Current
Natural Community	Xeric Sandhill Scrub (Typic Subtype)				S3S4	G3?		Carteret	Current
Moth	<i>Xestia n. sp. nr. youngii</i>	Young's Dart Moth	W3		S3S4	G3G4	peatlands	Carteret	Current
Vascular Plant	<i>Xyris brevifolia</i>	Shortleaf Yellow-eyed-grass	W1		S3	G4G5	savannas, other low wet areas	Carteret	Current
Vascular Plant	<i>Xyris flabelliformis</i>	Savanna Yellow-eyed-grass	W1		S3	G4	savannas, streamhead pocosins	Carteret	Current
Vascular Plant	<i>Xyris floridana</i>	Florida Yellow-eyed-grass	T		S1	G5T4T5	savannas	Carteret	Current
Vascular Plant	<i>Xyris iridifolia</i>	Iris-leaf Yellow-eyed-grass	W7		S2	G4G5T4T5	limesink ponds, pineland pools, marshes	Carteret	Current
Vascular Plant	<i>Xyris smalliana</i>	Small's Yellow-eyed-grass	W1		S3	G5	pineland pools, limesink ponds, shores	Carteret	Current
Vascular Plant	<i>Xyris sp. 1</i>	Small-seeded Xyris	W2		S2	G2	wet savannas and pond margins	Carteret	Current
Vascular Plant	<i>Xyris stricta</i>	Pineland Yellow-eyed-grass	E		S1	G4	savannas	Carteret	Current
Vascular Plant	<i>Yucca aloifolia</i>	Aloe Yucca	W1		S2?	G5	dunes	Carteret	Current
Vascular Plant	<i>Yucca gloriosa</i>	Moundlily Yucca	SR-P		S2?	G4?	dunes	Carteret	Current
Moth	<i>Zale declarans</i>	Dixie Zale	SR		S2S3	G5	maritime forests with live oak	Carteret	Current
Vascular Plant	<i>Zizania aquatica</i> var. <i>aquatica</i>	Indian Wild Rice	W7		S2	G5T5	freshwater marshes	Carteret	Current

# Appendix H. Water & Sewer Infrastructure

# APPENDIX H. WATER AND SEWER INFRASTRUCTURE

