

Town of Emerald Isle, NC CAMA Land Use Plan Update

Plan for the Future

- Community Concerns and Aspirations, and
Land Use and Development Goals**
- Growth and Development Policies**
- Future Land Use Map**
- Tools for Managing Development**
- Implementation Action Plan**

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An Advanced Core Land Use Plan

The Preparation of this plan was financed in part through a grant provided by the North Carolina Coastal Management Program, through funds provided by the Coastal Zone Management Act of 1972, as amended, which is administered by the Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration.

Town of Emerald Isle CAMA Land Use Plan Update

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The plan makes reference to the following maps, which are available in the Department of Planning and Inspections.

- Estuarine Systems Map
- Coastal and Non-coastal Wetlands Map
- Natural Hazards Map
- Fragile Areas Map
- Building Permit Locations
- Flood Insurance Program Repetitive Losses
- Bogue Field – Accident Potential Areas
- Bogue Field – Noise Impact Areas
- BBWC Well Site Locations
- Highway 58 Corridor Proposed Pathway System
- Potential Pollution Sources – Bogue Sound
- Beach and Sound Access Locations
- Land Suitability Analysis

Town of Emerald Isle

CAMA Land Use Plan Update

Overview

Emerald Isle is a rapidly growing community in terms of both permanent and seasonal population. The town's peak population during the summer will grow to nearly 50,000 during the 20-year planning horizon. The CAMA Land Use Plan is one of the major tools that the community will use to manage this growth. The plan will help the Town ensure that new development and new land uses are compatible with its *small town atmosphere*; the plan will help the Town plan for essential services to meet the needs of its permanent and seasonal population; and it will help protect the essential coastal resources that define the community's life style.

The Emerald Isle CAMA Land Use Plan will serve both day-to-day and long-range functions. The day-to-day functions relate primarily to the Town's administration of its development management ordinances and the public's understanding and use of these ordinances for land use and development decisions regarding their own property. For the Board of Commissioners, the Plan will be a policy and decision guide on matters related to land use and land development in Emerald Isle. It will not have the status of a local ordinance or code, but the policies and the future land use map will guide decisions on applicable ordinances and policies such as the zoning ordinance and subdivision regulations. The plan will also be used in the Board of Commissioners' decision-making on the Town's capital and annual operating budget.

The town's residents and property owners played a major role in the development of the plan, its policies, and the future land use map. Opportunities for citizens to participate in the planning process included a community workshop, two community open houses, and a community opinion survey. As a result, the plan addresses the community's land use and development concerns and closely mirrors the aspirations of residents

and property owners. Details on the results of the citizen participation process are shown in Appendix 2.

The plan includes four components:

1. Description of *community concerns and aspirations* and a *community planning vision*. Discussion of this plan component begins on page 4. It includes a sketch of the growth and development-related issues in Emerald that emerged from the extensive citizen participation process. It also includes the planning vision that provides a valuable foundation for land use and development goals and the policies for growth and development.
2. *Analysis of existing and emerging trends*. This component of the plan, which begins on page 11, provides the technical basis for policy development. It includes trends and forecasts of population, housing and the local economy; it details the opportunities and limitations presented by the town's natural systems; the discussion and analysis addresses existing land use and recent trends; and it provides information on important community facilities. An analysis of land suitability synthesizes this information.
3. *Land use goals and policies*. The town's land use and development goals are found on page 66. These goals evolved directly from the town's planning vision and they provide a road map for working toward the planning. The land use and development policies, which begin on page 67, provide specific on guidance on decisions, programs, and projects to help the town achieve its goals.
4. *Tools for managing development*. This component begins on page 94. It outlines Emerald Isle's strategy and action plan for implementing its land use policies, including modifications to its current land use and development ordinances.

The plan includes an extensive analysis to determine the consistency of the land use policies and the future land use map with the goals of the coastal area management act and the CRC's land use management

topics. The analysis concludes that there is a high level of consistency. Appendix 1 provides detailed information on this analysis.

Advanced Core Plan. This Land Use Plan is classified as an *Advanced Core Plan*. As such, it exceeds the core CAMA planning requirements in two major areas. First, the Town recognizes the important relationship between storm water management and water quality. The plan includes a significantly higher degree of analysis of existing storm water and drainage issues and problems. This analysis is summarized in Section 4.4, page 51 and it identified 4 types of stormwater issues related to pollution of the sound:

- (1) Closed storm drain systems in older developments that transmit runoff to the sound without significant removal of sediments and pollutants;
- (2) Drainage systems installed along Emerald Drive, mainly in the eastern areas, that carry runoff directly to the sound;
- (3) Street ends, often badly eroded, that carry runoff from Emerald Drive to the sound; and
- (4) Runoff from lawns that often carries sediment and nutrients into adjacent surface waters.

The Town will address these issues within the context of a Stormwater Management Program.

The plan also focuses on the hazards associated with land use and development on Bogue Banks. In addition to the typical natural hazard issues, the plan contains extensive analysis of the hazards and nuisances associated with aircraft operations and Bogue Field and the policies include a strategy to address them.

Finally, the Town is involved in major beach nourishment and inlet realignment projects that are designed to mitigate hazards associated with storms and to protect fragile natural and recreational areas impacted by the migration of Bogue Inlet. The plan includes specific policies to address these concerns.

An Advanced Core Land Use Plan

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PART 1. Community Concerns and Aspirations—Planning Vision

Description of growth-related conditions that influence Emerald Isle's land use and development patterns, description of key planning issues, and development of a vision statement for the land use plan involved a 3-step process.

- Step 1:** The Land Use Plan Steering Committee (LUPSC), established by the Board of Commissioners' Citizen Participation Plan, developed a preliminary list of conditions and concerns.
- Step 2:** At a community workshop attended by more than 100 people, community residents and property owners identified and set priorities on concerns and issues that they felt were important. (The comments and priorities from this workshop are summarized in the appendix.)
- Step 3:** The LUPSC used the public input and comments to develop a *vision statement* that describes what Emerald Isle should look like in the future.

A survey of Emerald Isle residents and property owners, conducted in the fall of 2003, provided additional information for the Steering Committee, the Planning Board, and the Board of Commissioners for developing land use policies. (A copy of the results of this survey is provided in the appendix.)

The concerns and issues identified by the community are shown below. The *Vision Statement* that guides the development of the Land Use Plan and its policies is at the beginning of the plan.

Concerns and Issues

The table below is a summary of the growth-related conditions and the issues that will be addressed by the Land Use Plan. The summary includes growth-related conditions that influence land use, development, and water quality and topics that are associated with public access, land use compatibility, infrastructure carrying capacity, natural hazard areas,

water quality, and other local areas of concern. (These categories reflect the *Management Topics* in the CAMA Land Use Planning Guidelines.)

Growth-Related Conditions and Concerns	Important Land Use and Development Topics (Topics that will influence the types of policies that will be included in the plan.)
<ul style="list-style-type: none"> • The types of business development that occur within Carteret County and the region. • Population growth within Emerald Isle and the increasing percentage of permanent residents in the peak population. • Pace of development of transportation facilities that impact the safety of residents and visitors, the ease of access to Emerald Isle’s region and to the island, and the means and ease with which people can get around on the island. • Availability of adequate, quality drinking water to meet increased demand that results from growth. • Managing the risks to life and property that result from beach erosion and the effects of storms and the impacts of Bogue Inlet migration. • Reliance on “on-site” and private “package” treatment systems for residential and commercial waste water treatment. • Influence of the development 	<ul style="list-style-type: none"> • Providing adequate access to beaches and public trust waters for a range of activities • Protecting and enhancing native vegetation • Protecting dune systems • Providing better traffic flow and safety to accommodate the growing permanent and seasonal population • Providing pedestrian walkways and bike paths • Managing storm water to address flooding and water quality issues • Maintaining the beach and sound front • Addressing migration of Bogue Inlet • Protecting ocean and Bogue Sound water quality; improve water quality in Archer Creek • Keeping Emerald Isle a family-oriented beach • Keeping noise and light levels low • Protecting the small-town atmosphere; protecting the beauty and vision of the original community layout

- pattern, street layout, and lot sizes included in the original development plan for Emerald Isle.
- Impact of the noise and over-flight safety associated with operations at Bogue Field.
 - Significance of the Bogue Sound Outstanding Resource Waters and related development and land use protection.
- Continuing overall low density development and limit building heights
 - Guiding redevelopment in manner that is consistent with overall land use and development objectives
 - Concentrating commercial development within existing commercial concentrations and corridors
 - Providing street trees
 - Supporting the current development management program (zoning, vegetation protection, dune protection, and so on)
 - Protecting the rights of property owners
 - Providing community services (police, EMS, recreation, solid waste, drainage) to support future development

Our Vision— Emerald Isle in the Future

The Vision Statement is a direct result of Emerald Isle's citizen participation process. It is a *word picture* that describes what the residents and property owners want the town to be in the future. The vision statement is a consensus of those involved in the planning process. It provides a basis for setting priorities, defining goals, and developing policies to achieve them.

The following is Emerald Isle's Planning Vision:

*People recognize Emerald Isle as a great place to live and visit.
The community is renowned for its natural beauty and the quality*

of its development. Emerald Isle's natural beauty is characterized by the Atlantic Ocean, which is bordered by beautiful broad, accessible beaches, and the clean waters and islands in Bogue Sound. The community maintains a balance between development and the environment. The maritime forests and other native vegetation are protected and enhanced. Native vegetation and magnificent dunes not buildings dominate the skyline. The Cameron Langston Bridge across Bogue Sound, with dramatic vistas of the sound islands in their natural state, and the Emerald Drive Gateway, bordered by preserved maritime forest, announce arrival at an exceptional place.

Emerald Isle retains its small town character and charm and protects its family atmosphere. Use of the land continues with the patterns set by the beauty and vision of the original development. There are few tall buildings. The town has traditional streets, some with trees and sidewalks. The town keeps lighting levels low to support the small town, family atmosphere. The addition of sidewalks and bike paths that connect to important destinations gives residents and visitors a choice of how they get around. New uses in older developed areas are compatible with surrounding land uses and natural features.

Businesses are located in a compact "downtown" area and along the Emerald Drive business corridor, where frontage roads reduce the impacts of traffic. The older downtown area remains vibrant with new and renovated buildings, flourishing businesses, and safe and easy access from surrounding residential areas.

Native trees and shrubs dominate Emerald Isle's landscape. 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 the Emerald Isle's tourism economy, but they have also developed to serve the growing number of year-round residents. The community is careful to avoid over commercialization in order to maintain our image as a family beach. Mostly local people own businesses.

Low density is still the predominant quality of the town's overall development design. Most buildings are no more than 2 or 3 stories; most residences are single-family. Still, there is a variety of housing types to meet the needs of a range of people - permanent residents, visitors, seasonal residents, retirees, and working families.

Retirement and tourism are the center of the local economy. The retail and service sectors are the major employers, and they are diversified to meet the needs of the town's growing permanent population and its visitors. Emerald Isle is home to many families that work in the military, manufacturing, public utilities, and medical services, but these residents travel off the island to their jobs.

The town's ocean beach, Bogue Inlet, the soundfront, and the Outstanding Resource Waters of Bogue Sound provide high quality recreational and aesthetic values to residents and visitors 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 community 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 are plentiful in the sound and they taste great.

Active and passive recreation opportunities are plentiful - for children, teens, adults, and seniors. The Recreation Center is the focal point for the recreation program. Community and neighborhood parks, as well as facilities provided by private developments, provide for an abundance of outdoor activities. Residents and visitors have easy access to the beaches and sound.

Excellent community services support the quality of life offered by Emerald Isle to both year-round and seasonal residents. The Bogue Banks Water Corporation provides quality drinking water to all properties. The Town helps ensure that all private wastewater treatment systems protect the environment and public health. The Town provides high quality solid waste management services that 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. It works with its citizens, property owners, and businesses, and with other local governments in the region to implement programs and to address issues that affect the 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.

PART 2. Analysis of Existing and Emerging Conditions

Part 2 of the Land Use Plan is designed to provide an information base to support the formulation of the policies and the plan to guide future growth and development in Emerald Isle.

This part of the plan includes the following major sections:

- Section I Population, Housing, and Economy.
- Section II Natural Systems Analysis.
- Section III Analysis of Existing Land Use and Development
- Section IV Analysis of Community Facilities
- Section V Land Suitability Analysis
- Section VI Review of Current Plan and Policies

The following is a list of maps that support the analysis in this section. These maps are available in the Emerald Isle Planning and Inspections Department.

- Building Permit Locations
- Estuarine Systems Map
- Coastal and Non-coastal Wetlands Map
- Natural Hazards Map
- Flood Insurance Program Repetitive Losses
- Bogue Field – Accident Potential Areas
- Bogue Field – Noise Impact Areas
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Section I Population, Housing, and Economy

1.1 Population

1.1.1 Permanent population trends and current estimate

Emerald Isle's permanent population nearly tripled between the 1980 and 1990, and between 1990 and 2000, it increased by more than 40%. According to the Census, the town's population was 2,434 in 1990 and 3,488 in 2000. The town also increased its share of the total Carteret County population over the period from 1980 to 2000. In 1980, Emerald Isle's share of county population was 2.1%; in 2000 it was 5.9%.

Table 1 sets out details on the town's 20-year population growth trends and provides comparisons with the growth of the county and other incorporated areas.

Table 1
Emerald Isle CAMA Land Use Plan
Permanent Population Trends

Year	1980	1990	2000
Emerald Isle	865	2,434	3,488
Other incorporated areas	12,653	17,457	21,431
Unincorporated areas	27,574	32,662	34,464
Carteret County	41,092	52,553	59,383
Emerald Isle % total county population	2.1%	4.6%	5.9%

Source: US Bureau of the Census

Table 2 shows annual estimates of Emerald Isle's population for 2001 to 2003. The 2001 estimate is the most recent available from the NC State

Data Center. The estimates for 2002 and 2003 are based on adjustments for housing units added and average family size. These estimates show a more modest growth rate early in the decade of the 1990s.

Table 2
Emerald Isle CAMA Land Use Plan
Current Population Estimate

	2001	2002	2002 Rounded	2003	2003 Rounded
Emerald Isle	3,538	3,743	3,700	3,793	3,800
Carteret County	59,601	60,364	60,400	61,126	61,100
	5.9%	6.2%	NA	6.2%	NA

Sources: 2001 Estimate, NC State Data Center; 2002 and 2003 Estimates by WBF based on permanent housing units added (please see Table 2.9, Building Permit Trends)

1.1.2 Seasonal population

Seasonal population, which includes persons who temporarily reside in Emerald Isle during the “tourist” season, is an important consideration for the land use plan. These temporary residents occupy motel/hotel rooms, campsites, boat slips, and private rental units.

As detailed in Table 3, the seasonal population estimate for 2003 is 35,900. This estimate is based on the number of units in each accommodation type and the typical number of persons that occupies each type. “Persons per unit” in the table is based on a survey conducted by East Carolina University in the late 1980s that was updated by recent information from Emerald Isle rental agents.

Table 3
Emerald Isle CAMA Land Use Plan
Seasonal Population - 2003¹

Type of Accommodation	Number of Units	Persons per Unit	Seasonal Population	Rounded
Motel/hotel	174	4.00	696	700

Type of Accommodation	Number of Units	Persons per Unit	Seasonal Population	Rounded
(1996)				
Campsites (1996)	881	3.00	2,643	2,600
Private rental units (Year 2002)	4,440	7.50	33,300	33,300
Total	5,505	NA	35,943	35,900

¹ Estimate date is January 1, 2003.

Sources: 2000 Census; Emerald Isle 1996 CAMA Land Use Plan; Building Permit Trends (please see Table 9); WBF.

1.1.3 Peak population

Table 4 combines permanent and seasonal population estimates to show Emerald Isle's peak seasonal population. For 2003, the estimate is 39,600.

Table 4
Emerald Isle CAMA Land Use Plan
Peak Population - 2003¹

Estimated permanent population	3,700
Estimated seasonal population	35,900
Estimated peak population	39,600

Source: WBF

1.1.4 Key population characteristics – age, income, and labor force participation

Table 5 shows the change in the town's age distribution between 1990 and 2000 and provides a comparison with Carteret County. The fundamental trend demonstrated by this table is the increase in the percentage of persons in the 65 years+ age group. This change in the older age group supports anecdotal information regarding the community's retirement trend.

Mirroring Carteret County, there were fairly significant declines in the percentage of population in the working age groups from 18 years to 44 years. Some may attribute this change to the location of job opportunities within the county.

Table 5
Emerald Isle CAMA Land Use Plan
Age Characteristics – 1990, 2000

Age group	Emerald Isle		Carteret County	
	1990	2000	1990	2000
<5 yrs	5.3%	3.6%	6.4%	4.9%
5-17	8.9%	9.5%	16.1%	15.8%
18-24	8.3%	4.8%	9.5%	6.4%
25-34	17.0%	12.2%	16.6%	11.5%
35-44	15.8%	11.8%	15.0%	15.7%
45-54	12.5%	16.7%	11.2%	15.7%
55-64	18.0%	12.7%	10.9%	12.7%
65>	14.2%	22.4%	14.3%	13.7%

Sources: 1996 Emerald Isle LUP; State Data Center

Household and individual incomes in Emerald Isle are significantly higher than Carteret County as a whole. The 2000 Census reports the median household income for Carteret County as \$38,344 and the median income for Emerald Isle as \$53,274 (nearly 40% higher than the county median). The income differences are also evident in the poverty statistics for the county and the town. In 2000, 10.7% of the county population had incomes below the poverty level compared to 2.7% in Emerald Isle.

As expected, the percentage of individuals who receive retirement income is higher in Emerald Isle than for the county. In 2000, 36.4% of Emerald Isle residents received retirement income compared to 26.7% in the county.

Table 6 shows key income figures for the town and the county.

Table 6
Emerald Isle CAMA Land Use Plan
Income Characteristics, 2000

	Emerald Isle	Carteret County
Median household income	\$53,274	\$38,344
Percent individuals with incomes below poverty level	2.7%	10.7%
Percent individuals with retirement income	36.4%	26.7%

Source: US Bureau of the Census

1.2. Housing characteristics and trends¹

Between 1990 and 2000, Emerald Isle added 1,573 housing units, bringing the 2000 housing unit total to 6,147. For perspective, this increase of more than 3.0 housing units completed per week for the 10-year period.

Table 7 details the types of housing units identified in the 2000 Census. This table points to a significant shift in the types of units in the town's housing stock during the 90s. In 1990, the Census classified approximately 45% of the total housing units as single-family structures. By 2000, nearly 60% of the housing units were single-family structures, totaling 3,505 units. The number of units in structures with 5 or more units increased by 155 units to 709 units and the percentage of this type of unit declined slightly to 11.5%. Approximately 160 mobile homes were added during the 10-year period.

¹ Total housing units and units in structures with 5 or more units adjusted to reflect count conducted by Town of Emerald Isle. January 2003 total units in structures with 5 or more units is 745. Total of 36 permits issued since 2000; therefore, total in 2000 is 709, an increase of 130 units over Census count. Total units adjusted to reflect this count. All 130 units assumed to be seasonal.

Table 7
Emerald Isle CAMA Land Use Plan
Types of Housing Units, 2000

	Number	Percent
Total housing units	6,147	100%
UNITS IN STRUCTURE		
Single-family, detached	3,505	57.0%
Single-family, attached	184	3.0%
2 units	511	8.3%
3 or 4 units	185	3.0%
5 or more units	709	11.5%
Mobile homes	994	16.2%
Boat, RV, van, etc.	10	0.2%
other	49	0.8%

Source: US Bureau of the Census

Table 8 provides the Census's estimates of permanent (year-round) and seasonal housing units, vacant units, and owner/renter units. Between 1990 and 2000, the Census estimate of the percentage of permanent housing units declined sharply. The 1990 Census showed 2,156 permanent housing units, or 48% of total units. The 2000 Census estimated 1,877 permanent units, or 31.2% of the total. This decline in permanent housing units does not appear to be consistent with other population trends.²

Most of the permanent units are owner units (80.2%). This percentage of owner units is comparable to other coastal communities.

1.2.1 Current housing stock estimates

Table 8 also shows estimates of Emerald Isle's current housing stock. Based on the number of permits issued, the current estimate of total units is 6,300. Of this total, approximately 2000 (32%) are permanent and 4,300 (68%) are seasonal.

² Possibly, the 1990 Census overstated the number of permanent units. According to the 1996 CAMA land use plan, the 1990 Census counted 1,030 vacant year-round housing units (48%). Since a vacancy rate in the neighborhood of 10% is more typical, some of the units counted as year-round were seasonal.

1.2.2 Average household size

The number of persons per household remained relatively constant between the 1990 and 2000 Census. In 1990, there were 2.14 persons per household; in 2000, the average declined slightly to 2.12.

Table 8
Emerald Isle CAMA Land Use Plan
Characteristics of Housing Stock, 2000
Estimate of Current Housing Stock, Permanent and Seasonal Units

	2000	Percent of Total	Est. Units Added, 2000-2002 ^a	Estimated Housing Stock, 12/30/02	Rounded
Total housing units	6,147	NA	248	6,395	6,390
Permanent housing units	1,877	31.2%	77	1,954	1,950
Occupied	1,644	87.6%	--	1,720	1,720
Vacant	214	11.4%	--	--	--
Owner units	1,318	80.2%	--	1,379	1,380
Renter units	326	19.8%	--	341	340
Seasonal units	4,270	68.8%	171	4,441	4,440
Other units	19	0.3%	NA	NA	--

^a Please see building permit data, Table 9.

Sources: 2000 Census; Emerald Isle Building Permits; WBF

1.2.3 Building permit trends

Table 9 provides details on the building permits issued by Emerald Isle for 2000 through 2002, which covers the period from the 2000 Census to the present. During this period, the town issued 248 residential building permits. Nearly 81% of these permits were for single-family structures. The

Building Permit Map shows the location for the permits in 2001-02. This map shows recent residential development concentrated in the area west of Emerald Drive that is served by Coast Guard Road.

Table 9
Emerald Isle CAMA Land Use Plan
Building Permits, 2000-2002

Type	2000		2001		2002		Total Units, 2000 -02
	Buildings	Units	Buildings	Units	Buildings	Units	
Single family	68	68	68	68	79	79	215
2-Family	2	4	3	6	6	12	22
3,4-Family	0	0	0	0	0	0	0
5-Family or greater	1	6	2	12	3	18	36
Totals	71	78	73	86	88	109	273

Source: Town of Emerald Isle

1.3. Emerald Isle's economy

Table 10 provides an employment summary of town residents by major industry grouping.³ Between 1990 and 2000, the number of employed residents increased from 1,153 to 1,525. Due to changes in reporting categories, a direct comparison of employment by industry between 1990 and 2000 is not feasible. However in 2000, the following were the dominant employers:

<u>Industry</u>	<u>Employment Share</u>
Education, health, and social services	20%
Retail trade	13%
Finance, insurance, real estate, rental and leasing	13%
Construction	11%

While retail trade remained a dominant employer in 2000, the number of Emerald Isle residents employed in retail trade declined sharply from 254 (23%) in 1990 to 200 (13%) in 2000. Significant increases in employment in

³ These data reflect employment of Emerald Isle residents regardless of where they work. They do not apply to employment within the town.

construction and finance, insurance, real estate, rental and leasing accompanied the decrease in retail trade.

In 2000, the Census reports that nearly 54% of Emerald Isle workers commuted outside of Carteret County to work.

Up-to-date information on the businesses and employment that comprise Emerald Isle’s local economy are not available. However, Table 10, which is based on data from the 1997 Economic Census, gives a profile of the number and types of businesses that operate in the town. Due to the time of year that the Economic Census is conducted, the number of businesses may not reflect seasonal operation and may be understated.

Table 10
Emerald Isle CAMA Land Use Plan
Profile of Local Establishments

Establishment type	Number of Establishments
Retail	
Building materials, garden equipment and supplies	1
Food and beverage stores	2
Health and personal care stores	1
Gasoline stations	3
Clothing stores	6
Sporting goods, hobby, book, and music stores	5
General and miscellaneous retailers	7
Non-store retailers	2
Wholesale trade	6
Real estate and rental and leasing services	21

Source: US Bureau of the Census, 1997 Economic Census

1.4. Population projections

1.4.1 Permanent population

Accurate long-range population forecasts for small areas like Emerald Isle are difficult. The most reliable approach is to base the forecasts on more accurate projections for larger areas. Therefore, Emerald Isle's permanent population projection is based on an estimate of the Town's share of Carteret County's population projection. Projections for the county are available from the NC State Data Center.

Table 11 shows the forecast of Emerald Isle's population in 5-year increments to 2023. The forecast assumes that the Town's share of the county population will continue to increase slightly, from 6% to slightly more than 7.5%, through 20-year period.

Table 11
Emerald Isle CAMA Land Use Plan
Permanent Population Forecasts
2003-2023

Projection Year	Projected Carteret County Population	Projected Emerald Isle Population	Estimated Households Added
2008	63,493	3,900	94
2013	65,729	4,400	235
2018	67,646	4,800	190
2023	69,104	5,300	235
2003-2023 Population Growth	--	1,600	750

Source: WBFI

1.4.2 Seasonal and peak population

Once a forecast of permanent population is developed, the ratio of seasonal population to permanent population is a convenient tool for forecasting seasonal population. In 2003, the seasonal-permanent population is approximately 10:1. Most members of the LUP Steering Committee and Town officials interviewed, expect the ratio to decrease over the 20-year planning period, i.e. the permanent population share of

total population will increase. Based on this assumption, the following ratios are used to forecast seasonal population:

2003-08	9.5:1
2009-13	9:1
2014-18	8.5:1
2019-23	8:1

Using these ratios, estimates of seasonal and “peak population” are shown in Table 12.

Table 12
Emerald Isle CAMA Land Use Plan
Seasonal and “Peak” Population Forecasts, 2003-2023

Year	Permanent Population	Seasonal Population	Peak Population (rounded)
2008	3,900	37,050	41,000
2013	4,400	39,600	44,000
2018	4,800	40,800	46,000
2023	5,300	42,400	48,000
2003-2023	1,600	6,300	7,900

Source: WBF

According to current seasonal occupancy trends, 90% of the future seasonal population will occupy vacation homes and the average occupancy will be 7.5 persons per unit. This indicates that the seasonal population increase will result in approximately 750 additional housing units.

Emerald Isle currently has an estimated 1,000 vacant building lots and 177 acres of vacant land parcels zoned for residential use. These vacant lots and parcels will yield approximately 1,400 housing units, which is just enough to accommodate the projected population. Because the amount of land suited for development is limited in Emerald Isle, providing housing and other support development to serve even the low population projection may require consideration of redeveloping some areas in addition to the traditional development patterns for the town. (Vacant land is discussed in detail in Section 3.4.)

Section II Natural Systems Analysis

This section provides a description of Emerald Isle's natural environment and its suitability or limitations for development. It includes 3 parts:

- 1) An inventory and description of natural features;
- 2) An analysis of environmental capability that includes a composite map showing the overlap of natural features; and
- 3) A description of environmental conditions related to water quality, natural hazards, and other significant features.

A series of maps are an integral part of this analysis and they are available for inspection at the Town's Planning and Development Department. These maps include:

Estuarine Systems Map
Coastal and Non-coastal Wetlands Map
Natural Hazards Map
Fragile Areas Map
Environmental Composite Map

2.1 Areas of Environmental Concern

Areas of Environmental Concern (AECs) are one of the essential elements of the coastal resource management program and local land use plans. An AEC is an area of natural importance that is designated by the Coastal Resources Commission. An AEC may be easily destroyed by erosion or flooding; or it may have environmental, social, economic or aesthetic values that make it valuable to our state.

The Coastal Resources Commission designates areas as AECs to protect them from uncontrolled development, which may cause irreversible damage to property, public health or the environment, thereby diminishing their value to the entire state. The CRC has set up four categories of AECs:

1. The Estuarine and Ocean System
2. The Ocean Hazard System

3. Public Water Supplies
4. Natural and Cultural Resource Areas

Emerald Isle has two classes of AECs: the Estuarine and Ocean System and the Ocean Hazard System. The following sections describe and analyze these AECs.

2.1.1 The Estuarine and Ocean System AEC

The estuarine and ocean system AEC is a broad category that includes the town's sounds and marshes, and the surrounding shorelines. The system includes the following components: estuarine waters and shorelines; coastal wetlands; and public trust areas. The sections below describe each of these components.

2.1.1.1 Estuarine Waters and Shorelines

Emerald Isle's *estuarine waters* include Bogue Sound, and its tributary Archer Creek, the Intracoastal Waterway, the White Oak River and Bogue Inlet, and the Atlantic Ocean. These estuaries are among the most productive natural systems in the State. Locally, they support the region's valuable commercial and sport fisheries, which include estuary dependent species such as menhaden, flounder, shrimp, crab, and oysters. In addition, the estuary defines the beauty of Emerald Isle and makes it a great place to live and visit.

High productive values in the estuarine waters are the result of three essential processes: (1) circulation patterns caused by tidal energy, fresh water 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*.

The *dry land edge* (estuarine shoreline) that forms the transition between the estuary and the upland area is also an important component of the system. The following section describes the **estuarine shoreline AEC**.

2.1.1.1(a) Estuarine Shoreline

The estuarine shoreline, which is a band of contiguous upland area, is an element of the estuary system due to its close association with the adjacent estuarine waters. For non-ORW waters, the estuarine shoreline extends landward 75 feet from mean or normal high water. For ORW waters, the distance is 575 feet. The estuarine shoreline category does not include ocean shorelines. Development activities and land uses within the estuarine shoreline area have an impact on the conservation of the values of the estuary.

The ORW estuarine shoreline applies to virtually all non-ocean shorelines in Emerald Isle. (The significance of the ORW classification is discussed below.) The length of the estuarine shoreline is approximately 14 miles. CAMA development permits control development within the shoreline area. Generally, development in this area may not weaken natural barriers to erosion, must have limited hard surfaces, and must take steps to prevent pollution of the estuary by sedimentation and runoff. In addition, the ORW shoreline has other requirements and limits: no more than 25% "built upon area" is permitted on land within the ORW estuarine shoreline; a buffer of 30 feet is required; and no stormwater collection system is allowed.

Use Classifications and Water Quality— The *use classification* of all sound and inlet waters adjacent to the town is SA, which means their highest and best use is *shellfish harvesting*. Standards for Class SA waters establish the level of water quality that the Sound and Inlet must have to support shellfishing. In addition, the Bogue Sound has a supplemental class of ORW – outstanding resource water and the White Oak River at Bogue Inlet has a supplemental class of HQW – high quality water, respectively.

Significance of ORW designation. The State reserves this stringent designation for waters with outstanding fishery, recreation, scenic, wildlife, and/or ecological and scientific values. Environmental Management Commission (EMC) rules permit no new discharges or expansions within ORWs and require a minimum 30-foot vegetated buffer along the shoreline.

CAMA development rules also apply within 575 feet of mean or normal high water of ORW waters, and development in this area must follow stricter rules.

Significance of HQW designation. Waters with this rating are excellent based on state chemical and biological sampling. The intent of the designation is to prevent degradation of water quality below current levels from both point and non-point sources. EMC rules require new or expanded wastewater facilities to address oxygen-consuming wastes, total suspended solids, disinfection, emergency requirements, and toxic substances. In addition, development activities that require erosion and sedimentation control plans and that drain to or are located within 1-mile of a HQW must control runoff using either a low density or high-density option. The low-density option requires a 30-foot vegetated buffer and the high-density option requires structural stormwater controls.

Water Quality in Bogue Sound and the White Oak River— According to the White Oak River *Basinwide Water Quality Plan* water quality in Bogue Sound and Bogue Inlet is good. The Division of Water Quality (DWQ) rates them as *fully supporting* for aquatic life and secondary recreation and primary recreation; *partially supporting* for fish consumption; and either *partially supporting* or *non-supporting* for shellfish harvesting.

Shellfish harvesting is closed in two areas adjacent to Emerald Isle. Piney Creek (Archer Creek), an 18-acre tributary of Bogue Sound, is closed. A 2.2-acre area adjacent to Island Harbor Marina is also closed.

2.1.1.1(b) Coastal Wetlands

Coastal wetlands are defined as “any salt marsh or other marsh subject to regular or occasional flooding by tides, including wind tides...” This definition does not include flooding by tides associated with hurricanes or tropical storms.

Coastal wetlands perform a variety of valuable functions:

- Provide decayed plant material and nutrients that support complex food chains in the estuaries.
- Support 90% of the state's commercial fish and shellfish catch.
- Provide high quality habitat for waterfowl and wildlife.

- Act as barriers against flood damage and control erosion between the estuaries and the uplands.
- Act as a trap for nutrients, sediment, and pollutants and help to maintain estuarine water quality.

Emerald Isle has three significant concentrations of coastal wetlands: (1) approximately 300 acres located north of Coast Guard Rd. between Channel Dr. and the bridge; (2) approximately 70 acres located along Archer Creek and Bogue Sound between Maritime Forest Dr. and Old Cove Rd.; and (3) approximately 20 acres along Bogue Sound in the area of Cedar Tree Lane.

In the management of coastal wetlands the highest priority is given to conservation; second priority is given to water-dependent uses that require access and that cannot be located elsewhere.

2.1.1.1(c) Public Trust Areas

These areas are the waters and submerged lands that the public has a right to use for activities such as boating, swimming, or fishing. The AEC often overlaps with estuarine waters. Public trust areas include the following types of lands and waters:

- 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);
- All water in artificially created water bodies, canals, and so on 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.

Under this definition, public trust waters include all of the town's estuarine waters and their tributaries, including the canal that runs between Forest Hills Mobile Home Park and Archers Creek, and the Atlantic Ocean.

The key management principle for public trust waters is to maintain their accessibility to the public. Development, structures, and land uses that interfere with the public's right of access and use are not consistent with this principle.

2.1.1.2 The Ocean Hazard System AEC

Ocean Hazard AECs are areas where potential erosion and the adverse impacts of sand, wind, and water make uncontrolled or incompatible development unreasonably hazardous to life or property. The Ocean Hazard category in Emerald Isle includes three types of land: (1) the ocean erodible area; (2) high hazard flood area; and (3) inlet hazard area. Development and land use in these areas require a major CAMA development permit to prevent exposing residents and property to unreasonable risks. The sections below describe each of the land types.

All components of the Ocean Hazard AEC are shown or labeled on the Natural Hazards Map. This map is for planning purposes only. On-site investigation is required for any development or construction.

2.1.1.2(a) Ocean Erodeable Area

This includes the area along the beach strand where there is a significant risk of excessive beach erosion and significant shoreline fluctuation due to natural processes such as hurricanes and tropical storms. The seaward boundary of this area is the mean low water mark. The landward boundary is described as follows:

- (1.) 120 feet or 60 times the established erosion rate, whichever is greater, landward of the first line of stable natural vegetation – this is called the *recession line*; and
- (2.) a distance landward from the recession line described in (1.) above to the recession line that would be generated by a storm having a 1-percent chance of being equaled or exceeded in any given year.

The ocean erodible area is defined on a lot-by-lot basis due to the significant variation in the location of the first line of natural vegetation. Within the *ocean erodible area* there are general and specific use

standards that apply to any development activity. These standards are applied through the CAMA permitting process.⁴

2.1.1.2(b) High Hazard Flood Area

This AEC covers lands subject to flooding, high waves and heavy water currents during a major storm. These are the lands identified as coastal flood with velocity hazard, or "V zones," on flood insurance rate Federal Insurance Administration maps. "V zones" are determined by an engineering analysis of expected flood levels during a storm, expected wave and current patterns, and the existing topography of the land. The high hazard flood AEC often overlaps with the ocean erodible and inlet hazard AECs.

Development in these areas is subject to the same setbacks as described for the ocean erodible area. However, the setback is doubled for any multifamily residential or non-residential structure of more than 5,000 square feet.

2.1.1.2(c) Inlet Hazard Area

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) must comply with the setbacks for the ocean hazard area; (2) the 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.

2.2 Soils

According to information from the Carteret County Soils Survey, the soils in Emerald Isle limit the type and density of development that is possible without using an alternative to the septic tank. The survey indicates that all of the soils have limitations for septic tanks. There are four different limitations:

⁴ 15A NCAC 07H.0306, .G0308

- 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 done by investigation on a lot-by-lot basis.

2.3 Natural and Manmade Hazards

2.3.1 Flood Hazard Areas

The 100-year flood plain is the accepted benchmark for defining flood hazard. In Emerald Isle, the 100-year flood plain is mapped in two classifications: the **AE** zones are areas where there is a 1% chance of flooding in any year and the **VE** zones where there is a 1% chance of flooding with wave action hazard.

The VE zone extends from the area adjacent to Bogue Inlet in a narrow strip to the Indian Beach municipal boundary. The AE zone extends along Bogue Sound and from Archers Creek in a narrow band up the center of the town. The following table shows the status of current development in these zones:

Zone	<u>Parcels that Intersect Zone</u>	<u>Intersecting Parcels with Structures</u>
AE	1,500	1,015
VE	705	605

2.3.2 Storm Surge

As expected, extensive areas of Emerald Isle are vulnerable to the storm surge hazards associated with hurricane level storms. Depending on the level or severity of the storm, as much as 90% of the town's land area may be impacted. The following describes the approximate areas that may be impacted by various storm levels.

- **Category 1 to 2** storms – beachfront and sound front areas; Archers Creek and the low lying areas extending west; and the inter-dune areas on the west end.
- **Category 3** storms – the areas described above plus an extensive area at the west end and in the marina area.
- **Category 4 to 5** storms – except for the high dune line that forms the spine of the island and a few other isolated high spots, virtually the entire town is impacted.

The following table shows the approximate extent of the impact of the various storm levels:

Storm level	<u>Approximate Cumulative Percent of Land Area Impacted</u>
1 to 2	40
3	67
4 to 5	90

The Natural Hazards Map illustrates the town's flood hazard areas and the projected extent of storm surge.

2.3.3 Bogue Field Hazards

There are potential accident hazard and elevated noise areas associated with operations at Bogue Field on the Carteret County mainland. These areas are discussed in Section III, Existing Land Use.

2.4 Non-coastal Wetlands

The U. S. 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.”⁵ 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 wetland plants help hold soils in place and prevent sedimentation and nutrient transport.
- **Water quality**—wetland 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.

⁵ US Army Corps of Engineers, *Wetlands Delineation Manual*, Technical Report Y-87-1, Vicksburg, MS, 1987.

Wet pine savannas within 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.⁶

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 table shows these wetland types:

Wetland Type

Freshwater marsh

Maritime forest (May be intact, cut-over, or cleared)

Pine flats (May be intact, cut-over, or cleared)

The Town's non-coastal wetlands are shown on the Coastal and Non-coastal Wetlands Map.

2.5 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: Natural Heritage Areas as identified by the Natural Heritage Program in the NC Department of Environment and Natural Resources; protected lands that are controlled by the State or subject to easements or covenants that limit development; and maritime forests that are intact. The inventory of maritime forests uses satellite images from the 1990s and may not accurately depict what is “on the ground.”

Areas that are included in this inventory are shown on the Fragile Areas Map.

⁶ NC Department of Environment, Health, and Natural Resources, *A Field Guide to North Carolina Wetlands*, Report No. 94-93, June 1994, pp. 17-32.

2.6 Composite Environmental Map

The Composite Environmental Map (following) shows the extent and overlap of the environmental features described in this section. Using the limitations and opportunities that the features have for development as a guide, the map shows the location of the following three categories of land:

Class I – land containing only minimal hazards and limitations that may be addressed by commonly accepted land planning and development practices;

Class II – land containing development hazards and limitations that may be addressed by methods such as restrictions on types of land uses; special site planning; or the provision of public services; and

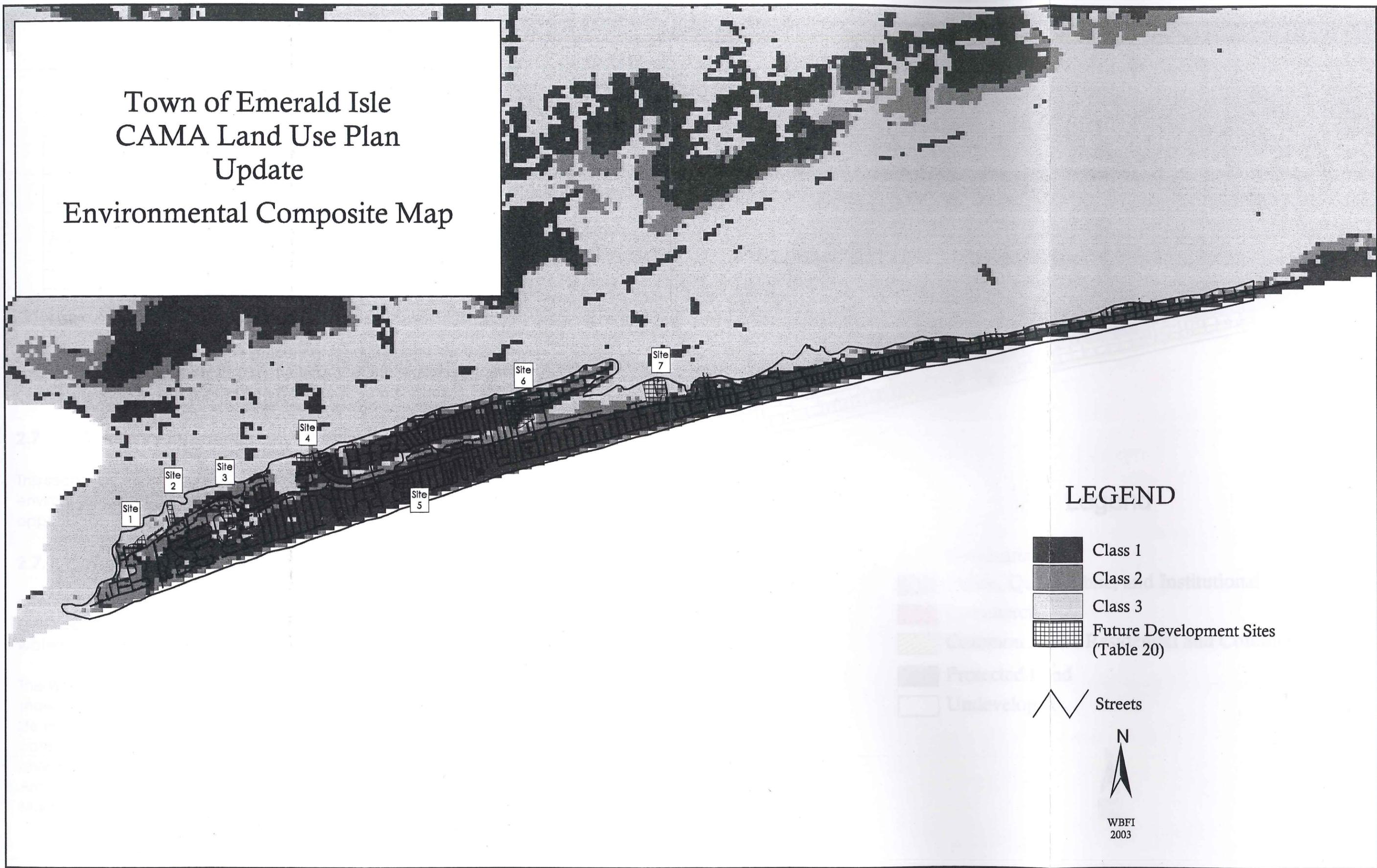
Class III – land containing serious hazards for development or lands where the impact of development may cause serious damage to the functions of natural systems.

Table 13 shows the features that are included in each class.

Table 13
Emerald Isle CAMA Land Use Plan
Composite Natural Features Table

	Cls. I	Cls. II	Cls. III
Wetlands			
Coastal wetlands			✓
Non-coastal, exceptional or substantial significance			✓
Non-coastal, beneficial		✓	
Estuarine waters			✓
Estuarine shoreline		✓	
Soil limitations (septic)			
Slight to moderate	✓		
Severe			✓
Hazards			
In 100-year flood (includes ocean hazard AECs)		✓	

Town of Emerald Isle
CAMA Land Use Plan
Update
Environmental Composite Map



LEGEND

- Class 1
- Class 2
- Class 3
- Future Development Sites (Table 20)

Streets



WBFI
2003

	Cls. I	Cls. II	Cls. III
In storm surge area		✓	
Water quality			
ORW watersheds		✓	
HQW watersheds		✓	
Wellhead protection areas		✓	
Water supply protection watersheds		✓	
Fragile areas and resources			
Natural heritage areas		✓	
Maritime forests		✓	
Protected open space			✓

Source: WBF

An approximate estimate of the amount of land in each class is Class I 60%, Class II 30%, and Class III 10%. The format of the digital Environmental Composite Map makes it difficult to make precise estimates.

2.7 Summary Environmental Conditions

This section provides a summary assessment of the three priority environmental conditions or features and describes their limitations or opportunities for development.

2.7.1 Water quality

Overall water quality in waters adjacent to Emerald Isle is generally good. DWQ classifies Bogue Sound as an Outstanding Resource Waters and the waters of Bogue Inlet as High Quality Waters.

The White Oak River *Basinwide Water Quality Plan*, prepared by DWQ 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

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

The DEHSSS survey identifies five pollution sources in Emerald Isle. These sources are located near Ring Street, along Coast Guard Rd., along Emerald Drive, and the area south of Piney Creek. A recent stormwater survey, discussed in Section IV, identified several additional sources.

DWQ recommendations for water quality. According to the basinwide plan, fecal coliform is the major cause for impairment of the SA waters adjacent to Emerald Isle. The plan includes several recommendations for restoring impaired shellfish harvesting areas that are applicable for local government. These recommendations include the following:

- Develop local strategies at the watershed level to address sources of fecal coliform bacteria. Involve local businesses, landowners, and residents in developing the strategy.
- Emphasize the value of shellfish harvesting areas to the local economy and the coastal lifestyle.
- Manage the volume and quality of stormwater runoff.
- Implement guidelines for new development – methods to reduce impervious surfaces, reduce or eliminate hardened stormwater conveyances, vegetated buffers.

These measures can be part of the Town's development plan. However, implementing effective strategies to address stormwater issues in developed areas is a challenge.

2.7.2 Natural hazards

2.7.2.1 Beach erosion

The estimated historical erosion rate for most of the Emerald Isle ocean beach is 2 feet per year. Immediately after Hurricane Floyd in 1999, the Town's ocean beach experienced significant recession. After the storm, the Town estimated that 156 single-family structures, 36 condominiums, and 17 mobile home lots were endangered and that 90% of the ocean front structures received significant damage. The Town has scraped the beach periodically since the storm to reduce the risk to existing structures.

A nourishment project is underway. It will occur in two phases. The "Eastern Phase", which encompasses the first 5.8 miles of beachfront heading west from the Indian Beach/Emerald Isle town boundary was completed in 2003. The "Western Phase" is associated with the realignment of Bogue Inlet (please see description below) and the use of the shoal material dredged during this realignment project for restoration of approximately 3.7 miles of shoreline extending from the terminus of the eastern phase westward towards Bogue Inlet. Permitting for this phase of the project should be complete in summer-fall 2004 and construction completed in spring 2005. The Town will then be undertaking a variety of monitoring projects as part of the realignment/nourishment activities and these monitoring projects will last for the next several years.

The Town expects that sand placed on the beach will be effective for 10 years. Plans anticipate approval of a Federal project at the end of that period.

2.7.2.2 Bogue Inlet migration⁷

Between 1996 and 2001, the main channel of Bogue Inlet encroached on the western shoreline of Emerald Isle to the point that one house has been abandoned and several more are threatened. Property owners installed sandbags for emergency protection. In addition, the erosion destroyed nesting habitat for endangered birds and impacted a valuable recreation asset for the Town's residents and visitors. Estimates place the inlet migration rate at 60 to 90 ft./year to the east.

The Town's study of alternatives recommends a westward realignment of the inlet by cutting through the inlet shoals. A small portion of the dredged materials will be used to build a dike near the Pointe, and the bulk of the materials will nourish the Town's western ocean beach (Reach 1). An Environmental Impact Statement (EIS) for this project is complete and permitting should be complete in summer-fall 2004, on the same schedule as the western phase beach renourishment.

The NC Division of Coastal Management will require additional beach access facilities as a condition of the project permit.

⁷ Coastal Science and Engineering, *Analysis of Alternatives for Bogue Inlet Channel Realignment and Beach Nourishment Along Western Emerald Isle*, 2001.

Like the western beach nourishment project, the Town will be undertaking a variety of monitoring projects that will last for the next several years.

2.7.2.3 Repetitive losses

There are 86 repetitive loss locations identified by the Town. These locations are shown on the Repetitive Loss Map. Seventy-seven of these locations are west of Hwy. 58, predominantly along Channel Drive and Ocean Drive.

The Town has initiated measures that are designed to reduce the number and magnitude of existing repetitive losses and to prevent additional repetitive losses in the future. These measures include the following:

1. Property owner information – each year provide property owners within repetitive loss areas with information about measures that they can take to reduce or eliminate losses;
2. Development management – the Town has established overlay districts in its zoning ordinance that incorporate the CAMA general and specific standards for AECs as development requirements.

2.7.3 Natural resources

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 developed 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."⁸ 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 DCM, there are 51 acres of intact maritime forest in Emerald Isle.

However, inappropriate development can destroy or compromise the characteristics that lend to their stability. Simple planning practices for

⁸ NC Division of Coastal Management, *Protecting Maritime Forests through Planning and Design*, 1990.

large-scale development and landscaping techniques at the building site level can preserve some of the key characteristics of maritime forests. These include the following:

- Protect the understory vegetation;
- Leave oceanfront edge intact;
- Clear only as much vegetation as necessary for buildings and roads;
- Site buildings below dunes and tree canopy lines;
- Focus on leaving contiguous areas intact;
- Use septic systems that require minimal clearing;
- Plant native trees and shrubs to encourage preservation and restoration of the canopy;
- Take steps to reduce salt spray on windward edge;
- Preserve individual trees by pruning, watering, and fertilizing.⁹

⁹ *Ibid.*

Section III Analysis of Existing Land Use and Development

The 1996 CAMA Land Use Plan provides the following history of land subdivision and development in Emerald Isle:

"Land subdivision within Emerald Isle has an interesting history. Prior to the town's 1957 incorporation, property owners agreed to divide the town into fifty-four (54) 1,100-foot wide blocks, each of which extended from the ocean to the sound. The blocks were numbered consecutively from east to west. The first development was residential and it occurred in Block 1 on the eastern end of the town. This was the first development because the town's sole vehicular access was by the Morehead City-Atlantic Beach Bridge and Salterpath Road (IM.L. 58). Residential development then spread slowly westward.

'In 1962, ferry service was established to the western end of Bogue Banks in Block 38. This was a major stimulant to growth, and development proceeded at a much faster pace. Residential development continued to be the primary land use. A heavy influx of mobile homes occurred, especially near the ferry terminal. In the mid to late '60s, commercial development began to occur along U.S. 58 in the Block Drive to Holly Street area.

'In 1971, the B. Cameron Langston Bridge was opened and easy vehicular access to both the east and west ends of the town was established. By the early 1970s, residential development had spread to the western end of the town at Bogue Inlet in Blocks 52 and 53.

'The original "block" division of Emerald Isle continues to have a strong influence on the appearance of the Emerald Isle landscape. Many subdivisions, commercial, and multi-family developments have their east and west boundaries defined by the original block boundaries. Many local people refer to the locations of landmarks or developments by the number of the block in which they are located. In most cases, the town's remaining vacant land is easily defined by block boundaries.

'Since the early 1970s, development in Emerald Isle has rapidly accelerated. However the types of land use have remained limited to commercial, single-family residential, multi-family residential, and mobile home parks or campgrounds. The overall appearance of the town is one of low-density development, except for the commercial areas, with a quiet, single-family residential atmosphere.

It should be noted that Emerald Isle does not have any extraterritorial planning jurisdiction.”

3.1 Developed Land

Table 14 provides a summary of existing land use in six major categories: residential, commercial, institutional, common area and open space, and undeveloped. The undeveloped category is further divided into small parcels (1 acre or smaller) and larger parcels (greater than 1 acre). The residential category includes all residential uses – single-family, duplexes, multifamily, and manufactured housing. Commercial includes the typical business uses plus other types of businesses such as campgrounds, amusement facilities, and the marina. The institutional uses include Town facilities, Coast Guard facilities, well sites, and other similar uses.

Undeveloped parcels of less than 1 acre in size are considered to be lots that have been subdivided and not yet built on. There are an estimated 1,095 lots in parcels in this category. These lots may have features that restrict construction, such as lack of a septic tank permit; owners may be holding them for future construction; or the lots may be combined with adjacent properties. It is difficult to forecast the number of structures that will be built on these lots during the planning period.

There are 101 parcels of greater than 1 acre in size. These parcels, which total 279 acres, are potentially available for new development.

**Table 14
Emerald Isle CAMA Land Use Plan
Existing Land Use**

Land Use	Acre Estimate	Percent
Residential	1,462	43.0
Commercial	147	4.3
Institutional	79	2.3
Common area and open space	237	7.0
Rights-of-Way	430	12.6
Protected areas ^(a)	390	11.5
Undeveloped	651	19.1
In parcels 1.0 ac or smaller	372	10.9

(1,095 parcels)		
In parcels greater than 1.0 ac (101 parcels)	279	8.2
Approximate total acres	3,400	100.0

Sources: WBFi; Carteret County Land Records; Existing Land Use Map

^(a) Protected areas consist of tracts owned by the State. A portion of these tracts may lie outside of the Emerald Isle corporate limits.

Residential uses. Residential uses account for approximately 43% of the land area of Emerald Isle. Most of the town’s residential development is for single-family homes. As noted in Section I, Population, Housing, and Economy, nearly 60% of all housing units are single-family residences. In addition, more than 80% of the residential building permits issued since 2000 are in the single-family category.

The 1996 Land Use Plan noted the trend toward lower residential density. This trend continues. A sampling of lots developed in the last five years in the newer areas west of the Pebble Beach development indicates that the average density is less than 2 dwellings per acre (122 homes on 77 acres).

Commercial uses. Commercial land uses account for 147 acres, or 4.3%, of the total area of the town. Commercial uses are concentrated in two areas along Emerald Drive (NC 58). The first area is located near the Langston Bridge. On the north side of Emerald Drive, it includes a campground and related uses. On the south side, it includes a mixture of community-oriented businesses and seasonal businesses. None of these commercial uses “front” on Emerald Drive. They use Crew Drive on the north and Reed Drive on the south for access, or they use Emerald Plantation Rd., which intersects Emerald Drive.

The second area is located between Emerald Drive and the Ocean Beach at Bogue Inlet Drive. This area contains a mixture of community and seasonal uses. It includes the Post Office and is reasonably close to the Town Hall and recreation complex. Some members of the Land Use Plan Steering Committee refer to this area as Emerald Isle’s downtown.

The parallel access roads do not serve the “downtown” commercial area, which results in some access problems and traffic congestion and safety issues.

The Existing Land Use Map (following) illustrates Emerald Isle's existing land uses and development patterns. This map is based on Carteret County land records supplemented by “windshield surveys.” The analysis in Table 14 utilizes this map.

3.2 Land Use Conflicts – Bogue Field Impacts

Existing land uses and vacant parcels from the Langston Bridge to the Piney Creek area are subject to “accident potential” and “noise impacts” associated with aircraft operations at the Marine Corps Alternate Landing Field (MCALF) Bogue Field. This airport is located across Bogue Sound from Emerald Isle.

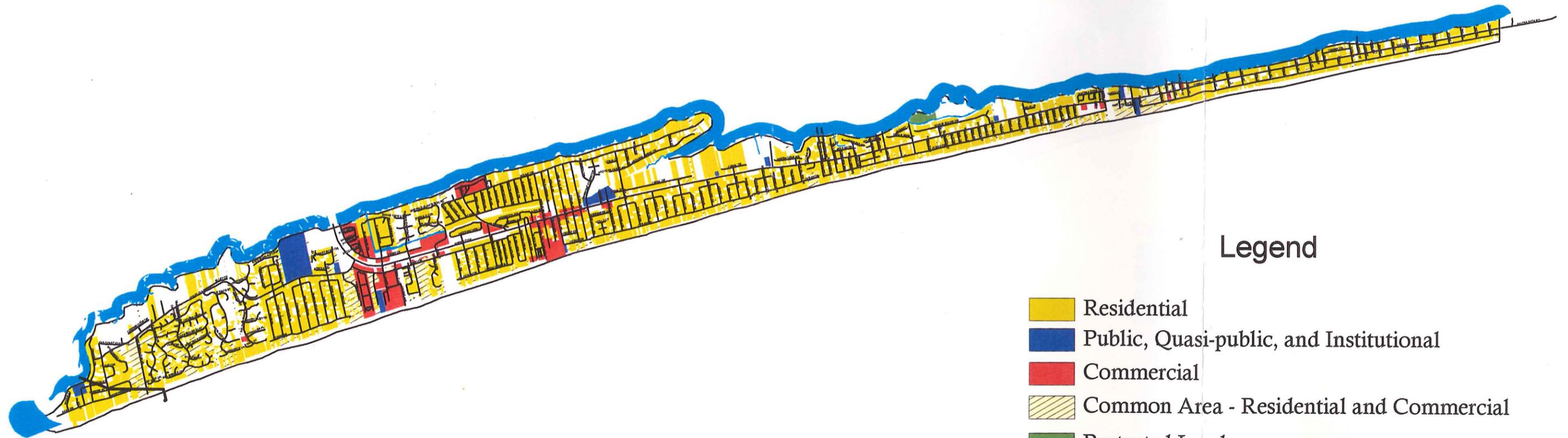
Accident potential. According to a recent study by the Eastern Carolina Council (ECC)¹⁰, Accident Potential Zones (APZ) are “areas immediately beyond the ends of runways and along primary flight paths and are (potentially) subject to more aircraft accidents than other areas.” There are two designations 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 areas within the Accident Potential Zones are shown on the Bogue Field – Accident Potential Area Map.

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.

Table 15 shows the parcels that the APZs 1 and 2 impact. There are 54 parcels with a total of 30 acres that intersect the APZ 1. Nineteen of these parcels with a total of 7.2 acres are undeveloped. Most residential and commercial land uses that are typical in Emerald Isle are discouraged in the APZ 1.

¹⁰ Region P Council of Governments, *Eastern Carolina Joint Land Use Study*, November 2002.

Town of Emerald Isle
CAMA Land Use Plan Update
Existing Land Use Map



Legend

-  Residential
-  Public, Quasi-public, and Institutional
-  Commercial
-  Common Area - Residential and Commercial
-  Protected Land
-  Undeveloped

N

WBFI
2004

There are 1,424 parcels with a total of 982 acres that intersect the APZ 2. Two hundred thirty-six (236) of these parcels with a total of 142 acres are undeveloped. Low-density residential and lower intensity commercial and business uses are compatible with safety concerns of the APZ 2.

Noise impacts. The ECC study also addresses the noise impacts associated with Bogue Field operations. The study includes noise contours to identify areas that have noise impacts related to aircraft operations. The contours are based on “Day-Night Average Sound Level” (Ldn). This is a measure of the average 24-hour sound levels.

Two of these contours affect Emerald Isle: 60-64 Lnd and the 65-74 Lnd. The 60-64 (N-1) contour is described as having “some” noise impacts and the 65-74 (N-2) contour is described as having “moderate” impacts. The areas within the Noise contours are shown on the Bogue Field – Noise Impact Areas Map.

Table 15 shows the parcels that the Noise contours affect. There are 1,740 parcels with a total of 1,102 acres that intersect the N-1 contour. Three hundred forty-five (345) of these parcels with a total of 230 acres are undeveloped. Most land uses permitted by the Emerald Isle zoning code are compatible in this area.

There are 777 parcels with a total of 739 acres that intersect the N-2 contour. One hundred fourteen (114) of these parcels with a total of 80 undeveloped. The only incompatible uses for the area in this contour are mobile home parks and amphitheatres.

**Table 15
Emerald Isle CAMA Land Use Plan
Bogue Field Impacts**

			Noise Impact Areas (Ldn)	
	APZ 1	APZ 2	≤64 (N-1)	65-74 (N-2)
Total parcels intersected	54	1,424	1,740	777
Total acres	30.0	982.0	1,102.0	739.4
Total undeveloped	19	236	345	114

parcels				
Total undeveloped acres	7.2	142.0	230.6	80.3

Sources: WBFI; mapping from Carteret County Land Records and East Carolina Council

Areas that extend from approximately the Langston Bridge east to Piney Creek Residential areas are regularly subject to over-flights by aircraft operating from Bogue Field. Potential for accidents and noise impacts is associated with these flights.

Study recommendations. The ECC study recommends that the Town of Emerald Isle adopt local land use policies that direct incompatible development and redevelopment away from the areas that have accident potential or high noise levels.

3.3 Development Trends

The Building Permit Map shows the location of building permits issued over the last two years (2001-02). These permit location shows that the bulk of the building and development activity is in the area located west of NC 58. Approximately 54% of the total permits were located in this area. The second most active area, with approximately 25% of the permits, is the central area from the Emerald Plantation/Daisy Wood developments east to E. Seaview Drive. The remainder of the permits are dispersed east to the town limits.

One hundred thirty-six (136) permits, or 90%, were for single-family residences. There were 7 duplex permits and 5 multifamily permits. Only 3 permits for commercial structures were issued during this period.

3.4 Existing Zoning

Table 16 shows the approximate area in each of the Town's zoning districts, an estimate of the number of vacant lots in the residential districts, and an estimate of the net area that is available for development.

Emerald Isle has more than 1,000 vacant lots. Estimating the number of these lots that will be built on during the planning period is difficult. Some of the lots may have environmental limitations; some of the lots may be combined with adjoining lots; and some may be held for future use.

The net area available for new residential development is limited. The net vacant area zoned for residences is 190 acres after subtracting vacant lots.

There are 60 acres of vacant property zoned for commercial uses. Since this land is already divided into smaller parcels, we can expect limited additional commercial land development.

Table 16
Emerald Isle CAMA Land Use Plan
Summary of Existing Zoning

Zoning District	Total zoned area (acres)	Total vacant area (acres)	Estimated number vacant lots (Spring 2002)	Area in vacant lots (acres)	Net area to develop (acres)
R2	1,360	220	517	180	40
RMF	60	-	10	-	-
RMH	990	360	545	220	140
Commercial (B1, B2, B3)	170	60	n.a.	60	-
Mobile homes (MH1)	250	20	26	10	10
Camp	30	-	-	-	-
Total zoned area	2,860	660	1,098	470	190
ROW not zoned	430				
Total area	3,300				

Source: WBF1

3.5 Residential Land Needs Projections

Table 17 shows the steps for estimating Emerald Isle's future residential land needs. Land needs projections are estimates of the amount of land that will be required to meet the housing needs of Emerald Isle's 20-year

population growth forecast. (Population forecasts are discussed in Section I.)

The estimates are based on the following estimates and assumptions:

1. The Town's permanent population will grow by 1,600 people by 2023.
2. The average size of permanent households in 2.12 persons.
3. The seasonal population will increase by 6,300 and 90% of the seasonal population will occupy houses, condos, etc.
4. The average number of seasonal visitors per unit is 7.5 persons.
5. Houses will be built on 75% of existing vacant lots.
6. The average density of new residential development will be 4 units per acre.

Table 17
Emerald Isle CAMA Land Use Plan
Estimate of Future Land Needs

Permanent population	
Population increase	1,600
Average household size	2.12
Additional housing units	755
Seasonal population	
Population increase	6,300
Percent in houses	90%
Average number persons per unit	7.5
Additional housing units	756
Total projected new housing units	1,511
Say	1,500
Construction on existing lots	
Number existing vacant lots	1000
Available for construction (75%)	750
Number of projected housing units on existing lots	750
Additional residential land needs	
Net new housing units	750

Average density (units per acre)	4.0
Additional land needed (acres)	187.5
Say	190

Source: WBFI

These estimates indicate that Emerald Isle's projected population growth between 2003 and 2023 will require slightly more land than is available under existing zoning. As the supply of vacant land shrinks the town can expect increased interest in redevelopment of existing residential areas and requests for additional density. These possibilities are addressed with appropriate policies.

Section IV Analysis of Community Facilities

Key community facilities, such as water supply and distribution and highways, are one of the foundations of the CAMA Land Use Plan. These facilities are designed to protect the health and safety of current and future residents, to support the local economy, and to protect important environmental resources. In addition, the availability of community facilities plays a major role in implementation of the land use plan.

The purpose of this section is to describe and evaluate the location, capacity, and adequacy of Emerald Isle's community facilities. Four categories of facilities are included:

- Public water supply and distribution
- Streets and highways
- Drainage
- Public access

4.1 Public water supply and distribution¹¹

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 non-profit water utility corporation that is owned by its customers and managed by a 7-member Board of Directors.

According to a July 2002 Engineering Report provided by BBWC, the water company serves a permanent population of 3,700 people and up to 60,000 people in the summer. BBWC has 5,600 accounts, of which 94 are large volume users. The company has the equivalent of 6,400 residential customers.

Eleven existing wells supply the system with water. These wells are capable of providing 2,700,000 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 customers¹². According to the forecast of

¹¹ BBWC, *Engineering Report*, July 2002.

¹² 2,700,000 gpd less 378,000 gpd for in-plant use = 2,322,000 gpd ÷ 318 gpd/customer = 7,300 customers

permanent and seasonal population in Section I, growth in Emerald Isle alone will necessitate system expansion in approximately 8 to 10 years. Table 18 shows BBWC's current wells and their capacities.

Table 18
Emerald Isle CAMA Land Use Plan
BBWC Well Capacity

<u>Well</u>	<u>Number/Capacity</u>	<u>Storage</u>
<u>(gallons/minute)</u>		<u>(gallons)</u>
1	150 gpm	500,000
2	300 gpm	500,000
3	300 gpm	300,000
4	200 gpm	500,000
5	No data	
6	300 gpm	100,000
7	400 gpm	1,000,000
8	550 gpm	
9	550 gpm	
10	550 gpm	400,000
11	550 gpm	
Total capacity	3,850 gpm	3,300,000

Source: Bogue Banks Water Corporation

BBWC has 7 water storage facilities that provide 64 hours of storage for the water system. The company is planning to add an additional elevated storage facility at Emerald Isle Woods. This facility will add storage capacity and alleviate low-pressure problems experienced along Coast Guard Rd. during high usage periods.

The locations of BBWC well sites are shown on Map 6.

4.2 Wastewater Treatment Facilities

Emerald Isle does not have a central sewer system. Individual septic tanks, shared septic tanks, or “package treatment” plants serve residences and businesses. There are currently 7 package treatment systems in Emerald Isle. These systems are shown in Table 19.

Table 19
Emerald Isle CAMA Land Use Plan
Private Package Wastewater Treatment Facilities

System	Permitted Flow (gallons/day)	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

Sources: NC Division of Water Quality; 1996 LUP

According to discussions with Division of Water Quality and Division of Environmental Health staff, all of these plants are currently meeting their permit requirements. However, problems with the plants come up from time-to-time requiring owners of some plants to upgrade or modify their systems. Nutrient build-up and saturated drain fields that will not accept wastewater are typical of the problems encountered by these systems. According to state staff, it may be difficult for homeowner associations to fund some of the required upgrades.

There are no current plans to develop a 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. However, the Town will examine options for requiring owners to establish financial plans to guarantee compliant operation of private systems. These guarantees can be part of the Town's development approval process.

Septic tanks. 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. However, development in the town's western end has encountered some problems. Issues in this area include (1) wetlands; (2) filling ponds to get required septic tank separation; and (3) interruption of natural drainage patterns.

4.3 Transportation

Emerald Isle is part of the proposed Crystal Coast Area/Morehead City and Vicinity Thoroughfare Plan. This plan, completed in late 2001, is in the approval process.

The 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 city limits at Indian Beach. The designated function of these *major thoroughfares* is to move traffic between Emerald Isle and other destinations and to move traffic safely and efficiently 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.

Minor thoroughfares. This street classification is not shown on the Thoroughfare Plan. However, there are several streets in the Town's system that 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 streets. This 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; 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.

4.3.1 Highway 58 Corridor Improvements

The Emerald Isle Board of Commissioners appointed a committee of interested citizens and stakeholders to the Highway 58 Corridor Committee in the spring of 2002. The Highway 58 Corridor extends from the Langston Bridge east to the town limits. The committee's objective was to develop a *vision* for improving safety and aesthetics in the corridor.

The committee initially focused on the business area of the corridor. This area extends from the Bridge, and including the Coast Guard Rd. Park, east to the Town Hall/Recreation Complex. In future phases, the Town will address the area east of Town Hall and the area west of the Park.

The committee's preliminary report includes a system of interconnected pathways and crosswalks that will encourage walking and biking from surrounding residential areas to the business corridor. The pathway system will also enhance the safety of walkers and bikers.

The pathway system includes 13 projects that total approximately 7.1 miles of improvements. The Highway 58 Corridor Proposed Pathway System Map shows the general location of these projects.

The committee also recommends plantings of native vegetation and appropriate street furnishings to improve the streetscape within the corridor.

4.4 Stormwater Systems

4.4.1 Systems

Emerald Isle developed a *Drainage Master Plan* in 1988. This plan identified the following six major drainage problem areas:

1. Coast Guard Rd-East area from Pinewood Place east to Reed Drive.
2. Coast Guard Rd-West area between Channel Drive and Wyndward Ct.
3. Downtown area south of Emerald Drive from Mangrove to the commercial area at Bogue Inlet Dr.
4. Sound Drive area from Bogue Inlet Drive to Live Oak.

5. Ocean Drive area from Cedar Tree Lane to William.
6. Eastern area south of Emerald Drive from 18th Street to 4th Street.

Since development of the master plan, the Town addressed three of the problem areas. The solutions include the following:

- Coast Guard Rd-East— ditching to collect stormwater and carry it to a retention pond north of Coast Guard Rd. From the retention pond, stormwater filters back to the Sound.
- Doe Drive Area and Lands End— installation of pump systems that allow pumping water to the beach in emergency situations.
- Ocean Drive area— installation of small infiltration devices that use collection basins, perforated pipe, and drainage fields to disperse water.

The Town is currently implementing a new, innovative system to address continuing problems in the Coast Guard Rd. area. This new system will involve pumps that either lower the ground water to allow for more infiltration of stormwater or pump away surface flood waters. The system will pump water to the stormwater site on Coast Guard Road that is owned by the Town, and is now known as Emerald Isle Woods. On the site, water will be initially cleaned by a natural forebay system and passed through a natural wetland and pond system for further retention and cleaning. The water will eventually infiltrate back to the Sound. The system has an emergency outfall that would only be opened when Shellfish Sanitation closes the Sound. This only happens during high rainfall or approaching storms.

4.4.2 Potential Problems Related to Stormwater

The Basinwide Plan¹³ and the most recent Shellfish Sanitation Report¹⁴ indicate that bacterial contamination from stormwater runoff is the major source of water pollution in this area of Bogue Sound. Therefore, management of stormwater is an essential part of any strategy to protect water quality in the waters surrounding Emerald Isle.

¹³ NC Division of Water Quality, Water Quality Section, *Whiteoak River Basinwide Water Quality Plan*, 2002.

¹⁴ NC Shellfish Sanitation Section, *Report of Sanitary Survey Area D-4*, April 1999.

A recent survey (spring 2003) identified more than 20 potential sources of stormwater pollution in Bogue Sound. The purpose of this survey was to identify, for purposes of policy development, the general types of stormwater problems that exist in the community; it was not intended to develop the type of comprehensive and detailed information required for a stormwater management plan.

Based on the survey, there are 4 types of stormwater issues related to pollution of the sound:

- (1) Closed storm drain systems in older developments that transmit runoff to the sound without significant removal of sediments and pollutants;
- (2) Drainage systems installed along Emerald Drive, mainly in the eastern areas, that carry runoff directly to the sound;
- (3) Street ends, often badly eroded, that carry runoff from Emerald Drive to the sound; and
- (4) Runoff from lawns that often carries sediment and nutrients into adjacent surface waters.

Each will require different policies and implementation strategies.

Piney Creek. The waters in Piney Creek (Archer's Creek) are the only area currently experiencing water quality problems. These waters are closed to shellfish harvesting. Three potential sources of stormwater pollution were identified in the Piney Creek sub-watershed. These include direct discharges from paved parking areas; small flumes that direct runoff from streets into the creek; and runoff from lawns bordering the creek. A strategy for Piney Creek will require capital projects to address direct discharges and a cooperative program that involves property owners to address runoff from lawns. The cooperative program should focus on education and possible projects, such as creation of buffers and reduction of chemicals and fertilizers.

The Potential Pollution Sources – Bogue Sound Map shows the general types and locations of the stormwater sources identified in the survey.

4.4.3 Stormwater Policies

Emerald Isle enforces a *stormwater management ordinance* that was updated in the spring of 2002. The following are the main objectives of this ordinance:

- Protect and restore chemical, physical and biological integrity of the waters of Bogue Sound, Archer's Creek and the Atlantic Ocean.
- Encourage the construction of drainage systems that aesthetically and functionally approximate natural systems.
- Encourage the protection of natural systems and the use of them in ways that do not impair their beneficial functioning.
- Minimize erosion and sedimentation.
- Prevent damage to wetlands.
- Prevent damage from flooding, while recognizing that natural fluctuations in water levels are beneficial.

To achieve these objectives, the ordinance sets *performance standards* and *design standards* for development, development activity, and redevelopment. These standards have the following key requirements:

1. After development or redevelopment, runoff approximates the rate of flow, volume and timing of runoff predevelopment conditions.
2. Surface water quality must be protected.
3. Erosion during and after development must be minimized.
4. Prevent increased flooding.
5. Minimize injury to flora and fauna.
6. Direct discharge into water bodies is prohibited.
7. Land disturbance activities must be as small as practicable.
8. Vegetated buffers are required along all watercourses.
9. Runoff from parking lots must be treated for pollutants before release.
10. Provide appropriate infiltration to control runoff of the first 2 inches of rainfall from all impervious surfaces on-site. (First two inches of rainfall must be retained on site and not released.)

Some developments are allowed to use off-site retention facilities to meet these standards.

All development must have a *stormwater management plan* to demonstrate compliance with the ordinance. For developments greater than 5,000 square feet, a professional engineer must seal the plan; less than 5,000 square feet does not require an engineer's seal. The plan must

be submitted before a preliminary subdivision plat is approved; before an existing drainage system is altered, rerouted, or deepened; or before a building permit is issued.

Development or redevelopment of single-family detached a residential structure that does not increase impervious surface by 1,000 square or more 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.

4.5 Public Access and Recreation Facilities

Emerald Isle has 70 locations that provide access to the beach and the sound. There are three types of access locations:

- (1) **local access** that provide primarily access for pedestrians and bikers from the immediate neighborhood;
- (2) **community parks**, such as Cedar Street, that have more facilities and serve a larger area; and
- (3) **regional access** 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. All have signs identifying them as public access and most have dune crossovers. Only the Regional Beach Accesses and the Cedar Street Park have formal off-street parking areas.

Access guidelines. For Emerald Isle, a reasonable guideline for local or neighborhood access points is to have a facility within ¼ mile of most residential properties. This guide places public access within walking distance and easy biking distance for most people.

For regional access, the guideline of one facility per 4 miles suggested by the CRC Access Guidelines is appropriate.

Areas served. The Beach and Sound Access Location Map shows the application of the ¼-mile standard for local public access. It shows the areas that lie within ¼ mile of the existing public accesses that, as a minimum, are signed and have crossovers.

- Standard is met in most of the areas east of Bogue Inlet Drive.
- Areas west of Bogue Inlet Drive to Yaupon are under-served; however, these areas have a high percentage of commercial uses.
- Lands End area is under-served by public access, but it has private facilities available.
- With exception of areas on east Sound Drive, waterfront access to Bogue Sound is below the standard.
- The eastern regional access plus development of the western regional access adequately address the CRC guideline of one regional access per 4 miles.
- A 16-car parking lot to provide access to the Point was added in June 2004.
- An 8-acre sound front access site near mile marker 18 at Chapel By The Sea was acquired in August 2004 and will be developed as a park in the future.

Development of the Emerald Isle Woods Park will add substantially to Bogue Sound access. This park will function more as a community-wide facility. (The plans for development of this park are described below.) However, there will still be areas on the sound that are under-served. A fully developed regional access on the sound may not be feasible or desirable. Sensitive natural systems and ORW restrictions may make a fully developed regional access on the difficult. However, a “mini-regional” access on the sound in this general location would significantly enhance access to Bogue Sound. A regional sound access in the vicinity of the Marina would be well located. (A joint effort between the Town and the Marina operators might be possible.)

4.5.1 Emerald Isle Woods Park

The Town is developing a new park on the stormwater site located on Coast Guard Road. The site’s primary function is stormwater management, but the development will provide high quality public access to Bogue Sound and passive recreation opportunities.

The immediate development plan includes the following elements:

- Gravel road construction of Amberjack Drive for full park access

- Construction of 1.10 miles of 8 foot wide nature trails throughout the site
- Public parking area.
- A gazebo with picnic amenities near the north end of the park.
- A small maintenance / restroom facility.
- A natural canoe / kayak launch area to Bogue Sound
- An 8 foot wide wooden walkway over the marsh for sound access
- Other park amenities, including picnic tables along trails, trashcans, etc.

Future development will include a floating dock for the canoe and kayak ramp, a gangway, an observation deck off the boardwalk, and two small picnic shelters.

Section V Land Suitability Analysis

Land suitability analysis is a process for determining the supply of land that is suited for development. It is based on consideration of several factors:

- Natural systems and their capabilities
- Existing development
- Compatibility with existing land uses
- Availability and capacity of existing community facilities
- Regulatory constraints – local, state, and federal

CAMA Land Use Plan guidelines require local governments to develop a land suitability map.

The Division of Coastal Management, in cooperation with the NC Center for Geographic Information and Analysis, provides a *geographic information system (GIS)*-based system for analyzing land suitability. This system incorporates the suitability factors shown in Table 20.

The Land Suitability Map shows the results of the land suitability analysis for Emerald Isle based on these factors. It includes three categories of land – least suited, suited, and most suited. The map also shows seven land parcels, greater than 5 acres, that are vacant and that may be available for development during the planning period. A description of the suitability of each site is shown Table 20. With the exception of Site #7, a significant area on each site is suited for development with proper precautions and site planning. Site #7 appears to have large areas of coastal wetlands that make this site best suited for very low intensity uses.

The location of these 7 sites is shown on the Environmental Composite Map.

Table 20
Emerald Isle CAMA Land Use Plan
Land Suitability Analysis

Potential Future Development Sites

Development Suitability Factors	Site 1 CG Rd	Site 2 CG Rd	Site 3 CG Rd	Site 4 Emerald Drive	Site 5 Reed/Heverly	Site 6 Seagull/Sound Dr	Site 7 Emerald Dr/Canal
Coastal and Non-coastal Wetlands	PARTIAL	EXTENSIVE	PARTIAL	PARTIAL	NO	PARTIAL	EXTENSIVE
Estuarine Waters (500 FT)	Y	Y	N	Y	N	Y	Y
Protected Lands	N	N	N	N	N	N	N
Storm Surge Areas	Y	Y	Y	Y	PARTIAL	Y	Y
Flood Zones	Y	Y	PARTIAL	PARTIAL	NO	Y	Y
ORW Watersheds	Y	Y	Y	Y	Y	Y	Y
Significant Natural Heritage Areas	N	N	N	N	N	N	N
NPDES Sites	N	N	N	Y	N	N	N
Developed Land	Y	Y	Y	Y	Y	Y	Y
Primary Roads	Y	Y	Y	Y	Y	Y	Y
Water Pipes (mapping not available)	Y	Y	Y	Y	Y	Y	Y
Sewer Pipes (N.A.)	N	N	N	N	N	N	N

Section VI Review of the Current Land Use Policies

6.1 CAMA Plan Policies

This review focuses on the consistency of Emerald Isle's existing land use and development ordinances and the 1996 CAMA Land Use Plan and the Town's success in implementing the actions described in the plan.

Careful review reveals two important benchmarks for evaluating the 1996 plan. These include the specific actions that were slated for implementation after adoption of the plan and the objectives that were set for the plan.

Table 21 shows the implementation actions included in the 1996 plan and describes the progress that the Town has made in these areas. Table 22 contains a description of progress the Town has made toward meeting the plan objectives.

Table 21
Emerald Isle CAMA Land Use Plan
1996 Action Items

Implementation Action	Progress
1. Implement recommendation contained in the Town of Emerald Isle 1989 Drainage Master Plan.	The Town entered into a contract with Moffatt and Nichol, Engineers that did an extensive study of stormwater issues on the western corridor of Emerald Isle in 2000-2001. As a result of their study a 40+ acre tract of land was purchased to aid in drainage in the event of major storms. That portion of the island has historically seen the worst drainage problems over longer periods of time post storm.
2. Implement the shoreline access site improvements as recommended in the 1988 Ocean and Sound Public Access Plan.	The Town's Parks and Recreation Department has implemented major elements of a comprehensive access plan. These include two regional access location and six local access points.

<p>3. Develop a detailed thoroughfare/transportation plan for the U.S. 58, Emerald Drive Corridor.</p>	<p>A comprehensive study of the current and future traffic problems at Coast Guard Road and Emerald Drive was completed two years ago.</p> <p>A specific plan has been completed with recommendations regarding this corridor, sidewalks, bike paths, greenways, and other related issues.</p>
<p>4. Develop and adopt an ordinance to restrict commercial use of floating structures and to restrict inhabitation to no more than 15 days.</p>	<p>The Town has not yet initiated development of these ordinances.</p>
<p>5. Develop an ordinance to regulate the establishment of mooring fields.</p>	
<p>6. Review all local land use regulation ordinances to determine if revisions should be undertaken to respond to specific water quality management problems.</p>	<p>The Town has undertaken amendments to its development ordinances over the past five years to address specific issues. However, an overall review of ordinances to respond to water quality management problems has not been undertaken.</p> <p>The Town believes that a comprehensive review and update of its land use and development policies should precede review of existing ordinances and development of new ordinances. As a result, the Town requested and received funding assistance to update its land use plan ahead of the normal schedule.</p>

Table 22
Emerald Isle CAMA Land Use Plan
Review of 1996 Objectives

Objective	Progress
1. Reduce traffic congestion.	<p>An additional traffic light has been added at Coast Guard Road and Hwy 58, as well as at Mangrove Drive and Hwy 58.</p> <p>Added a turn lane to enter and exit Mangrove on the North side and at Lee Street; and, the state has three-laned the commercial district to allow smoother traffic flow.</p>
2. Increase the amount of off-street parking.	To date, the Eastern and Western Regional accesses have been completed; however, they do not incorporate any parking for the commercial district.
3. Reduce impact of development on environmental resources – dunes, vegetation, and sound areas.	A year-long review of the Dunes and Vegetation Ordinance has just been completed to require that more vegetation be left on property prior to development and to encourage re-vegetation on developing and existing properties.
4. Increase number and improve shoreline access facilities.	The Western Regional Access west of the Islander Motor Inn has been added with considerable parking; as well as six beach access areas from Channel Drive to Bluewater Drive that will accommodate one to two vehicles for handicap facilities.
5. Reduce or eliminate drainage problems.	Due to the level of development in Emerald Isle, many of the drainage problems the town faces will have to be dealt with on a case-by-case basis. A comprehensive stormwater plan was adopted in 2001 to help alleviate some of the relevant issues that have long plagued Emerald Isle. Filling will not be as easily accommodated as in the past, which should help to preserve natural water flow, if practical, for a specific property.
6. Reduce septic tank problems by providing a central sewer system.	The Town considered implementation of a central sewer system. At the present time, the Town does not believe that such a system is required to meet its land use and development goals.

6.2 Review of Hazard Mitigation Policies

The Emerald Isle Board of Commissioners adopted a draft Hazard Mitigation Plan in January 2004. This plan has been forwarded to the NC Division of Emergency Management for review and comment, and additional changes may be made at a later date.

This plan is designed to focus the Town's resources on the hazards that pose the greatest risks to life and property – Hurricanes, Nor'easters, Flooding, and Tornadoes. The plan includes policies and implementation actions to address each of these threats.

The policies and actions related to hurricanes, Nor'easters, and flooding are the most relevant for the land use plan because they set guidelines and requirements for the types of uses and development patterns in hazard areas.

Table 23 summarizes the policies and actions included in the draft plan and describes their impacts on land uses.

Table 23
Emerald Isle CAMA Land Use Plan
Review of Hazard Mitigation Policies

Policy, Ordinance, or Implementation Action	Impact on Land Use
1. Subdivision regulations	<ul style="list-style-type: none"> • Land that is subject to flooding may not be platted for residential development unless the developer can show that the hazard can be corrected.
2. Zoning ordinance	<ul style="list-style-type: none"> • Includes specific development standards for residential and commercial structures built in an Inlet Hazard Area. • Manufactured housing and modular homes are not permitted in the High Hazard Flood Zone.
3. Flood damage prevention ordinance	<ul style="list-style-type: none"> • New and replacement water and sewer systems must be designed to minimize or eliminate infiltration of floodwater. • On-site waste disposal systems must be <u>located</u> and <u>constructed</u> to avoid impairment to them or contamination from them during flooding.

	<ul style="list-style-type: none"> • New residential construction or substantial improvements must have lowest habitable space 2 feet above flood elevation. • Lowest floor of non-residential commercial buildings must be elevated 2 feet above base flood elevation; in A zones, structures may be flood proofed. • In V zones buildings and structures must be setback 60 feet from mean high tide lines and the lowest supporting horizontal member shall be 2 feet above flood level. • No alteration of sand dunes that would increase potential flooding is allowed. • Public utilities and facilities in subdivisions must be located and constructed to minimize flood damage; all subdivisions must have adequate drainage to reduce exposure to flood hazards.
<p>4. Stormwater ordinance</p>	<ul style="list-style-type: none"> • All development and redevelopment projects must have stormwater management plan; residential projects with less than 5,000 square feet of impervious surface can have informal plan. • Direct discharge to water bodies not allowed; • Must keep disturbed area as small as practicable; • If possible, indigenous vegetation must be retained in undisturbed area; • Vegetated buffer strips to prevent erosion and trap sediment must be created; • Encourages use of wetlands to store and purify runoff; • Runoff from parking lots must be treated to remove oil and sediment.

Part 3. Land Use Plan— Goals, Policies, and Future Land Use Map

Growth and Development Goals

This section details Emerald Isle's future land use goals. These goals describe the *desired ends* toward which the land use plan and its policies are directed. They also describe the values and general principles that guide the town's development and redevelopment.

The goals are an outgrowth of the key issues and concerns identified by the Land Use Plan Steering Committee; the planning vision; and the technical analysis of existing and emerging trends. They provide a template for developing policies and programs.

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 values

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

Emerald Isle’s Future Land Use and Development Policies

Introduction

Emerald Isle’s policies are a consistent set of the principles and decision guidelines, or courses of action that are adopted by the Board of Commissioners to attain its land use and development goals. While the policies are not regulatory, except for the requirements and standards for development and land use in Areas of Environmental Concern, the Town will follow a deliberate process to ensure that its development management ordinances and regulations and future land use and development decisions are consistent with the policies. Part 4 of the plan, Tools for Managing Development, contains a description of the steps that will be taken to address consistency between policies and local development management ordinances.

CAMA planning guidelines specify that local policies must address six *management topics*. These management topics include:

- 1.0 public access
- 2.0 land use compatibility
- 3.0 infrastructure carrying capacity
- 4.0 natural and manmade hazard areas
- 5.0 water quality, and
- 6.0 local concerns (small town atmosphere).

The topic of local concern is a general topic of **maintaining a small town atmosphere**. This topic was mentioned numerous times in the community workshop and Steering Committee meetings.

The policies that address each of these management topics are described below. Applicable CAMA Planning Objective(s) and a brief discussion of the policy background are provided for each management topic. This discussion is intended to provide users of the plan with information about the context of the adopted policies and is not intended to be part of the Town adopted policies.

The policies for development and land use in AECs do not exceed state standards.

The Town’s adopted Land Use and Development Policies are shown in **bold**.

1.0 Public access

PUBLIC ACCESS CAMA PLANNING OBJECTIVE
“Develop comprehensive policies that provide beach and public trust water access for the shorelines in Emerald Isle.”

Discussion

Residents and visitors to Emerald Isle have traditionally enjoyed excellent access to the ocean beach and the estuarine waters of Bogue Sound. It is fortunate that the town’s original design provided for numerous well-located access locations for the beach and included short, dead-end streets on the north that lend themselves to pedestrian access to Bogue Sound. A small number of these potential access locations provided in the town’s original layout are obscured or blocked by private encroachments.

The Town has added several additional access facilities: a universally accessible access point at the east end, two regional beach access locations, and Cedar Street Park that provides formal access to Bogue Sound. The Town is developing Emerald Isle Woods Park, which will provide additional access to the sound. In addition, the Town has recently acquired a sound front access site near Chapel-By-the-Sea.

Policies related to **public access** are directed toward the Town’s ongoing beach renourishment and inlet stabilization projects.

Policies

- 1.1 **The Town will continue to maintain, improve, and reclaim its Public Access Locations to ensure that residents and visitors have satisfactory access to the ocean beach and the sound. The Town will use its *Shoreline Access Plan* as a guide for the location, development, and improvement of ocean and sound access.**
 - 1.1.1 **The Town will seek to provide at least one community access location every 1/2 -mile along the beach and to identify or provide parking spaces within walking distance (1/4 -mile). If possible, the**

- Town will utilize existing access points to provide community access.
- 1.1.2 The Town will seek to provide local access locations every 1/4-mile to provide pedestrian and bicycle access to the beach for surrounding neighborhoods. These local access locations will have minimal facilities. Vehicular parking may not be provided at these facilities.
 - 1.1.3 The Town will undertake, where feasible, development of additional Cedar Street-like facilities to provide satisfactory access to Bogue Sound.
 - 1.1.4 The Town will provide satisfactory access to residents and visitors of all abilities. It will review the community's needs for universal access and take steps to eliminate barriers.
 - 1.1.5 The Town will seek financial assistance from the State and Carteret County for development of additional access facilities.
 - 1.1.6 Where there are currently dedicated but unimproved access locations, the Town will (1) continue its policy of accepting maintenance of properly constructed walkways and cross-overs 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.
- 1.2 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.
 - 1.3 In conjunction with the development and implementation of the comprehensive stormwater management program and subject to available funding, the Town will seek to correct conditions at access locations on street-ends to ensure that these facilities do not contribute to impairment of water quality in Bogue Sound.
 - 1.4 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.
 - 1.5 The Town will review local ordinances regulating the placement and length of piers and make adjustments so that they mirror CAMA standards.
 - 1.6 Boat launching facilities in the Town are currently limited to the private Island Harbor Marina, small private launching facilities, and small unimproved facilities at a few street ends that do not have parking areas and that serve only the nearby neighborhoods. The Town's goal is to provide additional public boat launching facilities, with designated parking areas, for its residents, property owners, and visitors. The Town will

work to identify suitable locations and pursue grant funding for such projects.

2.0 Land Use Compatibility

LAND USE COMPATIBILITY CAMA PLANNING OBJECTIVES

“Adopt and apply local development policies that balance protection of natural resources and fragile areas with economic development.”

“Policies that provide clear direction to assist local decision making and consistency findings for zoning, divisions of land, and public and private projects.”

Discussion

Even though Emerald Isle is approaching full effective development, the Town places high value on protection and conservation of its coastal resources. Residents who have participated in the planning process have expressed concern about coastal wetlands, Bogue Sound, which is designated an *Outstanding Resource Water (ORW)*, the *estuarine shoreline*, non-coastal wetlands, and vegetative cover. The ORW designation means that the waterbody has outstanding scenic, fishery, recreation, wildlife, and ecological values.

Coastal wetlands in Emerald Isle are marshes that are regularly or occasionally flooded by tides. These marshes perform several valuable services. They provide food for fish and shellfish in the sound; they provide wildlife habitat; they help protect against erosion; and they help remove sediment and pollutants from stormwater runoff. These wetlands are unsuited for any development or land use that would alter these natural functions.

Bogue Sound and its tributaries are part of the *estuarine water system* that is an integral part of the coastal lifestyle enjoyed by Emerald Isle residents and visitors. Not only are these waters tremendously valuable scenic resources, they also support the region's valuable commercial and sport fisheries, which include species such as menhaden, flounder, shrimp, crab, clams, and oysters. Bogue Sound is designated an Outstanding Resource Water. Only land uses and development that are compatible with its outstanding scenic, fishery, recreation, wildlife, and ecological values are appropriate.

The *dry land edge*, or estuarine shoreline, that forms the transition between Bogue Sound and upland areas is an important part of the overall system. It extends landward for 575 feet. Development in this area must protect existing barriers to erosion, limit impervious surfaces, and take steps to prevent sedimentation and pollution from runoff.

Non-coastal wetlands are important components of Emerald Isle's natural systems to manage stormwater, protect water quality, and prevent erosion. These important landforms should be protected.

Only small, isolated areas that meet the traditional definition of *maritime forest* remain in Emerald Isle. However, the town still has significant areas that are covered with native vegetation. All of these areas are valuable assets and are worthy of attention and preservation.

The Town's policies provide a set of guidelines that will protect these resources in decisions related to land use and development.

Policies

- 2.1 **Due to the essential role that they play in protecting water quality and providing food and habitat for fish and wildlife, the Town supports protection and conservation of Emerald Isle's coastal wetlands.**
 - 2.1.1 **The Town endorses the CAMA use standards, which may be minimum requirements, and the development permit system as an effective tool for conserving coastal wetlands.**
 - 2.1.2 **Through enforcement of local ordinances, the Town will ensure that land use and development are consistent with conservation of coastal wetlands. The Town will allow only land uses in coastal wetlands that require water access and cannot function elsewhere. Examples of acceptable uses are utility easements, piers, and docks. Where such uses are permitted, the Town will require them to be developed in such a manner that the impact on coastal wetlands is minimized.**
- 2.2 **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.**

- 2.3 **The Town recognizes the importance of the 575-foot ORW-estuarine shoreline in protecting water quality in Bogue Sound and supports use standards that preserve natural barriers to erosion, require vegetated buffers, requires 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.**
- 2.4 **The Town will only allow uses in estuarine waters that are compatible with protection and conservation of their biological and community values.**
 - 2.4.1 **Only development associated with water-dependent uses is allowed. Examples of appropriate development may include public access facilities, docks and piers, or erosion control structures.**
 - 2.4.2 **In all cases, the design of facilities or activities will ensure that any negative impacts on estuarine waters are minimized.**
 - 2.4.3 **Development of new marinas or expansion of existing marinas must be consistent with local ordinances.**
 - 2.4.4 **“Floating homes” are not allowed.**
- 2.5 **The Town will require identification and encourage preservation of high-value, non-coastal wetlands on development site plans to protect their biological and stormwater management values.**
- 2.6 **The Town places high value on its native vegetation and encourages flexible site planning and site development that helps preserve this resource.**
- 2.7 **The Town will strongly encourage future development and land uses patterns that are consistent with conservation of its natural systems.**

3.0 Infrastructure Carrying Capacity

<p>INFRASTRUCTURE CARRYING CAPACITY CAMA PLANNING OBJECTIVE “Establish policies to ensure that the location and capacity of public infrastructure is consistent with the Town’s growth and development goals.”</p>
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Discussion

Emerald Isle’s key infrastructure systems include NC 58 and the local street system; the public water system operated by Bogue Banks Water Corporation (BBWC), which is a non-profit corporation; and the drainage system.

NC 58 is “Main Street” but it must also carry large volumes of regional traffic with origins and destinations outside of Emerald Isle. Traffic volumes on this highway are extremely heavy during the vacation season and residents and visitors alike would like to see relief. In addition, the NC Aquarium at Pine Knoll Shores will double in size in the near future and increase traffic pressure on NC 58 with visitors traveling from the mainland through Emerald Isle to reach this attraction. It also has the potential for creating a barrier between the sound areas and the ocean areas, making access difficult and dangerous. In addition, some residents are concerned that current highway facilities may not be adequate to handle traffic in times of storms.

The BBWC says that it has sufficient capacity to serve the town’s projected peak population and that its aquifer water resource is not a limiting factor for growth. Nine of BBWC’s 11 wells for the water system are located in Emerald Isle. A third water tower is planned to improve water pressure at the western end of the town. The Town will work with the BBWC to ensure that these wells are protected.

The Town has a drainage plan that was developed in 1988. Several of the recommended projects have been implemented. The Town is currently implementing an innovative stormwater management system to address continuing problems in the Coast Guard Road area.

The *White Oak River Basin Plan* and NC Shellfish Sanitary Survey for area D-3 indicate that bacterial contamination from stormwater runoff is a major source of water pollution in this area of Bogue Sound bordering Emerald Isle. The Town will address this issue through a comprehensive stormwater management program that addresses flooding problems, runoff volume, and sedimentation and pollution from runoff.

While not within the timeframe of this land use plan, the Town will work with the North Carolina Department of Transportation, emergency management agencies, and property owners in Emerald Isle to support the highest possible level of response to emergencies. This may involve identification or development of parallel E-W access when NC 58 is not passable and identification of strategically located helicopter landing sites when emergency transport off the island is required.

Policies

- 3.1 The Town supports improving traffic safety and the traffic capacity of the NC 58 corridor on and adjacent to Bogue Banks to better accommodate seasonal peak traffic volumes.**
 - 3.1.1 Two travel lanes with a center turn lane and bicycle lanes is the preferred cross-section for NC 58 through the existing commercial area, from the Coast Guard Road intersection to the vicinity of Mile-post 17. From this area to the city limits the preferred cross-section is 2 travel lanes and 2 standard bicycle lanes.**
 - 3.1.2 The Town strongly supports a corridor design that does not create a barrier between the ocean side and the sound side and that provides for sufficient safe crossings to allow pedestrians and bicyclers to safely cross the highway.**
- 3.2 The Town endorses funding to provide transportation improvements that enhance area access and travel within the region without harming Emerald Isle's "small town atmosphere."**
- 3.3 The Town supports development of the system of pathways and crosswalks as recommended by the Highway 58 Corridor Committee. The Town encourages additional planning to expand the pathway system to major destinations throughout the community.**
- 3.4 The Town will undertake a long range planning process for additional east-west access through the commercial concentration at Bogue Inlet Drive. The plan will focus on relief of traffic congestion at this location and support further development of this area into the Emerald Isle Town Center.**
- 3.5 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 is opposed to widening the existing Langston Bridge or building a parallel bridge as a solution to improved access. The Town supports a mid-island bridge as a preferred solution to congestion on NC 58. A mid-island bridge would tie-in to the NCDOT's regional plan to expand Hibbs Road to 5 lanes from NC 24 to NC 70 and provide an additional evacuation route for people living in the middle of Bogue Banks.**
- 3.6 The Town will ensure that land use and development decisions and management of transportation facilities complement and enhance each other.**

- 3.7 **The Town will continue to provide residents, businesses, and visitors with adequate and safe drinking water through the BBWC system.**
 - 3.7.1 **The Town will continue to consider the impact of land use and development in Emerald Isle on the supply and quality of the island's drinking water.**
 - 3.7.2 **The Town will require developers and property owners to connect to the BBWC system at their own expense.**
 - 3.7.3 **The Town and BBWC will periodically review population growth, development patterns, and water system capacity to ensure balance between the public water supply and population growth and development.**
- 3.8 **The Town will undertake development of 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.**
- 3.9 **The Town will continue to rely on septic tanks and private "package treatment plants" for wastewater treatment. The Town will not pursue development of a central sewer system.**

4.0 Natural and Manmade Hazard Areas

HAZARD AREAS CAMA PLANNING OBJECTIVES

"Develop location, density, and intensity criteria for new development and redevelopment so that it can better avoid or withstand hazards"

"Correlate existing and planned development with existing and planned evacuation infrastructure."

Discussion

Coastal storms constitute a significant hazard for residents and properties in Emerald Isle. The Division of Coastal Management places the Town's historical rate of beach erosion at 2 feet per year. Yet after Hurricane Floyd in 1999, the town experienced significant beach recession. After the storm, the Town estimated that 156 single-family structures, and 17 mobile home lots were endangered.

Bogue Inlet is encroaching on the western end of the island. Engineers estimate that the inlet is migrating to the east at a rate of 60 to 90 feet per year.

The Town has identified 86 repetitive flood insurance loss locations. Most of these locations are in the western area.

A significant area of Emerald Isle is subject to “accident potential” and “noise impacts” associated with aircraft operations at Bogue Field. Accident potential zones impact nearly 1,500 parcels. “Some” or “moderate” noise levels impact nearly 2,500 parcels.

The Town’s approach is to mitigate the risks associated with these hazards through information, local development guidelines, support of the State’s coastal management program, and local nourishment and inlet stabilization projects.

Policies

4.1 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:

4.1.1 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.

4.1.2 Due to the valuable role that vegetative cover plays in stabilizing soil and dune systems and increasing resistance to damage from storms, the Town strongly opposes excessive removal of vegetation for development or redevelopment.

4.1.3 The Town will continue a beach conservation and nourishment program as part of an overall program to mitigate risks from coastal storm events.

4.1.4 The Town supports realignment of Bogue Inlet to address its encroachment on the western shoreline of the island and to protect and restore valuable recreational and environmental resources. To address the increased risks to development in the Bogue Inlet hazard area, the Town strongly discourages inappropriate development by limiting residential and commercial density, structure size, and development intensity. Outdoor recreation

activities, uses that do not require impervious surfaces and public access are examples of uses that are encouraged in this area. The Town will allow no development *west of the western property line of properties currently fronting on the western side of Bogue Ct.*

- 4.2 The Town supports measures to mitigate the aircraft accident potential and elevated noise levels associated with operations at Bogue Field.
 - 4.2.1 The Town believes that safety and noise hazards within the APZ and noise contours must be disclosed to new buyers prior to purchase. Such disclosure is best conducted and controlled by real estate brokers uniformly within the county. The Town will review and adopt a procedure for disclosure after consultation with the NC Real Estate Commission, the Carteret County Board of Realtors, and Carteret County officials.
 - 4.2.2 The Town will not rezone areas within the APZ to a zoning district that allows higher residential densities than the current zoning district. The one exception to this policy is the commercial area identified as Village East, which is specifically targeted for redevelopment in the future and may include a mixture of residential and commercial uses.
 - 4.2.3 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.
- 4.3 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). 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.
- 4.4 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.
- 4.5 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.

- 4.6 **The Town will work with the Emerald Isle Fire Department to maintain its #4 Fire Rating.**
- 4.7 **The Town will take steps to improve traffic handling capability and safety of Emerald Isle's streets and roads and will encourage improvement of evacuation routes off Bogue Banks.**

5.0 Water Quality

WATER QUALITY CAMA PLANNING OBJECTIVES

“Policies that help prevent or control non-point source discharges...”

“Establish policies and land use categories aimed at protecting open shellfishing waters and restoring closed or conditionally closed shellfishing waters.”

Discussion

According to the White Oak River Basinwide Plan, overall water quality in the waters adjacent to Emerald Isle is generally good. The waters in Bogue Sound are either fully supporting or partially supporting for all of the dimensions of water quality rated by the Division of Water Quality (DWQ).

Piney Creek and a small area around Island Harbor Marina are the only areas permanently closed to shellfishing. However, DWQ's basinwide plan shows that shellfish stocks are declining throughout Bogue Sound.

According to the NC Shellfish Sanitation Section, fecal coliform that is directly related to stormwater runoff is the major source of pollution in Bogue Sound and its tributaries. Shellfish Sanitation recommends stormwater management and public information and education as the most effective local strategies for protecting water quality.

The Town relies on septic tanks and private “package treatment plants” for wastewater treatment. The Carteret County Health Department indicates that soils in Emerald Isle are generally suited for septic tanks and that existing septic tanks are not a significant water quality issue. Package treatment plants on the other hand have experienced some performance problems. These package plant problems are sometimes linked to a lack of capital to repair and upgrade the system.

Policies

- 5.1 **The Town will undertake a comprehensive stormwater management program that controls the amount and quality of stormwater runoff that is consistent with maintaining and enhancing water quality in the Ocean and Bogue Sound and restoring water quality in Piney (Archer's) Creek. The stormwater management program will address the following objectives:**
 - 5.1.1 **Reduction of 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;**
 - 5.1.2 **Application of stormwater ordinances to new private development and significant redevelopment of existing properties;**
 - 5.1.3 **Retention of vegetated buffers along drainage ways where feasible; and**
 - 5.1.4 **Cooperation between the Town and property owners to reduce sedimentation and pollution from local runoff.**
- 5.2 **As part of the comprehensive stormwater program, the Town will investigate the feasibility and cost associated with the restoration of water quality in Piney Creek to the point that the creek may be opened to shellfishing.**
- 5.3 **The Town will ensure that its land use and development policies support the goal of maintaining and enhancing water quality.**
 - 5.3.1 **Maintain "low" density development patterns that are consistent with maintaining and enhancing water quality;**
 - 5.3.2 **Encourage innovative development techniques to reduce impervious surfaces associated with new development or significant redevelopment; and**
 - 5.3.3 **Review current development requirements to identify opportunities to reduce impervious surfaces.**
- 5.4 **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.**
- 5.5 **The Town supports septic tanks as the primary means of wastewater treatment where soil limitations are not a factor.**

- 5.6 To minimize septic tank problems, the Town will undertake an education program that provides information to property owners on proper maintenance of septic tanks.
- 5.7 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 wastewater treatment plants.” Owners and operators of these facilities must have a plan of operation and a financial plan, satisfactory to the Town, that ensure the plant’s continuous operation and its periodic repair, upgrade, and expansion as needed. Like some other NC communities, the Town may require a performance bond, letter of credit, or other financial instrument for the long-term maintenance and upgrade of any package treatment plant to insure that it protects public health and water quality.

6.0 Local Concerns—Small-town Atmosphere

Discussion

Preserving Emerald Isle’s small-town atmosphere is almost universally mentioned as an aim of the Land Use Plan. This generally means maintaining and enhancing the community’s following characteristics:

- An “identifiable” commercial core that serves as a “town center”
- Predominantly lower density residential uses with most single-family and dual-family homes
- Sidewalks and bike paths that connect neighborhoods to the commercial areas, public access points, and other frequent destinations
- Appropriate signage and lighting on commercial structures
- Street trees on public rights-of-way and landscaping on private parking areas

The Town recognizes the potential for developing large hotel complexes in Emerald Isle. Such hotels are characterized by more than 100 rooms. The Town is opposed to this type of development because it conflicts with Emerald Isle’s “small town atmosphere.” The Town is also opposed to the development of a

convention center. However, the Town supports and encourages development or redevelopment of smaller-scale hotels or motels that are consistent with its land use policies, ordinances, and regulations, which will ensure that the development “fits” the community.

Policies

- 6.1 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.**
 - 6.1.1 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.**
 - 6.1.2 The Town will encourage single and dual-family development and redevelopment in areas planned for residential uses. The Town will continue to enforce the density limits of the existing zoning ordinance for new development and significant redevelopment. In areas planned for single and dual-family structures, these limits range from 3.5 dwellings per acre to 5.8 units per acre. In mixed residential areas, density may be up to 8.0 units per acre.**
 - 6.1.3 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.” In these cases, the effective density cannot exceed 3.5 dwelling units per acre for single-family structures and 5.8 dwelling units per acre for dual-family structures.**
 - 6.1.4 The Town continues to allow multifamily development at a density not to exceed 8.0 dwelling units per acre. Areas for multifamily development are designated on the Future Land Use Map as *mixed residential* and will have the following characteristics:**
 - 6.1.4.1 The Town opposes development of new multifamily residential uses in areas that are currently developed predominantly for single-family and dual-family residences. It will review existing zoning in these areas and consider changes to zoning designations that allow only single-family and dual-family structures.**

- 6.1.4.2 The Town will permit multifamily housing at a maximum density of 8.0 units per acre on parcels of land that are identified on the Land Use Map as mixed residential.
- 6.1.4.3 The Town will consider any requests to rezone property from commercial to mixed residential or low density residential.
- 6.1.4.4 The town will maintain its current building height limits.
- 6.2 The Town supports the concept of creating 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. The Gateway will announce arrival at a special place.
- 6.3 The Town continues to support development of the local retail and support services sector that provide a greater range of goods and services to both year round residents and visitors.
- 6.4 The Town encourages commercial buildings that are consistent with Emerald Isle's small town atmosphere. Important characteristics include size, design, appropriate signage, and modest lighting.
- 6.5 The Town supports development of a more traditional "town center" that builds on development and redevelopment of the existing business areas. The Town will initiate a long-range planning program for the center. The plan will be consistent with our vision of preserving and enhancing our small town atmosphere, and it will include the following components:
 - The town center will encourage mixed uses such as retail services, restaurants, entertainment, and residences. The Town discourages location of new motels and hotels in this area.
 - 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.
- 6.6 The Town supports development of a commercial convenience area on Emerald Drive between Connie and Ocean Drive.
- 6.7 The Town will seek to create a partnership with the NC Department of Transportation, local private organizations, and residents and property owners to develop and implement a landscape and beautification program for public rights-of-way.
- 6.8 The Town recognizes the potential for location of new motels or hotels and encourages location of these developments in the area designated on

the Future Land Use Map as *Village West*. Such a development must comply with the policies of this plan and all applicable local ordinances.

6.9 The Town opposes the construction of a large-scale hotel or motel complex.

6.10 The Town opposes the construction of a convention center.

Future Land Use Map

CAMA Land Use Planning guidelines require a future land use map that depicts the Town's growth and development policies and its desired future patterns of land development. The map must also give "due consideration" to the planning area's natural system constraints and the Town's infrastructure policies.

Emerald Isle's Future Land Use Map, which follows, uses a land classification system to show desired future uses and land use patterns. This classification system has seven categories of land use and development. These seven categories include the following:

- Conservation
- Main Business Area
 - Emerald Drive Business Corridor
 - Village East – Town Center
 - Village West
 - Marina Village
- Eastern Commercial Area
- Living Areas
 - Single/Dual-Family
 - Mixed Residential

These future land use categories and the policy emphasis in each are described below. The policy emphasis for each category is detailed in the shaded boxes.

Conservation areas

The purpose of the *Conservation* land classification is two-fold. First, the classification provides protection and effective long-term management of Emerald Isle's significant and irreplaceable natural systems. These areas have high natural, scenic, recreational, and life-style values. Second, the classification helps the Town mitigate the risks to life and property that would result from development in areas with significant hazards associated with wind, flooding, and erosion.

Town of Emerald Isle
 CAMA Land Use Plan Update
Future Land Use Map
Map A - West

Match Line

14-digit HU
 03020106020052

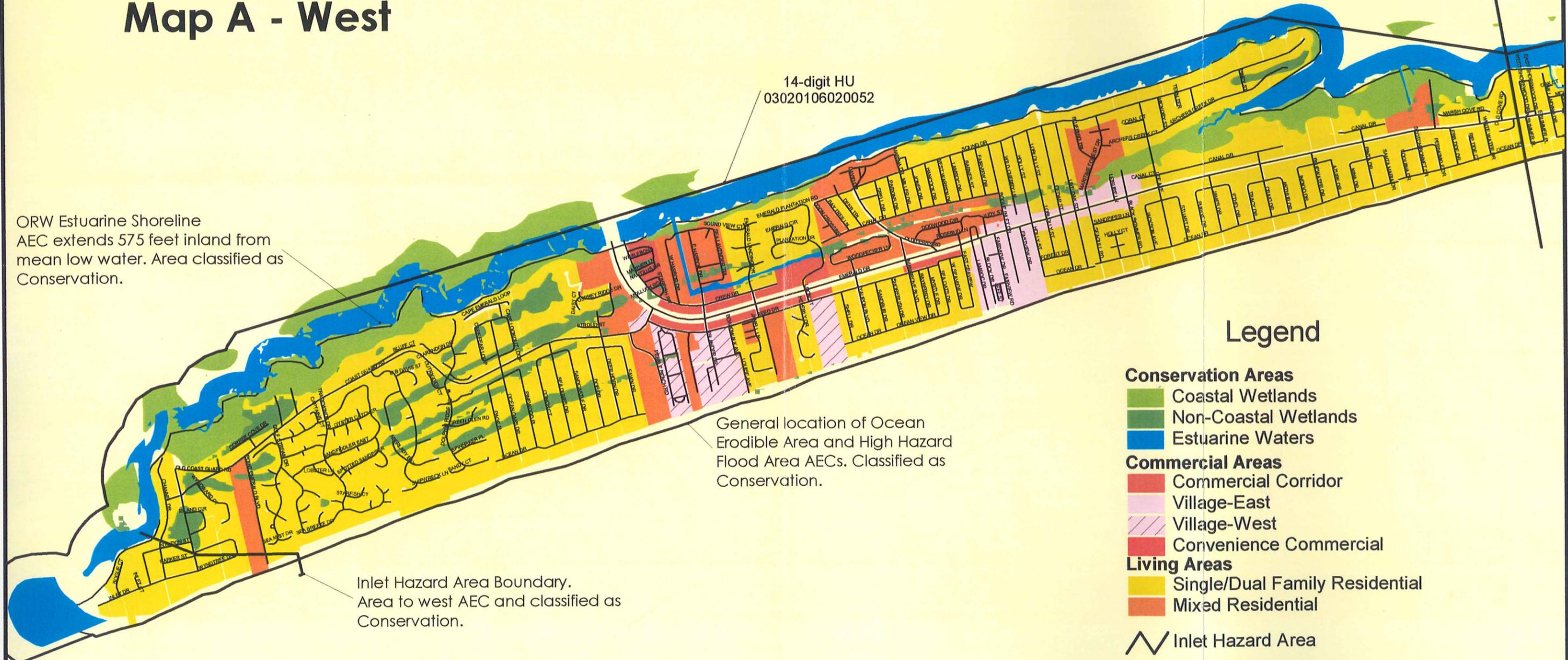
ORW Estuarine Shoreline
 AEC extends 575 feet inland from
 mean low water. Area classified as
 Conservation.

General location of Ocean
 Erodible Area and High Hazard
 Flood Area AECs. Classified as
 Conservation.

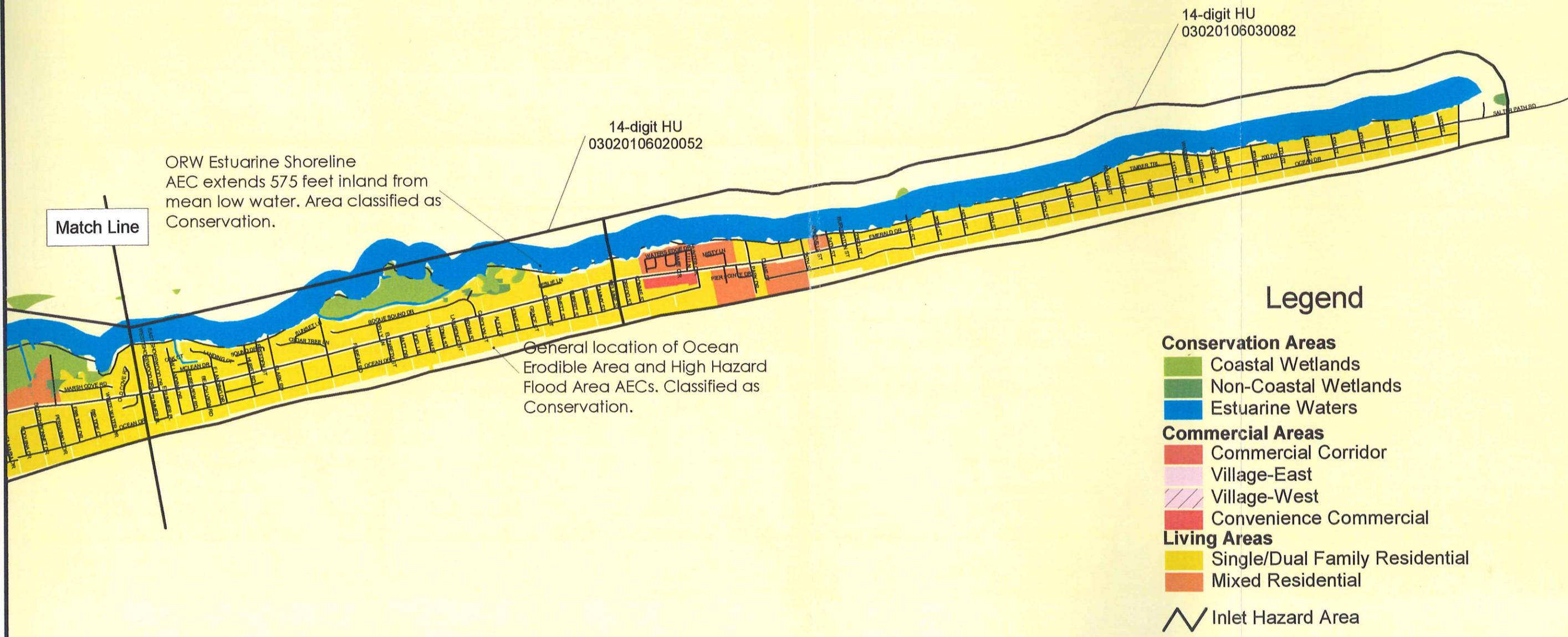
Inlet Hazard Area Boundary.
 Area to west AEC and classified as
 Conservation.

Legend

- Conservation Areas**
 - Coastal Wetlands
 - Non-Coastal Wetlands
 - Estuarine Waters
- Commercial Areas**
 - Commercial Corridor
 - Village-East
 - Village-West
 - Convenience Commercial
- Living Areas**
 - Single/Dual Family Residential
 - Mixed Residential
- Inlet Hazard Area



Town of Emerald Isle
 CAMA Land Use Plan Update
Future Land Use Map
Map B - East



Legend

- Conservation Areas**
 - Coastal Wetlands
 - Non-Coastal Wetlands
 - Estuarine Waters
- Commercial Areas**
 - Commercial Corridor
 - Village-East
 - Village-West
 - Convenience Commercial
- Living Areas**
 - Single/Dual Family Residential
 - Mixed Residential
- Inlet Hazard Area**
 - Inlet Hazard Area

The conservation classification includes the following land features:

- Bogue Sound and its tributaries
- Bogue Sound estuarine shoreline
- Coastal wetlands
- Ocean erodible area
- Bogue Inlet hazard area
- High hazard flood area
- Non-coastal wetlands

The overall policy for the Conservation classification is to manage land use and development so as to protect natural, scenic, recreational, and life-style values of these areas and to encourage land uses that are better able to withstand the storms, erosion, and flooding that typically occur in hazard areas. The base guidelines for determining acceptable land uses are the CAMA general use standards, local ordinances and codes, and the policies contained in this plan. Where construction is permitted within a Conservation Classification, density and intensity of development, such as height, number of stories, and lot coverage, will be determined by local codes and CAMA general use standards.

Emerald Isle Main Business Area

The Main Business Area includes three related areas: The business and mixed use area, called Village-East Town Center, which is centered along Bogue Inlet Drive, the commercial area, called Village-West, which is centered in the Islander Drive area, and the Emerald Drive Business Corridor, which connects the two "Villages" and the Marina Village Area. The Main Business Area is planned to encourage the provision of quality retail activities and business services to meet the needs of permanent residents and visitors. It will encourage owners to redevelop properties where appropriate and to ensure that new and redeveloped commercial properties are consistent with the Town's goal of maintaining a small-town, family atmosphere, while protecting and enhancing its natural environment.

Development Intensity Standards

Intensity of development in planned commercial areas will be controlled by the Town's current height and lot coverage standards. These limits are summarized below: (Readers should consult with the Town's Building Officials to determine the application of these standards to specific properties.)

Height standard for commercial land uses

Maximum of 40 to 50 feet depending on construction materials and roof slope.
Flat or low-pitch roofs ($\leq 3/12$) maximum of 35 feet.
Pitch roof ($> 3/12$) maximum of 50 feet to mean roof level.

Lot coverage

For the more intensive commercial areas, at least 15% of the lot area must be preserved in a natural state (natural area may be used for septic drain field). For less intensive commercial areas, at least 25% of the lot area must be preserved in a natural state.

Each of the three planning areas is described in more detail below.

—Emerald Drive Business Corridor

The planned Emerald Isle Business Corridor is built on the existing business corridor that extends along Emerald Drive from the vicinity of Coast Guard Road to the Mangrove Drive area. The corridor also includes the area currently used for camping, which adjoins Bogue Sound to the north and east of Emerald Drive.

The purpose of the corridor is to continue encouraging commercial, business, and community uses in this corridor that offer a wide range of retail and service uses and facilities to serve Emerald Isle's core community and its seasonal visitors. The corridor will also offer related uses, such as camping, to serve visitors.

The Town encourages continued development of the business corridor for uses that address the needs of the community's year-round residents, as well as our seasonal visitors. Property owners and developers are strongly encouraged to provide appropriate signs and lighting, and well-landscaped parking areas; to control the volume and pollution level of stormwater runoff; and to cooperate with other property owners for shared driveways and parking areas in order to reduce impervious surfaces and to manage traffic impacts that worsen congestion. The Town will also ensure that land uses in this area comply with all policies of this plan.

The Town will ensure full compliance with all policies and development requirements, including the minimum lot sizes, setbacks, height restrictions, density limits, and preservation of native vegetation as established by the Town's current development management ordinances.

—Village-East Town Center

The Village-East area is planned as a long-term program for reinforcing the older commercial district that is centered in the Bogue Inlet Drive area in a way that creates a more traditional Town Center for Emerald Isle. The Town Center concept will include a mixture of uses that are similar to those found in traditional small towns. It could include retail shops and restaurants, retail, business support services, recreation and entertainment enterprises, public and semi-public uses, and residences. The plan will examine the potential for locating business and residential uses in mixed-use structures.

The Town Center will strive to offer pedestrian and bike connections to surrounding neighborhoods and will offer easy access from the ocean to the sound, including a safe and attractive crossing at Emerald Drive. Within the current height limits, second-story residential uses will be considered.

Planning for the Town Center will incorporate some surrounding residential areas to reinforce linkages to the town center and to encourage development and redevelopment of residential uses that support the planning themes for the area.

Two levels of residential densities are planned: maximum net density within areas currently zoned business is 8.0 units per acre; and maximum net densities for areas currently zoned for single family or duplex structures ranges from 3.5 dwelling units per acre to 5.8 dwelling units per acre.

The Town will encourage development and redevelopment of the Village-East Town Center by initiating a long-range planning process through a partnership with property owners, residents, business owners, and affiliated local groups. The Town will also examine opportunities for public actions to support the concept. This may involve programs such as sidewalk improvements, property acquisition, and landscaping in the public right-of-way. Any development or redevelopment of properties in this area must comply with all of the policies of this plan. Building heights will comply with the Town's current building height limits.

—Village-West

“Village-West” includes the area in the western section of the Main Business Area with current land uses that are heavily oriented toward vacation and recreational activities. The general location of the area is on the south side of Reed Drive. Its western “boundary” is the Holiday Trav-I Park. It includes the business and amusement uses along Islander Drive; it skips Daisywood, Sound of the Sea, and Ocean Crest residential areas; and it includes the vacant tract located at the intersection of Loon and Reed.

Upgrade and redevelopment of existing uses is encouraged in this area. The Town recognizes that such a development may involve reconfiguration of some of the current land uses. This area may contain an appropriate site for a motel or small hotel. In addition to lodging, the area is appropriate for related activities such as restaurants, small specialty shops, beach-related goods, and entertainment.

Any development or redevelopment of motels or hotels in this area must meet specific site development criteria included in Town's land use policies. These development criteria and density limits are designed to address traffic congestion at the Emerald Drive-Coast Guard Road intersection; protect water quality; preserve native vegetation; and protect surrounding residential areas.

The Town will continue to encourage a mixture of uses tied to the tourism industry in the “Village-West” area. As examples, these uses include camping and residences, lodging, beach-related retail services, restaurants, and amusements. The Town will encourage well-landscaped parking areas, appropriate signage and lighting levels. Any new uses or redevelopment of existing uses in this area must be consistent with all of the policies in the plan.

Building heights will comply with the Town's current building height limits.

—Marina Village

The planned Marina Village Area is located at the northern terminus of Old Ferry Road at the existing Island Harbor Marina. The objective of this land use category is to provide residents and visitors with goods and services related to boating, water sports and similar activities. Examples of appropriate land uses in this area are marina, boat/marine repair facilities and providers of other goods and services for these types of uses.

The Town encourages uses in the Marina Village Area that meet the following guidelines:

- provide marine and boating related services that serve the needs of residents and visitors;
- are consistent with state and federal guidelines for such facilities; and
- allows for supporting businesses and residential land uses.

Eastern Commercial Area

The planned Commercial Area on the east-end is located on the south side of Emerald Drive between Connie Drive and Hunter Circle. The objective of this land use category is to provide residents of the surrounding neighborhoods with shopping areas and community facilities that provide goods and services that meet residents' day-to-day needs or that meet the service needs of neighborhood properties. Examples of appropriate uses in this area are

convenience retail, barber shops and hair salons, real estate rental offices, small restaurants, and small gift shops. These types of uses add to the convenience of these neighborhoods and help reduce the number and length of trips on NC 58.

The Town encourages uses in the Eastern Commercial Area that meet the following guidelines:

- provide shopping areas and community facilities with goods and services that meet day-to-day needs of nearby residences and properties;
- are in scale with the overall neighborhood development; and
- are in keeping with the other policies of this plan.

The Town will ensure full compliance with all policies and development requirements, including the minimum lot sizes, setbacks, height restrictions, density limits, and preservation of native vegetation as established by the Town's current development management ordinances.

Living Areas

Emerald Isle's residential areas are approaching full development. The major trends over the coming years will be on in-fill development – building on lots currently subdivided – and redevelopment and re-subdivision – moving or demolishing existing homes or combination of existing vacant lots. Basic public infrastructure is in place to support this residential development process. The major concerns include impact on existing community character, stormwater runoff and resulting potential impact on water quality, and compliance with current density limits and development requirements.

There are a small number of vacant tracts that have not been subdivided. The subdivision of these tracts will meet the current policies and State and local requirements.

There are also many large areas in Emerald Isle that are currently zoned to allow a mixture of residences, motels, hotels, and other non-residential uses but which have been almost fully developed with single-family or dual-family homes. It is the intent of the town to protect these residential areas by changes to a residential zoning classification that permits only single-family or dual-family residential land uses.

To adequately address its future land use goals, the Town has subdivided future Living Areas Classification into *Single/Dual-Family Residential* and *Mixed Residential* categories. These categories are described below.

Single/Dual-Family Residential 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. Maximum densities are 3.5 dwellings per acre for single family and 5.8 dwelling units per acre for duplex units.

While single-family and duplex residential structures are strongly encouraged, innovative site plan concepts such as clustering, mixed-use development, or "traditional neighborhood design" that involve other housing types may be considered in these areas. However, these types of development must adhere to single-family and duplex development densities.

Mixed-Residential areas are located mostly on undeveloped parcels and parcels currently designated for commercial uses. These areas are planned for single-family, duplex structures, or multifamily structures, and it is the Town's intent to limit future multifamily structures to these areas. Maximum densities in these areas are 3.5 dwellings per acre for single family, 5.8 dwelling units per acre for duplex units, and 8.0 units per acre for multifamily.

In addition to density limits for residential uses, the Town places intensity limits on residential development through its height limits. For buildings with flat or low-pitch roofs, the height limit is 35 feet from grade plane to mean roof height; for high slope roofs, the limit is 40 feet, measured from grade plane to mean roof height.

Policy 6.1 provides additional detailed guidance on residential land use and development.

The Town will encourage gradual in-fill development on vacant lots and the redevelopment of lots with older homes for single-family residences and duplexes and ensure that this development is compatible with the character of the existing neighborhoods. The Town will also ensure that development on existing lots, including redevelopment, complies with existing policies and requirements. For new residential development and major redevelopment, the Town encourages low-density single-family and duplex development in areas designated as *Low-Density Residential* on the Future Land Use Map. The Town makes provisions for some areas of moderate density multifamily development. Multifamily uses are strongly discouraged in areas currently developed mostly for single-family and two-family uses. Multifamily uses are encouraged in the areas designated *Mixed Residential* on the Future Land Use Map. The Town will ensure full compliance with all policies and development requirements, including the minimum lot sizes, setbacks, height restrictions, density limits, and preservation of native vegetation as established by the Town's current development management ordinances.

Allocation of Land to Various Use Categories

The planning guidelines require an analysis of the amount of land allocated to each of the land use categories and a comparison with the land needs analysis shown in Part 2, Section III, page 44. Table 23 details this analysis.

Table 23
Comparison of Land Allocated to Future Residential Land Use and Projected Land Needs

Future Land Use Category	Total Acres allocated	Vacant acres
Single/Dual Family Residential	1,948	210
Mixed residential	217	46
Commercial corridor	56	4
Village East and Village West	95	17
Marina Village	14	NA
Convenience commercial	5	2

Conservation	320	NA
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Table 17 in the section on “Analysis of Existing and Emerging Trends” provides an estimate of the residential land needed to accommodate the town’s projected population growth. This table shows that 190 acres will be required before applying the adjustment factor (+50%). After the adjustment is made, the land need estimate is 285 acres compared to 239 acres allocated on the Future Land Use Map.

Cost of Required Community Facility Extensions

No extensions of basic community facilities, such as water, sewer, and roads, are required to support the Town’s planned future land uses. However, the Town’s land use policies commit to development of a comprehensive stormwater management program to address stormwater issues and water quality.

Part 4. Tools for Managing Development

This section of the plan describes the Town of Emerald Isle's strategy and action plan for implementing its Growth and Development Policies. The section includes four major parts:

1. Description of the role of the plan and the status of its policies in the Town's land use and development decisions.
2. Description of the Town's existing development management program, including ordinances and plans, and how it will be used to implement the policies.
3. Identification of any additional tools that will be used to implement the plan.
4. Action plan and schedule for implementation.

Each of these parts is discussed below.

Role and Status of Plan

The Emerald Isle CAMA Land Use Plan will serve both day-to-day and long-range functions. The day-to-day functions relate primarily to the Town's administration of its development management ordinances and the public's understanding and use of these ordinances for land use and development decisions regarding their own property.

For the Board of Commissioners, the Plan will be a policy and decision guide on matters related to land use and land development in Emerald Isle. It will not have the status of a local ordinance or code, except in matters related to development or land use within Areas of Environmental Concern, but the policies and the future land use map will guide decisions on applicable ordinances and policies such as the zoning ordinance and subdivision regulations. The plan will also be used in the Board of Commissioners' decision-making on the Town's capital and annual operating budget. The Board will review the implementation plan periodically and make necessary adjustments based on budgetary considerations, coordination with other projects, and community needs. Changes in the implementation strategy will be transmitted to the Division of Coastal Management.

Another key use of the Plan is for **consistency determinations** by the Division of Coastal Management on major development permits, and by other state and federal agencies on the consistency of their projects and programs with local plans and policies.

The plan will also be a useful tool for others as outlined below.

- **Property owners and developers**— Plan will provide guidance on the types of land uses and development that are desired by the community. The policies will help owners or developers formulate proposals that are consistent with the goals and objectives of the community, thereby increasing the likelihood of approval. Finally, the plan provides base information that will help owners and developers understand the capabilities and limitations of their property.
- **Community members at large**— Plan will provide information that will permit residents and property owners to better understand plans for public projects or private development and will provide a reference when supporting or opposing such proposals.
- **Town's administrative staff**— The staff will use the plan as a tool for evaluating development proposals and for preparing plans for public facilities. The staff will also check existing ordinances for consistency with the plan and recommend any necessary adjustments to the planning board and/or Board of Commissioners. The staff will also use the plan and implementation strategy when preparing its budget recommendations.
- **Planning Board**— This body will use the plan and its policies to determine consistency of project plans and development proposals with community goals and objectives in making decisions to grant or deny requests, such as an ordinance amendment, special use permit, or subdivision plat, or to approve project plans.

Existing Development Management Program

Emerald Isle's existing development management program provides a comprehensive basis for implementing its growth and development policies. At the present time, the program includes the following ordinances and plans:

- Zoning ordinance
- Subdivision regulations
- Dune and vegetation preservation ordinance
- Flood damage prevention ordinance
- Stormwater control ordinance

Mobile home and travel trailer park ordinance
Shoreline access plan

The way that each of these local ordinances and policies are used to implement the plan is described in Table 24.

The Town has a well-staffed, professional Planning and Inspections Department that will be responsible for coordinating the administration of the development management program. This department has oversight of all ordinances related to building and development within the town.

The Planning and Inspections Department is scheduling a project to consolidate the components of the development management program into a single document to facilitate coordination and to make them easier for the public to use.

The Shoreline Access Plan is the responsibility of the Parks and Recreation Department. The Director of Parks and Recreation and the Director of Planning and Inspections will work closely on any adjustments to this plan.

Table 24
Emerald Isle CAMA Land Use Plan
Existing Development Management Program

Ordinance/Policy	Public access	Land use compatibility	Infrastructure carrying capacity	Natural hazard areas	Water quality	Small-town atmosphere
Zoning		Overlay district protecting coastal wetlands.	Requires public street access for all lots not included in a planned unit development.	<ul style="list-style-type: none"> Overlay districts requiring consistency with CAMA use standards in OHA. 	Overlay district requiring consistency with CAMA use standards in EW and PTA.	<ul style="list-style-type: none"> Permitted residential development predominantly lower density s-f and duplex. Sets standards for lighting and signage on commercial buildings.
Subdivision regulations	Requires public access to beach and sound in all subdivisions.	Prohibits platting of "unsuited" land for residential or other uses.				
Dune and vegetation preservation ordinance		<ul style="list-style-type: none"> Protects 35% of natural vegetation on residential lot. Protects 15-25% of natural vegetation on commercial lot. Restricts tree removal with no construction plan. 				Requires landscape buffers for commercial properties abutting Emerald Drive.
Flood damage		No hazardous land uses permitted in flood hazard area.		Requires all new or substantially upgraded	WWT must be designed to prevent discharge	

prevention ordinance				structures to comply with flood damage prevention standards.	into flood waters.	
Stormwater control ordinance		Wetlands can be used for water quality but must not be overloaded.			<ul style="list-style-type: none"> • No channeling directly into water bodies. • Vegetated buffer required. • Must retain 1st 2" of runoff onsite. 	
Bogue Sound Pier Ordinance	Limits fixed pier length consistent with CAMA.					
Mobile home and TT park ordinance						Requires compliance with dimension standards of zoning ordinance.
Shoreline access plan	Policy for developing and maintaining public access locations throughout community.					

New Tools/Reviews and Amendments/Projects

Ordinance amendments

Implementation of the policies contained in the Land Use Plan will require no new tools and only limited review and possible amendments to existing tools. These reviews and amendments are described below.

1. Review the Zoning Ordinance for consistency with updated land use plan. The review will address the feasibility of reducing and simplifying the number of residential zoning districts and eliminating motels, hotels, and other non-residential uses from districts developed for residential purposes. In addition, the review will recommend approaches for incorporating development requirements for motels, hotels, and multifamily developments into the zoning ordinance.
2. Review all development regulations to identify opportunities to reduce the amount of required impervious surfaces or to identify means to encourage use of paving materials that help reduce runoff.

Projects and Plans

1. Preparation of a comprehensive stormwater management plan and program. This program will include the following objectives:
 - Protection and enhancement of water quality.
 - Actions to address flooding in neighborhoods.
 - Review current development requirements to identify opportunities to reduce impervious surfaces.
2. Begin a program to improve access locations on street-ends to reduce runoff and sedimentation.
3. Investigate options to improve water quality in Archers Creek and Town Creek.
4. Update the Shoreline Access Plan with emphasis on identifying the following: needed improvements for universal access, potential parking facilities to serve community access location, and additional access locations on Bogue Sound.
5. Prepare long range plan for creation of a "Town Center" located in the Bogue Inlet Drive area and another similar area in the "Village West" area.

6. Begin discussions with the NCDOT and other Bogue Banks communities concerning long range planning for a 3rd bridge to be located “mid-island.”
7. Continue implementation of bikeway and sidewalk plans.

Implementation Action Plan

Table 25 shows the Town priority implementation actions and the general schedule in which they will be completed. The Town will review this action plan annually to identify any needed adjustments. These adjustments may be related to project timing and coordination with other programs of the Town; community needs that may change from time-to-time; and budgetary considerations, including the annual operation budget and the capital budget.

**Table 25
Emerald Isle Land Use Plan
Action Plan and Schedule
2004-2011**

Action	2004-05	2005-06	2006-07	2007-08	2009-10	2010-11
Review of Zoning Ordinance	● →					
Reduce requirements for impervious surfaces		● →				
Update Shoreline Access Plan			● →			
Comprehensive stormwater program		● →				
Improve street-end access locations (ongoing)				● →		
Investigate options to improve water quality in Archer's Creek				● →		
Long Range Plan for Town Center/Village West		● →				
Plan for Extension of Pedestrian/Bike Pathway System	● →					
Kick off "Bogue Banks Partnership" to plan for 3 rd Bridge	*					

APPENDIX 1

Required Policy Analysis

The planning guidelines require the local government to provide two types of analysis of its land use and development policies and the future land use map. Each analysis is described below.

Consistency of Plan with Management Topics

1. Consistency between goals and management topics – direction of policies.

Public access. The Town's access policies are intended to provide "satisfactory access for residents and visitors to the beaches and the Sound for a range of activities." The policies establish minimal service levels for access locations and they address areas where access can be improved. They also provide for a program to develop *universal access* and the Town will protect existing public access through the development review process.

Land use compatibility. The Town's goal is to continue "land uses and land use patterns that are consistent with the capabilities and limitations of its natural systems." The policies protect the town's wetlands and the ORW-estuarine shoreline to ensure that their role in water quality is maintained. The policies also ensure that land uses and facilities are designed in a manner that protects the biological, economic, and community values of estuarine waters.

Infrastructure carrying capacity. The Town's infrastructure goals focus on traffic flow and safety on its highway and street system management of stormwater to address flooding and to protect water quality. Important transportation policies are designed to provide facilities that enhance local and regional access while protecting Emerald Isle's "small town atmosphere." The policies specifically oppose widening the Langston Bridge or construction of a parallel bridge in Emerald Isle. They support a mid-island bridge to the mainland.

Stormwater policies include preparation of a comprehensive stormwater management program.

Natural and man-made hazards. The Town's goal is to "mitigate risks from storms, flooding, beach erosion, and the migration of Bogue Inlet." Policies to support this goal include limitations on the intensity of development within hazard areas, a program for beach nourishment, and stabilization of Bogue Inlet.

The Town also supports policies to address the accident potential and noise hazards associated with operations at Bogue Field.

Water quality. There are two goals related to water quality. One goal relates directly to water quality by "(meeting) water quality standards and (waters that) are approved for shellfishing." The second goal is to manage stormwater "to protect water quality."

As noted above, the Town will develop a comprehensive stormwater management program that has water quality as a major objective. Associated with this program is ongoing analysis and improvements to stormwater issues at street ends that intersect the ORW shoreline. And finally, the Town commits to improvement of water quality in Archer's Creek where feasible.

The Town's land use policies maintain a low-density development pattern that supports the water quality goal. Policies address development in the ORW shoreline to ensure that it supports water quality. And finally, the Town will implement an information program to help property owners to properly maintain septic tanks.

Local concerns – small town atmosphere. Protection of Emerald Isle's small town atmosphere is a major goal of local concern. Policies encourage residential development patterns that are consistent with this goal. Policies also encourage development of only small hotels or motels to ensure that they support the small town atmosphere. The Town will undertake a long range planning program for creating a new town center in the Bogue Inlet Drive commercial area.

2. **Consistency between future land use map and land use plan requirements.**

A. **Residential density.** The map shows two levels of future residential land uses: single/dual family residential and mixed residential. The density range for single/dual family is 3.5 dwelling units per acre for single-family

and 5.8 dwelling units per acre for duplexes. The mixed residential category includes single-family, duplexes, and multifamily. Density for single-family and duplexes are the same; density for multifamily is a maximum of 8.0 units per acre. Only 263 acres is allocated to mixed residential.

B. Comparison of environmental composite map, land suitability map, and future land use map. There are no material differences between these maps. All of the lower capability areas shown on the composite map and the lower suitability areas are classified as *conservation* on the future land use map.

C. Natural hazards.

- (1) Policies for land uses in the ocean hazard area and the inlet hazard area adopt the CAMA use standards for these areas. The use standards ensure that risks to life and property in these areas are reasonable.
- (2) In flood hazard areas, the Town will continue to enforce its flood damage prevention ordinance and the state building code to manage risks.
- (3) The Town's major evacuation infrastructure is NC 58 and the Langston Bridge. These facilities are considered to be adequate for current development levels and for the term of this land use plan. Long range, the Town will work with other Bogue Banks communities and the NCDOT to provide a third bridge located at mid-island.

D. Protection of shellfishing waters.

- (1) The residential land use patterns depicted on the **future land use map** are primarily low density (single/dual family residential) with net densities in the range of 3.5 to 5.8 units per acre. Gross residential densities will be much lower. Nearly 88% of the residential land is in this classification. Mixed residential allows moderate densities up to 8.0 units per acre. Only 12% of the area planned for residential is in this classification. These low-density residential patterns are consistent with protect of shellfishing waters.
- (2) Coastal wetlands, non-coastal wetlands, the ORW-estuarine shoreline, and the estuarine waters are classified as **conservation**. Only those uses that are consistent with the biological functions of these systems are permitted. These restrictions will protect the Town's open shellfishing waters.

- (3) While not shown directly on the future land use map, the Town's policies focus on stormwater management options to open Archer's Creek to shellfishing. The 22 acres in Archer's Creek are the only Emerald Isle waters closed to shellfishing (2 acres at the Harbor Marina are closed by statute).

Analysis of the Impact of Policies on Management Topics

The planning guidelines require the local government to analyze the impacts of its land use and development policies on the *management topics*. The analysis must describe both positive and negative impacts. If there are any negative impacts, then there must be policies to mitigate the negative impacts.

The impacts of Emerald Isle's policies on the management topics are shown in the matrix in Table 26. According to this analysis, all of the policies have either a beneficial or neutral impact on the management topics. No mitigation policies are required.

Table 26. Analysis of Impacts of Emerald Isle Policies on Management Topics.

Management Topics →	Public Access	Land Use Compatibility	Infrastructure Carrying Capacity	Natural Hazard Areas	Water Quality	Maintaining Small Town Atmosphere (Local Concern)
Land Use Policies ↓	Do access policies result in additional beach and sound access? Do policies support universal access? Do policies support appropriate access improvements?	Do policies result in land use and development patterns that protect natural systems? Do policies allow economic development?	Are the land use and development patterns encouraged by the policies consistent with location and capacity of water, sewer, roads, and stormwater facilities?	Do the policies have location, density, and intensity criteria to help new development and redevelopment avoid or withstand hazards?	Do the policies prevent or control non-point source discharges? Do the policies protect open shellfishing waters or help restore conditionally closed shellfishing waters?	Do the policies help Emerald Isle maintain its small-town atmosphere?
Public access	Beneficial. 1. Include criteria for local and community access locations. 2. Support development of parking and other facilities at community access points. 3. Support additional access locations on Bogue Banks shoreline. 4. Identify improvement needs for universal access. 5. Provide for public maintenance responsibility for properly constructed cross-overs. 6. Re-establish any dedicated access obstructed by encroachments.	Neutral.	Beneficial. Provide for link between pedestrian and bike pathways to public access locations.	Neutral.	Beneficial. Provide for Town to address stormwater outfalls, runoff and erosion at "street-end" access locations to enhance water quality.	Neutral.
Land use compatibility	Neutral.	Beneficial. 1. Support conservation of coastal wetlands by endorsing CAMA use standards and applying local regulations. 2. Require identification of high value non-coastal wetlands on site plans and encourages preservation. 3. Classify non-coastal wetlands as Conservation. 4. Encourage preservation of native vegetation.	Neutral.	Neutral.	Beneficial. 1. Encourage property owners to use erosion prevention methods most effective for protecting wetlands. 2. Support use standards for ORW shoreline. Apply local policies to support CAMA objectives. 3. Allow only compatible uses in estuarine waters.	Neutral.
Infrastructure carrying capacity	Beneficial. Provide for additional local planning to connect pedestrian and bike pathways to major destinations, such as public access facilities.	Beneficial. Protection and enhancement of water quality major objective of comprehensive stormwater program.	Beneficial. 1. Provide for upgrade of NC 58 to accommodate seasonal traffic. 2. Support mid-island location for 3rd bridge. 3. Include plan for additional E-W access in commercial area to relieve congestion. 4. Provide for comprehensive stormwater management program. 5. Coordinate land use policies with use of septic tanks as major WWT method.	Neutral.	Beneficial. Comprehensive stormwater management program support protection and enhancement of water quality.	Beneficial. 1. Provide for expansion of the system of pedestrian and bicycle pathways, currently under development in the core area, to major destinations throughout the town. 2. Supports highway designs that do not create a barrier between oceanside and soundside and that provide for safe pedestrian crossings. 3. Reinforce development of the "town center."

	Public Access	Land Use Compatibility	Infrastructure Carrying Capacity	Natural Hazard Areas	Water Quality	Maintaining Small Town Atmosphere (Local Concern)
Areas with natural and manmade hazards	Beneficial. One objective of Bogue Inlet realignment is to preserve existing recreation area and access location.	Beneficial. 1. Protect frontal dune system. 2. Preserve vegetative cover, thereby increasing resistance to storm damage.	Beneficial. Town will initiate work with DOT to improve traffic capacity of local road system and to improve evacuation routes.	Beneficial. 1. Adopt CAMA use standards for land use and development in Ocean Hazard AEC. 2. Adopt National Flood Insurance standards, CAMA use standards, and continue to implement local flood damage prevention ordinance. 3. Provide for on-going beach conservation and restoration program and for Bogue Inlet realignment. 4. Provides mitigation measures for noise and accident impacts of	Neutral.	Neutral.
Water quality	Neutral.	Beneficial. 1. Adopt CAMA/DWQ use standards for the ORW shoreline. Adopted local policies support. 2. Maintain low density development patterns and encourage development flexibility to preserve natural systems. 3. Encourage maintenance of vegetated buffers.	Beneficial. 1. Supports septic tanks as primary WWT method. Development densities do not require central sewer. 2. Allow "package plants" but insure maintenance and upgrade.	Beneficial. Comprehensive stormwater management program will reduce flooding.	Beneficial. 1. Provide for development of comprehensive stormwater program that will reduce NPS discharges, implement BMPs, retain vegetated buffers, and assist property owners in controlling pollution and sedimentation. 2. Program for restoring water quality in Piney Cr. 3. Control development density. 4. Measures to reduce impervious surfaces. 5. Development management in ORW shoreline. 6. Public awareness program on septic tank maintenance. 7. Provision requiring financial plan for maintenance/upgrade of "package" plants.	Neutral.
Maintain small town atmosphere	Beneficial. Ensure that development will protect public access and will not damage scenic qualities.	Beneficial. 1. Encourage "best development practices" that preserve environmental features. 2. Protect coastal and non-coastal wetlands. 3. Protect significant areas of native vegetation.	Beneficial. Require consideration of traffic impacts caused by intensive development.	Neutral.	Beneficial. 1. Maintain WQ "friendly" development densities. 2. Minimize impervious surfaces. 3. Protect vegetation.	Beneficial. 1. Low density residential development with focus on single-family and duplex structures. 2. Case-by-case evaluation of multifamily development. 3. Ensure compatibility with surrounding areas. 4. Town Center plan for Bogue Inlet Dr. area. 5. Plan for EI Gateway at bridge. 6. Provide for appropriate lighting, signage, and landscaping on commercial properties. 7. Opposes resort development not

APPENDIX 2

Emerald Isle CAMA Land Use Plan Update Citizen Participation Process

Citizens and property owners in Emerald Isle had extensive opportunities to participate in the process of developing the Town's land use and development policies and the future land use map. These opportunities are summarized below:

1. **Steering Committee.** The Town appointed a 15-member citizens steering committee that served as the lead planning organization. Members of the steering committee represented various geographic areas and businesses. One member was a non-resident property owner. The steering committee met almost monthly for 15 months. All meetings were open to the public and the public was provided an opportunity to speak at all meetings.
2. **Community Workshop.** A community workshop was held early in the planning process to provide citizens with an opportunity to express their ideas, concerns, and opinions about land use and development in Emerald Isle. More than 100 people attended this workshop.
3. **Community Open Houses.** Two open houses were held to allow residents and non-resident property owners an opportunity to review draft policies and the future land use map, to ask questions, and to make recommendations on adjustments to the policies and map. More than 100 people attended these open houses over two days.
4. **Community Survey.** The Town surveyed all property owners in the community to learn their opinions about key issues addressed by the land use plan. The return rate on the survey was greater than 30%.

Summaries of materials from the community workshop, open houses, and community survey are included in this appendix.

Community Workshop Results

Top "Things that Make Emerald Isle a Great Place to Live"				
Clean water	Green natural areas	Low population density	Controlled growth and development	Family-oriented life-style and pace
Clean beaches and water	Emerald Isle, a family beach	Limited commercial development, mainly on Emerald Drive	Green aesthetics and natural, native vegetation	Beautiful, sandy beaches
Keeping vegetation	Dune protection	Limited building height	Small town, country, family, and safe atmosphere	Clean drinking water
Keep it small, low rise	Beauty and vision of original development	Maritime forest and native vegetation	Maintain ocean/sound water quality	Discourage commercialization
Small town atmosphere, family	Bike paths and walkways	No 4-lane highway	Maintain building height at 40 feet	Maintain present ratio of development for commercialization, residential, and family
Contained commercial areas	No high rise buildings	Clean ocean water	Limited commercialism, local owned as opposed to chains	Balance between development and environment
Low density	Low noise and light pollution	No neon, flashy lights	Maintain police/EMS	Preserve owners' rights to reasonable use and development of their properties
Private parking on ocean front and sound	No zoning change	Family-oriented beach	Keep commercial district in center of town	No more commercialization
	Sound and ocean water quality			Natural setting as a barrier island

Top “Things to Improve”				
enforcement of vegetation ordinances, including paving limits (improve)	support controlled commercial growth	limit multi-family housing	3rd bridge, middle of island	reasonable consideration of environmental impact (sustainable development)
third bridge built in Pine Knoll Shores	increase bike and walking trails	eliminate multi-use zoning	enforce lease and pooper law, especially on beach	keep commercial in current location
moratorium on commercial buildings (that) are in use	improve drinking water quality	garbage cans off street	access from CG Rd to 58 during tourist season (traffic in bottle neck)	better drinking water
enforcement of zoning laws (improve)	plant native trees and (place) benches Emerald Drive	discourage chain stores	balanced growth to be fostered	flood control
moratorium on building and septic permits in areas with flooding problems until solved by SWM (stormwater management) system	enforce existing drainage regulations	establish architectural review board	improve drinking water quality	trash!! (more receptacles, better clean up of beach, no trash in surf or on properties)
eliminate beach driving	provide garbage pickup from house not road	install trees and walks on 58	better sound access and facilities	limit multi-family developments
better architectural zoning	retain 45% undeveloped lot (septic and storage areas considered developed) (K&L combined)	create new ordinance to effectively control new growth	increase vegetation and trees	owner property rights
more public boat access on sound	left turn (lane) for turning traffic	build a ball field	sidewalks and bike paths	more restaurants (better choices)

Written Comments from Thursday, 11/12/03 and Saturday, 11/15/03 Land Use Plan Open Houses

General Comments

Who pays?

What about people who rent their property?

Opposed to changing anything around CG Rd that will increase traffic

Very opposed to sale of Emerald Isle Woods. Can this purchase be reversed? Why has CBG written to Gov. Easley to initiate change in its status?

Must provide parking as required by Corps of Engineers with respect to the 50-year beach renourishment plan.

Don't make comprehensive stormwater plan any more restrictive than federal and state law.

Will residents have free access?

Public Access

Develop sound access at El Woods for canoes/kayaks

How much (access)? Who will pay?

State has precedence over town re: piers. Why pay for review (pier length) that is not needed?

Future Land Use Map

Recommend map alt. 3

Support map alt. 3; low density most important

Support map alt. 3; low rise development

Support map alt. 3

Against maps 1 and 2

Strongly favor map alt. 3

Wouldn't it make sense to limit expanding commercial development until stores in Emerald Plantation fully occupied?

Adding more business, higher density area to area coming off bridge will create major traffic problems. Every day will look like the traffic problems when the beach music festival let out and traffic was at a standstill.

A resort with a 4-star restaurant would be wonderful.

Opposed to resort center. Don't need another Myrtle Beach or Atlantic Beach. Keep it a family beach.

Lets keep it beautiful and simple

Small Town Atmosphere

Rezone CG Rd to R-2

Support R-2 zoning for CG Rd

No Myrtle Beach, no high rise

No wide roads or bridge
3 story max – 50' limit including roof
Maintain low density; don't use economic feasibility as excuse to increase density
Reclassify Oakland Hills subdivision from RMH to R-2; currently s-f or duplex
Do not need to identify residential areas as Resort Activity Center; hotel ok, but not convention center
No high rise hotel, activity center, resort; this is family beach; don't need more roads, access, etc; support present situation, population, and plans; believe majority of residents agree with this
No increase in building height
Keep commercial development to minimum
Change zoning to prohibit water tower-like structures from being built in residential areas
Add more bike and walking paths
Very interested in seeing quick development of Emerald Woods Park, even if funds other than taxes used. How could private citizens raise funds for this purpose?
What does mixed use development mean? What is included in mixed use and how much?
Convention center complex is not small town atmosphere
Resort activity center will only add to problems in Emerald Isle; not conducive to small town atmosphere
Please – architectural uniformity to all commercial development preferably coastal seaport style (ditto)
Opposed to resort activity center – location high traffic area, safety issues
What is definition of resort activity – high density development?
What would center give us that current commercial zoning isn't?
Opposed to resort hotel complexes – inconsistent with small town atmosphere
Opposed to resort activity area in ...Ocean Crest (ditto)
100% opposed to resort activities center and complexes
Public needs to be informed about the plan
Resort center not mentioned in community workshop – no big development – family beach – small town, etc
No resort center; resort center no way
Resort activity center does not agree with family beach image – opposed to this
We left NJ because of a similar situation. We prefer to live in a quiet, family, beach resort. Please don't do this. (ditto)
Small town atmosphere should be a real priority.
Traffic at CG Rd and Hwy 58 is already unacceptable. No more development needed there. (ditto)
Best development practices should not include resort development (ditto)

No resort development – single-family homes only. Lets fill newly developed strip stores before building more commercial areas.

More stores means more existing stores will find it difficult to stay in business. No to resort.

What about a town that has no housing for people of many income levels? ie retirees, young marrieds – need affordable housing for a vibrant town.

Columbia Square is zoned RMH – it should be R-2.

Keep commercial building heights to 3 stories.

Preserve the Gateway – keep paper Crew (right-of-way) between bridge and CG Rd along NC 58 for buffer.

Remove motel-hotel zoning from residential areas.

Town should consider incentives for filling vacant storefronts before allowing more commercial building.

Natural and Manmade Hazards

Bogue Field should realign landing field for reduction of noise and accident prevention

Emerald Isle is safe from planes; pilots will take troubled planes over water; never been civilian death from Harrier crash

Very concerned about noise (Bogue Field). Can they change flight path?

Preserving the beaches most important issue the town has; without good, stable beaches, have nothing

Protect recreational beach with good quality sand in future projects

Continue to require vegetated buffer along Bogue Sound to prevent erosion and keep sound clean

Continue prohibition of swimming pools in ocean erodible areas

When piping plover takes precedence over an eroding channel, I go for the channel. Ditto the noise from Bogue Field. They need to train – live with it.

Years ago Bogue commander stated that EI did not need to be impacted. Keep the “Sound of Freedom” – learn to live with it

We came after them – knew they were here & still bought our home. Let them be.

What about beach renourishment scheduled to minimize impact on tax base? Loss of property means loss of tax dollars.

Work with Cheery Point to minimize EI encroachment on Bogue Field. The pilots need to be able to fly their missions.

Bogue Field was here first. Live with it!

Verify noise data from Bogue Field over residential areas (I believe that they've offered to do some demo fly-overs)

The “sound of freedom” must prevail
Work with Cherry Point – they and we can do it.
The beach is the most important issue this town faces. It needs to be
nourished and protected. Ditto for the Inlet.

Land Use Compatibility

Can we require existing developments to restrict impervious surfaces to
25%?
Encourage replanting of “natural vegetation” and require minimum
vegetation removal on lots

Infrastructure Carrying Capacity

Existing development and existing structures should utilize “best
management practices” to manage stormwater
NC 58 overpasses or underpasses should be constructed as walking or
bicycling “country style” bridge
Sewers (septic tanks) should be inspected every 5 years
New bridge in middle island
Need 3 lanes through EI
Don’t 5-lane Emerald Drive; if 2nd bridge, put it at Indian Beach
Yes to mid island bridge (dittos); no to additional lanes on existing bridge
and NC 58
Yes to sidewalks in front of all commercial developments and paid for by
developers
No sewers (dittos)
Central sewer will lead to high rises
If package plants permitted (seems wise where septic tank does not work)
should they be made compatible (with others) in same vicinity
Water quality (discharge?) should be monitored by reputable, registered,
EPA approved business
There are often odors surrounding the package plants
Restrict Emerald Drive to 3 lanes (several dittos)
No widening of Langston Bridge; if 2nd bridge built, put it in middle of the
island
Maintain current septic tank policies in place
New Hanover studies show septics almost never cause pollution problems;
small treatment plants had some problems, but large citywide systems did
more environmental damage in one spill than residential systems did in
lifetime. Don’t risk fish kills and other problems from central sewer system.
Add conduits from Deer Horn Dunes to Emerald Woods to alleviate
flooding
New exit from Post Office parking lot, out back side routing traffic one way
toward ocean, then east and back to Emerald Drive (add new traffic
light?)

Protecting water quality = protecting our investments. Keep stormwater off beach and (keep) our beaches open. Clean up failing package plant at Emerald Plantation.

Keep stormwater off beaches and redirect to Emerald Woods area.

Implement stormwater runoff lagoons in Emerald Woods Park as soon as possible for prompt relief of stormwater flooding problems along CG Rd.

Maybe a shuttle system between beach, sound, and ocean interfacing with bike/hike paths could alleviate parking access points to sound and ocean.

Water Quality

Clean up Town Creek – contaminants going into Bogue Sound on each end

Town does not have staffing for septic tank program

Keep town out of septic business

Do start septic program following lead of Dare County

Thought water quality was ok

What is economic benefit to Town of improving Piney Creek?

Piney Creek flows to sound; people on soundside want clean water

Water quality needs to be addressed – runoff has been and continues to be a problem

Town of Emerald Isle

Department of Planning and Inspections

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MEMORANDUM

DATE: January 13, 2004

TO: Frank A. Rush, Jr., Town Manager

FROM: Kevin B. Reed, AICP, Director of Planning and Inspections

SUBJECT: Land Use Plan Survey Results

As you know, we have received the tabulated results from the Land Use Plan survey. I have attempted to place the information in an easy to read format. Below, you will find a list of all of the questions asked on the survey, except for question #51. I have placed in bold text next to each response in the survey, the number of respondents who selected that answer and what percentage the number represents. I rounded the percentages to the nearest whole figure; therefore, in some instances, the percentages will not add up to 100%. You will also note that after a number of questions there is an additional potential answer titled "missing". When a respondent answered a question with more than one answer or failed to answer the questions, then the answer was coded as missing. There are some questions that contain a tabulation for the response "refused". Also, attached is a list of all of the responses/comments relative to question #51.

Property Ownership

1. You received this survey because you own property in the Town of Emerald Isle. What type of property do you own? (Circle all that apply)

- A. Single family house or duplex **1,583 (59%)**
- B. Town home or condominium **310 (11%)**
- C. Apartment(s) **3 (.1%)**
- D. Mobile home or manufactured home **290 (11%)**
- E. Business/commercial property **37 (1%)**
- F. Vacant lot or tract **190 (7%)**
- G. Residential rental property **261 (10%)**
- H. Commercial rental property **16 (<1%)**
- I. Other _____

2. How long have you owned property in Emerald Isle?

- A. 1 to 5 years **603 (25%)**
- B. 5 to 10 years **528 (22%)**
- C. 10 to 20 years **728 (31%)**
- D. More than 20 years **507 (21%)**

3. Which statement best describes where you live?

- A. I live in the Town of Emerald Isle and it is my permanent residence **647 (27%)**
 - B. I maintain a permanent residence elsewhere but I own rental property in Emerald Isle **405 (17%)**
 - C. I maintain a permanent residence elsewhere but own a vacation home in Emerald Isle **1,190 (50%)**
 - D. Other _____
- Missing 77 (4%)**

4. If you have a residence in Emerald Isle, where on the island is it?

- A. Eastern area **316 (13%)**
 - B. Central area **997 (42%)**
 - C. Western along Coast Guard Rd. **691 (29%)**
 - D. Not applicable **270 (11%)**
- Missing 102 (4%)**

5. If you have a residence in Emerald Isle, how long have you lived here?

- A. 1 to 5 years **381 (16%)**
 - B. 5 to 10 years **299 (13%)**
 - C. 10 to 20 years **342 (14%)**
 - D. More than 20 years **177 (7%)**
 - E. Not applicable **968 (41%)**
- Missing 209 (9%)**

6. If you have a residence in Emerald Isle, it is served by:

- A. A package sewage treatment plant **174 (7%)**
 - B. Individual septic tanks **1,653 (70%)**
 - C. Shared septic tank **106 (4%)**
 - D. Do not know **96 (4%)**
 - E. Not applicable **246 (10%)**
- Missing 101 (4%)**

Land Use & Development

7. Thinking back over the last five years, would you say that the overall quality of life in Emerald Isle has:

- A. Gotten Better **747 (31%)**
 - B. Gotten Worse **369 (16%)**
 - C. Stayed about the same **1,168 (49%)**
- Missing 87 (4%)**

8. All things considered, how would you rate the overall quality of life in Emerald Isle?
Would you say that it is:

- A. A great place to live **829 (35%)**
- B. It is better than most places **955 (40%)**
- C. It is about the same as most places **236 (10%)**
- D. There are some major problems but things are getting better **137 (6%)**
- E. There are some major problems and things seem to be getting worse **112 (5%)**
- Missing 104 (4%)**

9. Emerald Isle should maintain its small town character and charm and protect its family oriented atmosphere.

- A. Strongly Agree **1,818 (77%)**
- B. Agree **459 (20%)**
- C. Disagree **48 (2%)**
- D. Strongly disagree **11 (<1%)**
- E. Do not know **24 (1%)**
- Missing 16 (1%)**

10. Emerald Isle should strive to create a commercial district that is pedestrian friendly, aesthetically pleasing, and fosters a sense of community.

- A. Strongly Agree **913 (38%)**
- B. Agree **910 (38%)**
- C. Disagree **251 (11%)**
- D. Strongly disagree **161 (7%)**
- E. Do not know **100 (4%)**
- Missing 41 (2%)**

11. Emerald Isle should change its zoning and allow combined commercial and residential uses such as apartments over businesses.

- A. Strongly Agree **92 (4%)**
- B. Agree **300 (13%)**
- C. Disagree **773 (33%)**
- D. Strongly disagree **906 (38%)**
- E. Do not know **276 (12%)**
- Missing 29 (1%)**

12. New businesses should be located in existing commercial zones.

- A. Strongly Agree **1,203 (51%)**
- B. Agree **959 (40%)**
- C. Disagree **92 (4%)**
- D. Strongly disagree **13 (1%)**
- E. Do not know **87 (4%)**
- Missing 22 (1%)**

13 Emerald Isle should restrict signage, lighting, and noise of businesses.

A. Strongly Agree **1,375 (58%)**

B. Agree **805 (34%)**

C. Disagree **95 (4%)**

D. Strongly disagree **21 (1%)**

E. Do not know **62 (3%)**

Missing 18 (1%)

14. Buildings taller than three stories (about 40 feet) should be allowed in Emerald Isle's residential areas.

A. Strongly Agree **54 (2%)**

B. Agree **149 (6%)**

C. Disagree **663 (28%)**

D. Strongly disagree **1,434 (60%)**

E. Do not know **59 (2%)**

Missing 17 (1%)

15. Town officials do a good job enforcing zoning, subdivision, and flood plain regulations and protecting vegetation and dunes.

A. Strongly Agree **212 (9%)**

B. Agree **1,175 (49%)**

C. Disagree **335 (14%)**

D. Strongly disagree **121 (5%)**

E. Do not know **502 (21%)**

Missing 31 (1%)

Adequacy of Town Infrastructure

16. Emerald Isle should not allow development along Emerald Drive (Highway 58) that reduces its ability to carry traffic.

A. Strongly Agree **1,257 (53%)**

B. Agree **777 (33%)**

C. Disagree **166 (7%)**

D. Strongly disagree **42 (2%)**

E. Do not know **106 (4%)**

Missing 28 (1%)

17. Emerald Isle should improve traffic flow to accommodate a growing population.

A. Strongly Agree **704 (30%)**

B. Agree **1,040 (44%)**

C. Disagree **371 (16%)**

D. Strongly disagree **135 (6%)**

E. Do not know **93 (4%)**

Missing 33 (1%)

18. The bridge and roads are adequate for leaving the Island during an emergency such as a storm.

A. Strongly Agree **286 (12%)**

B. Agree **1,065 (45%)**

C. Disagree **462 (20%)**

D. Strongly disagree **202 (8%)**

E. Do not know **340 (14%)**

Missing 21 (1%)

19. Emerald Isle should construct walkways, bike paths, and greenways.

A. Strongly Agree **788 (33%)**

B. Agree **1,016 (43%)**

C. Disagree **323 (14%)**

D. Strongly disagree **107 (4%)**

E. Do not know **121 (5%)**

Missing 21 (1%)

20. In the next five years, which project would you MOST like to see funded? (Circle one answer only)

A. An expansion of Emerald Drive (Highway 58) to 3 lanes by adding a center-turning lane **737 (31%)**

B. An expansion of Emerald Drive (Highway 58) to 4 lanes **222 (9%)**

C. Construction of a new bridge near the middle of Bogue Banks **690 (30%)**

D. Making Langston Bridge 4 lanes **129 (5%)**

E. Building an alternative route through downtown such as extending Reed Drive **209 (9%)**

F. Other _____ **94 (4%)**

None of the above 137 (6%)

Missing 139 (6%)

21. If local funds are needed for transportation improvements, which source would you MOST prefer?

A. Special assessments on property owners **75 (3%)**

B. Increase in property taxes **191 (8%)**

C. Fees charged to developers of new buildings **1,080 (45%)**

D. These things should not be done if it means new taxes **891 (37%)**

Missing 137 (6%)

22. Emerald Isle should do more to encourage businesses to landscape areas around their establishments even if it means less parking.

A. Strongly Agree **481 (20%)**

B. Agree **959 (40%)**

C. Disagree **612 (26%)**

D. Strongly disagree **89 (4%)**

E. Do not know **196 (8%)**

Missing 39 (2%)

23. Trees and other vegetation should be planted in rights-of-way of major streets to enhance the Island's natural beauty.

A. Strongly Agree **651 (27%)**

B. Agree **1,169 (49%)**

C. Disagree **319 (13%)**

D. Strongly disagree **67 (3%)**

E. Do not know **139 (6%)**

Missing 31 (1%)

Public Beach and Sound Access & Recreational Facilities

24. Overall, how would you rate your access to the beach?

A. Excellent **1,021 (43%)**

B. Good **709 (30%)**

C. Satisfactory **356 (15%)**

D. Poor **248 (10%)**

E. No opinion **24 (1%)**

Missing 18 (1%)

25. Overall, how would you rate your access to Bogue Sound?

A. Excellent **374 (16%)**

B. Good **539 (23%)**

C. Satisfactory **503 (21%)**

D. Poor **689 (29%)**

E. No opinion **255 (11%)**

Missing 16 (1%)

26. Additional public parking should be added to improve beach access.

A. Strongly Agree **302 (13%)**

B. Agree **808 (34%)**

C. Disagree **637 (27%)**

D. Strongly disagree **399 (17%)**

E. Do not know **204 (9%)**

Missing 26 (1%)

27. Additional public parking should be added to improve access to Bogue Sound.

A. Strongly Agree **297 (12%)**

B. Agree **872 (37%)**

C. Disagree **530 (22%)**

D. Strongly disagree **257 (11%)**

E. Do not know **390 (16%)**

Missing 30 (1%)

28. We need more public boat access and launching sites on Bogue Sound.

A. Strongly Agree **446 (19%)**

B. Agree **764 (32%)**

C. Disagree **443 (19%)**

D. Strongly disagree **173 (7%)**

E. Do not know **528 (22%)**

Missing 22 (1%)

29. Emerald Isle currently maintains a number of community parks (e.g., Cedar Street and Blue Heron Park) and regional public access sites (e.g., 3rd Street Park and the Ocean Regional Access). How satisfied are you with the *number* of these sites?

A. Extremely satisfied **267 (11%)**

B. Satisfied **1,240 (52%)**

C. Dissatisfied **249 (10%)**

D. Extremely dissatisfied **37 (2%)**

E. No opinion **555 (23%)**

Missing 28 (1%)

30. In the next five years, which project would you like to see funded MOST by Emerald Isle? (Circle one answer only)

A. Another public park with ball fields and other recreational facilities in addition to the new Emerald Woods Park **53 (2%)**

B. Installing safe, convenient, and attractive walkways, bike paths, and greenways throughout the community **1,092 (46%)**

C. Canoe/kayak put-in/take-out facilities on the sound **192 (8%)**

D. Developing another regional public access site with parking, restrooms, and other facilities **187 (8%)**

E. Constructing public parking lots to improve access to the beach and Bogue Sound **267 (11%)**

F. Adding life guards **163 (7%)**

G. Constructing more restrooms and bathhouses at existing public access sites **95 (4%)**

H. Other _____ **107 (5%)**

None of the above 97 (4%)

Missing 123 (5%)

31. When Emerald Isle seeks local funding for community parks and regional access sites, which source would you MOST prefer?

A. Special assessments on property owners **106 (4%)**

B. Increase in property taxes **366 (15%)**

C. Fees charged to developers of new buildings **900 (38%)**

D. These things should not be done if it means new taxes **998 (42%)**

Missing 108 (5%)

32. Town officials should continue to support nourishing the beach to repair erosion.

- A. Strongly Agree **865 (36%)**
- B. Agree **804 (34%)**
- C. Disagree **294 (12%)**
- D. Strongly disagree **282 (12%)**
- E. Do not know **106 (4%)**
- Missing 25 (1%)**

33. Town officials should continue to support the realignment of the Bogue Inlet channel to restore recreation areas and to protect threatened properties.

- A. Strongly Agree **667 (28%)**
- B. Agree **915 (39%)**
- C. Disagree **271 (11%)**
- D. Strongly disagree **197 (8%)**
- E. Do not know **296 (12%)**
- Missing 30 (1%)**

Water Quality & Habitat

34. High quality water in the ocean and sound is a major asset to Emerald Isle property owners

- A. Strongly Agree **1,501 (63%)**
- B. Agree **769 (32%)**
- C. Disagree **28 (1%)**
- D. Strongly disagree **6 (<1%)**
- E. Do not know **53 (2%)**
- Missing 19 (1%)**

35. How would you rate the water quality of Bogue Sound?

- A. Extremely good **195 (8%)**
- B. Good **1,396 (59%)**
- C. Bad **208 (9%)**
- D. Extremely bad **23 (1%)**
- E. Do not know **532 (22%)**
- Missing 22 (1%)**

36. Piney Creek (Archer's Creek) is closed to shellfishing due to poor water quality. Should Town officials do more than is required by law to restore water quality in Piney Creek

(Archer Creek)?

- A. Strongly Agree **363 (15%)**
- B. Agree **837 (35%)**
- C. Disagree **364 (15%)**
- D. Strongly disagree **105 (4%)**
- E. Do not know **667 (28%)**

Missing 40 (2%)

37. Emerald Isle should protect any significant remnants of maritime forest on the island.

A. Strongly Agree **1,092 (46%)**

B. Agree **956 (40%)**

C. Disagree **124 (5%)**

D. Strongly disagree **24 (1%)**

E. Do not know **149 (6%)**

Missing 31 (1%)

38. When property owners develop and build on their lots, they should be required to protect native vegetation.

A. Strongly Agree **876 (37%)**

B. Agree **969 (41%)**

C. Disagree **313 (13%)**

D. Strongly disagree **77 (3%)**

E. Do not know **109 (5%)**

Missing 32 (1%)

39. Emerald Isle should make an effort to inform homeowners how to properly maintain their septic tanks to help ensure that they work properly.

A. Strongly Agree **951 (40%)**

B. Agree **1,120 (47%)**

C. Disagree **170 (7%)**

D. Strongly disagree **40 (2%)**

E. Do not know **70 (3%)**

Missing 25 (1%)

40. One option to improve water quality is to replace septic tanks and package sewage plants with a central sewer system. However, this will cost homeowners and businesses money and allow denser development. How important is it for Emerald Isle to start planning for a central sewer system?

A. Extremely important **330 (14%)**

B. Somewhat important **327 (14%)**

C. Important **460 (19%)**

D. Not important **1,014 (43%)**

E. Do not know/not important **211 (9%)**

Missing 34 (1%)

41. Another option to improve water quality is to remove stormwater pipes on the beach and sound. However, this will come at some cost to homeowners and businesses. How important is it for Emerald Isle to undertake these stormwater improvements?

A. Extremely important **310 (13%)**

B. Somewhat important **377 (16%)**

C. Important **593 (25%)**

D. Not important **625 (26%)**

E. Do not know/not important **426 (18%)**
Missing 45 (2%)

42. Another option to improve water quality is to contain rainwater runoff from new development. However, the percentage of lots covered by buildings, parking, and other impervious surfaces may be reduced and more expensive construction may be required. How important is it for Emerald Isle to reduce rainwater runoff from new development?

- A. Extremely important **724 (30%)**
 - B. Somewhat important **392 (17%)**
 - C. Important **629 (26%)**
 - D. Not important **293 (12%)**
 - E. Do not know/not important **297 (12%)**
- Missing 41 (2%)**

43. In the next five years, which of the following projects would you MOST like to see funded by Emerald Isle? (Circle one answer only)

- A. Construct a central sewer system **461 (19%)**
- B. Undertake stormwater management improvements on existing properties to reduce flooding and improve water quality. **970 (41%)**
- C. Remove any stormwater pipes discharging to the beach and the sound **535 (22%)**
- D. Other _____ **55 (3%)**

Don't Know 40 (2%)

None of the Above 85 (4%)

Missing 230 (10%)

44. When the Town of Emerald Isle seeks funding for expensive public projects to improve water quality, which of the following revenue sources would you MOST prefer is used?

- A. Special assessments on property owners **114 (5%)**
- B. Increase in property taxes **196 (8%)**
- C. Adoption of a stormwater utility fee **372 (16%)**
- D. Fees charged to developers of new buildings **918 (39%)**
- E. These things should not be done if it means new taxes **607 (26%)**

Missing 163 (7%)

45. This survey has presented several options for public projects designed to improve the quality of life in Emerald Isle. If Emerald Isle were to seek funding for only one public project, which area is MOST important?

- A. Transportation **573 (24%)**
- B. Community parks **162 (7%)**
- C. Public access **282 (12%)**
- D. Water quality **1,069 (45%)**
- E. Other _____ **132 (5%)**

None of the Above 43 (2%)

Missing 115 (5%)

Demographics

46. You are:

A. Male **1,517 (64%)**

B. Female **734 (31%)**

Missing 115 (5%)

Refused (<1%)

47. Are you retired?

A. Yes **1,057 (44%)**

B. No **1,267 (53%)**

Missing 44 (2%)

Refused 8 (<1%)

48. Your occupation is best described as:

A. Small business owner/operator **351 (15%)**

B. Sales **113 (5%)**

C. Government **125 (5%)**

D. Education **127 (5%)**

E. Professional (e.g., lawyer, doctor, accountant, financial services, etc.) **587 (25%)**

F. Personal services **27 (1%)**

G. Retired **838 (35%)**

H. Other **145 (6%)**

Missing 56 (2%)

49. Which best describes your age?

A. 35 or below **43 (2%)**

B. 36 – 45 **266 (11%)**

C. 46 – 55 **562 (24%)**

D. 56 – 65 **744 (31%)**

E. Over 65 **720 (30%)**

Missing 31 (1%)

Refused 10 (<1%)

50. Which best describes your total annual household income?

A. Under \$35,000 **163 (7%)**

B. Between \$35,000 and \$50,000 **266 (11%)**

C. Between \$50,000 and \$75,000 **383 (16%)**

D. Between \$75,000 and \$100,000 **420 (18%)**

E. Over \$100,000 **847 (36%)**

Missing 227 (10%)

Refused 46 (2%)

Let me know if you have any questions or comments regarding this foregoing information.