

Coastal Management FOUNDATION DOCUMENT

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12-1 INTRODUCTION

Santa Rosa County is located in northwest Florida bordering the Gulf of Mexico and Santa Rosa Sound. The County is bounded on the west by Escambia County, on the east by Santa Rosa-Okaloosa County and on the north by Escambia County, Alabama.

Because the County has a rich diversity of unique coastal resources, these resources are highly susceptible to human degradation, therefore to preserve these resources regulations are imperative to maintaining the balance between human activities (rapid growth) and protecting the County's natural and coastal resources now and for future generations. It is this realization that lead Florida to its present Growth Management Laws; such as Chapter 9J-5, Florida Administrative Code (F.A.C.) and Chapter 163, Florida Statutes (F.S.).

The main purpose of the Coastal Management Element is to plan for development and, where appropriate, restrict development activities where such activities would damage or destroy coastal resources in addition to protecting human life and property from the destruction of natural disasters (i.e. tropical storms and hurricanes).

The Coastal Planning Area identified for Santa Rosa County encompasses all oceanic and estuarine water bodies and all adjacent lands where development activities would impact their integrity or quality. Map 11-1 identifies the Santa Rosa County coastal planning area, which includes all land generally south and west of Quintette Road, south of US Hwy. 90 and west of SR 87, bounded by the Escambia River, Escambia Bay to the west and the Gulf of Mexico to the south. Santa Rosa Island (Navarre Beach) is included in the Coastal Planning Area. Within the coastal planning area two detailed areas have also been identified:

1. Hurricane Vulnerability Zone, delineated by the *Northwest Florida Hurricane Evacuation Restudy* as requiring evacuation for any category hurricane; and
2. Coastal High Hazard Area, ~~delineated as the evacuation zone for a category 1 hurricane by the same study.~~ defined in Chapter 163.3178(1)(h), F.S. as all lands within the area, regardless of elevation, from the mean low water line to the inland extent of the category 1 storm surge area. It is depicted by, but not limited to, the areas illustrated in the most current SLOSH Storm Surge Atlas.

A. Organization of the Element

This element is divided into four sections: the Introduction, Terms and Concepts, Existing Regulatory Framework, and Data and Analysis. The Introduction provides an overview of the county in relationship to its location, history and its natural systems. Terms and Concepts define the terms used throughout most of this document. The Existing Regulatory Framework describes the current federal, state, regional and county regulations. The Data and Analysis Section discusses the county's coastal resources and includes information on land use and effects of land uses on natural resources, water quality, and hurricane evacuation planning.

B. Relationship of other Elements of the Comprehensive Plan

The *Future Land Use Element* and its accompanying Future Land Use Map provides the blueprint and growth management strategies for managing the County's future development. The Coastal Management Element provides the foundation and the detailed policies necessary for the county's coastal resources. It also directs development standards necessary to conserving the county's unique natural resources while allowing development to co-exist in a compatible and sustainable way.

The *Parks and Recreation Element* uses the information from the Coastal Management Element to determine which coastal resources are most conducive to recreational uses based on the current and future needs of the county.

The *Infrastructure Element* is directly related to the Coastal Management Element. The impacts of the existing and proposed facilities (drainage, water supply and waste water disposal) on natural systems must be considered during the establishment of the Level of Service (LOS) for water and sewer facilities, facility siting criteria and the overall policies regarding the county's growth-related infrastructure.

The *Transportation Element* deals with the county's moving people and goods in and through Santa Rosa County. Transportation facilities frequently fragment and isolate natural communities, which eventually leads to the destruction of both aesthetic and biological functions of the natural environment. The policies of the Transportation and Coastal Management Element must be mutually supportive to ensure that transportation system design minimizes impacts to the environment.

The *Intergovernmental Coordination Element* provides opportunities to improve the County's collaboration and coordination with other local, state and federal agencies. These include agencies involved in coastal management issues.

12-2 TERMS AND CONCEPTS

Terms included in Appendix B of the Foundation Document are applicable to this element and are identified and described by the Florida Department of Community Affairs, in Rule 9J-5 of the Florida Administrative Code (F.A.C.) and in Section 163.3164, Florida Statutes (F.S.). All other terms and concepts used in this element are consistent with the intent of Rule 9J-5 and Chapter 163, F.S.

Areas of Critical Erosion: Critical erosion area is a segment of the shoreline where natural processes or human activity have caused or contributed to erosion and recession of the beach or dune system to such a degree that upland development, recreational interests, wildlife habitat, or important cultural resources are threatened or lost. Critical erosion areas may also include peripheral segments or gaps between identified critical erosion areas, which, although they may be stable or slightly erosional now, their inclusion is necessary for continuity of management of the coastal system or for the design integrity of adjacent beach management projects. (DEP)

Bays and Estuaries: Inlets of the ocean that extend into the land area. Saline and coastal plankton estuaries lie in the subtidal and intertidal area of the ocean. Large vegetation species have not adapted to this area; however, this area provides habitat and food sources for fish, invertebrates, wading birds, and waterfowl. Plankton, an organic species that drifts and floats with the tides, provides food for these species. (Water Resources Atlas of Florida, 1984)

Beach: Beach as used in the Coastal Management Element requirements is limited to oceanic and estuarine shorelines.

Biological Diversity: The ability to sustain the State's rarest animals, plants and natural communities well into the future through preservation of minimum habitat areas necessary to sustain identified species not presently being protected by any other conservation technique. (FGFWFC)

Clustering: The grouping together of structures and infrastructure on a portion of a development site.

Coastal Construction Control Line (CCCL): Established by Florida Department of Environmental Protection (FDEP) by Chapter 161.053, F.S., as being the County's line of regulatory prohibition (established boundary in front of which no construction is allowed without permits from DEP), or Dune Stabilization Setback Line (DSSL).

Coastal or Shore Protection Structures: Shore-hardening structures, such as seawalls, bulkheads, revetments, rubble mound structures, groins, breakwaters, and aggregates of materials other than natural beach sand used for beach or shore protection and other structures which are intended to prevent erosion or protect other structures from wave and hydrodynamic forces including beach and dune restoration.

Conservation Corridors: These are less extensive linear protected areas that serve as biological connecting corridors and in many cases also provide outdoor, resource-based recreational opportunities. (DEP)

Ecosystems Management: Considers the overall ecological perspective that provides the opportunity to support the conservation and preservation of regional ecological systems. These management concepts encourage innovative, cooperative solutions to the environmental problems through the involvement and cooperation of all Florida citizens, not just the government. (DEP)

Ecosystems Management Areas (EMA): Defined by drainage basins or watersheds that are hydrologically and ecologically connected and are of environmental significance. (DEP)

Endangered Species: A species, subspecies or isolated population which is so few or depleted in number or so restricted in range or habitat due to any man-made or natural factors that it is in imminent danger of extinction or extirpation from the state or which may attain such a status within the immediate future. (FWC)

Essential Habitat: Habitat which if lost would result in elimination of the Endangered and Threatened Species and Species of Special Concern from the area in question. Essential Habitat typically provides functions for the Endangered and Threatened Species during restricted portions of that species life cycle. Habitat includes the place or type of site where a species naturally or normally nests, feeds, resides, or migrates, including for example, characteristic topography, soils and vegetative cover.

Estuary: Areas of the coast where mainland, barrier islands, or vegetation partially enclose a water body made brackish by the mixing of salt and fresh waters and which contain marine plants and animals adjusted to the changing water conditions in these areas" (Water Resources Atlas of Florida, 1984).

Floodplains: Areas inundated during a 100-year flood event or identified by the National Flood Insurance Program as an A Zone or V Zone on Flood Insurance Rate Maps or Flood Hazard Boundary Maps.

Greenway: A corridor of protected open space that is managed for conservation and/or recreation. The common characteristic of greenways is that they all go somewhere. Greenways follow natural land or water features, like ridges or rivers, or human landscape features like abandoned railroad corridors or canals. They link natural reserves, parks, cultural and historic sites with each other and, in some cases, with populated areas. Greenways not only protect environmentally sensitive lands and wildlife, but can also provide people with access to outdoor recreation and enjoyment close to home. (DEP)

Habitat: Environmental characteristics conducive to survival of certain plants and animals based on favorable soil types, topography, hydrology, mineral content and vegetative communities.

Listed Species: Animals, plants, and/or insects identified as Endangered and Threatened and Species of Special Concern by the United States Environmental Protection Agency, the Florida Fish and Wildlife Conservation Commission (FWC) and the Florida Department of Agriculture (FDA).

Pensacola Bay System: Includes five interconnected estuarine embayments, including Escambia Bay, Pensacola Bay (Escambia County), Blackwater Bay, East Bay, and Santa Rosa Sound, and three major river systems: the Escambia, Blackwater, and Yellow rivers. The system also includes smaller tributaries of these embayments and rivers, as well as its entire watershed.

Regional Biological Hot Spots: An identifier that protects the biological diversity of areas where large numbers of 52 selected species co-occur, areas that support rare plant and wildlife communities, county boundaries and conservation land boundaries and coastal areas that support key components of biological diversity. (FWC)

Species of Special Concern: A species, ~~subspecies,~~ or ~~isolated~~ population which warrants special protection, recognition, or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance, or substantial human exploitation which, in the foreseeable future, may result in its becoming a threatened species; ~~may already meet certain criteria for designation as a threatened species but for which conclusive data are limited or lacking; may occupy such an unusually vital and essential ecological niche that should it decline significantly in numbers or distribution, other species would be adversely affected to a significant degree; or has not sufficiently recovered from past population depletion.~~ (FWC)

Strategic Habitat Conservation Areas: Protects some of the state's rarest animals, plants and natural communities with a land base necessary to sustain populations now and into the future. The designated areas at a minimum must contain 30 species of wildlife inadequately protected by the current system of land conservation, contain high quality sandhill sites, scrub sites, pine rock lands sites, tropical hardwood hammocks, bat maternity caves and winter roost caves, wetlands important to the long term survival of 105 globally rare species of plants. (FWC)

Suitability: The degree to which the existing characteristics and limitations of land and water are compatible with a proposed use or development. (FWC)

Threatened Species: A species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is declining in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable future. (FWC)

12-3 EXISTING REGULATORY FRAMEWORK

A. Federal

The Coastal Zone Management Act (CZMA) of 1972 establishes a cooperative State and Federal program to manage coastal zones in the United States. Implementation of the CZMA may be delegated to individual states that adopt programs that meet the criteria of the federal program. The Florida Department of Community Affairs administers Florida's approved Coastal Management Program, where grant in aid applications are available. Typical projects that have been funded include studies of local fishery resources and the installation of a maintenance dredging regulatory program for deep-water ports.

The Coastal Barrier Resources Act of 1982 (COBRA) prohibits new federal expenditures for new or expanded developments on undeveloped coastal barriers that are included within the Coastal Barrier Resource System (CBRS). According to the U.S. Fish and Wildlife Service (USFWS), the following areas in Santa Rosa County are protected by the COBRA Act: Santa Rosa Island, Tom King, Town Point, Garcon Point, and Basin Bayou .

The Marine Turtle Act (1991) strengthened marine turtle protection measures by requiring states to consider turtle protection in all permit applications for coastal construction and excavation.

The Endangered Species Act (ESA), adopted by congress in 1973, establishes criteria for the listing of plants and animals as threatened or endangered. The ESA also provides a permitting program which helps ensure that ecosystems containing listed species are conserved during development activities

The Clean Water Act establishes a permitting program and criteria for the discharge of pollutants into the County's waters, including minimum water quality standards. The Act focuses primarily on the surface waters and provides the greatest protection for wetlands of any federal legislation.

The Rivers and Harbor Act of 1899 regulates all the activities affecting the navigable waters of the United States, including the approval of dredging and filling activities in the wetlands. This regulation affects the construction of bridges, roads, wharves and just about every activity that could be interpreted as affecting navigable waters. The primary enforcement agency is the U.S. Army Corps of Engineers, which may solicit comments from agencies during its review of activities that fall under this Act.

The National Flood Insurance Act of 1968 establishes the National Flood Insurance Program (NFIP), which makes Federally subsidized flood insurance available in communities which adopt and adequately enforce floodplain management ordinances that meet NFIP requirements. The Act also required that the Federal Emergency Management Agency establish flood risk zones in all flood prone areas.

The Migratory Bird Treaty Act of 1998, as amended, 16 United States Code, sections 703 et seq., under Florida law states that it is unlawful to disturb, remove, or interfere with, in any manner or by any means, a nest, any part thereof, or its environment, inhabited or used by, any migratory bird or birds in danger of extinction, threatened, or otherwise protected by Federal or Florida law. It is likewise unlawful, except as permitted by regulation, or by any other means or any manner to pursue, hunt, capture, kill, or possess any of the aforementioned birds, their eggs, or their nests.

B. State

The State's Local Government Comprehensive Planning and Land Development Regulation Act requires that all the Counties and Cities in the state prepare and adopt a Comprehensive Plan containing mandatory elements that address growth management issues including a Conservation Element.

The minimum criteria for local government Comprehensive Plans to follow is established in the Florida Administrative Code (F.A.C.), Rule 9J-5. This rule is used by the Department of Community Affairs (DCA) to determine whether such plans fulfill the requirements of the State's Growth Management Act. This rule prescribes the minimum requirements for each element of the Comprehensive Plan.

Florida Coastal Management Act, passed in 1978, did not include new regulations but requested better coordination and enforcement of existing rules. The State of Florida required three years to develop a coastal management program consistent with both the 1978 (Chapter 380, Part II, Florida Statutes) Florida Coastal Management Act and the Federal Coastal Zone Management Act of 1972. The State of Florida has emphasized more effective coordination of existing regulations related to the coastal zone rather than the establishment of new regulations (State of Florida, 1981). The State's federally approved management program was ratified by the National Oceanic and Atmospheric Administration (NOAA) in 1981.

The Florida Coastal Management Program (CMP) is based on 25 statutes that are administered by 16 state agencies. The bulk of the program rests with the Department of Environmental Protection (DEP) and the Department of Community Affairs (DCA). The DCA contains the Office of Federal Coastal Programs.

Florida is one of several coastal states that have attempted to regulate new construction on and immediately adjacent to beaches and dunes. The Coastal Construction Setback Line (C.C.S.L.) was formulated and adopted in 1974 to establish a boundary in front of which no construction or excavation was allowed without a permit from the state. The Coastal Construction Control Line (C.C.C.L.) was developed by using new field data and was renamed accordingly. In any instance of construction seaward of the new C.C.C.L., permits must be obtained from DEP.

Executive Order 81-105 directed state agencies to 1) give high priority to acquisition of coastal barrier properties, 2) limit development subsidies in hazardous coastal barrier areas, and 3) cooperate with local governments in managing growth in these coastal barrier areas. Implementation of the order is based on maps prepared by the DCA. Using these maps as guidelines, each agency will modify its program funding to the degree legally possible for compliance with the intent of the executive order. For purpose of implementation, all coastal barriers will be considered in two categories: 1) those which are traditionally called barrier islands, spits, or peninsula, and 2) those which are exposed mainland beaches, marshes, or mangrove swamps with no other barriers seaward of them. This second group is affected landward only as far as the velocity zone on National Flood Insurance maps or the C.C.C.L., whichever is further inland.

The degree of development includes three subcategories. Undeveloped barriers are those islands, spits, and peninsula that are limited to watercraft or aircraft access, have sparse settlement, and have no publicly subsidized infrastructure. All Coastal Barrier Resource System (CBRS) units are treated as undeveloped for purposes of this order. Mainland coastal barrier areas are considered to be undeveloped if they are not within corporate limits or are in a delimited urban area. Developed barrier areas are islands, spits, and peninsula with at least 70% of their surface area developed as of the DCA inventory of 1983. Also included are appropriate mainland areas within corporate limits. All coastal barrier areas not classified in either of these groups are considered partially developed. State subsidies for all developed barriers will be restricted to the greatest extent possible under existing authority. There will also be restrictions on subsidies for partially developed barriers. Exceptions may be granted if proper management is indicated and safe mitigation can be made. The order will apply to developed barriers only in post disaster situations.

The local Government Comprehensive Planning and Land Development Regulation Act (85-55) contained new coastal protection statutes to be implemented over three years. It established new procedures for determining the Coastal Construction Control Line (C.C.C.L.). It fixed a new 30-year erosion line inside the C.C.C.L., seaward of which, with few exceptions, no new structures will be allowed. The Act also established a new "Coastal Building Zone" for the entire coast in which building requirements for major and minor structures must be met. Comprehensive plans will be implemented by the adoption of appropriate local land development regulations. The final major new provision in the Act is the prohibition against using State funds to construct bridges or causeways to barrier islands not already accessible by bridge or causeway on October 1, 1985.

Numerous State permitting regulations apply to CBRS units. The permitting regulations are administered by several agencies, including the Department of Environmental Protection (DEP) (Division of Beaches and Shores), the Department of Community Affairs (DCA), and the Santa Rosa County Environmental Health Department.

Developments of Regional Impact (DRI) must be reviewed by Regional Planning Councils and the Department of Community Affairs (DCA). The DEP has permitting authority over any discharge of waste into surface or ground water. The Northwest Florida Water Management District (SJRWMD/NWFWMD) has permitting authority for withdrawal, storage, diversion, and consumption of water. Regulation of the taking of living resources from waters within Coastal Barrier Resource System (CBRS) units falls under the jurisdiction of the U.S. Fish and Wildlife Service.

The DEP has jurisdiction over all permitting for dredge and fill activities in submerged lands and wetlands. In general, the DEP's jurisdiction over dredge and fill activities is coincident with that of the U.S. Army Corps of Engineers, although in some cases the DEP may be more stringent. The DEP requires that environmental impacts be considered in any application for a dredge and fill permit. Marinas and boat docks are also permitted through the DEP.

Beach re-nourishment and erosion-control projects can be undertaken through DEP in conjunction with local governments and the Federal Government (S.S. 161.141 through 161.45, F.S.). Florida's support of the CBRS and Executive Order 81-105 tend to discourage such activities in CBRS units.

The State of Florida passed the Outdoor Recreation and Conservation Act, which established a Land Acquisition Trust Fund administered by the Department of Environmental Protection (DEP). This Act also provided for loans and grants to local governments for acquisition of public beach tracts (F.S., Chapter 375). The State may also acquire property for parks through a State Park Trust (F.A.C., Chapter 592).

The Save Our Coast Program was created in September 1981 by a resolution of the Governor and Cabinet to protect representative samples of the State's undeveloped sandy beaches for public recreational use and enjoyment. Functionally, the program is an extension of the State's outdoor recreation land acquisition program established by Chapter 375, Florida Statutes, and is administered under Chapter 16D-10, Florida Administrative Code. The program is funded from revenues obtained from the phased sale of \$275 million in revenue bonds secured by the Land Acquisition Trust Fund. As of December 1992, 27 coastal areas, comprising a total of 73,384 acres and 74 miles of beachfront and shoreline, were acquired at a total expenditure of over \$256.8 million.

The Beach Access Initiative was created in May 1987, as a supplement to the program, to concentrate efforts to acquire smaller beachfront parcels in predominately urban areas. The initiative sets aside 25 percent of the proceeds from future Save our Coast bond sales for the purchase of parcels not to exceed \$250,000. As of December 1992, 5,171 linear feet (32 acres) of saltwater beach access have been acquired or encumbered for acquisition through 46 projects, totaling over \$6.8 million.

The Beach Erosion Control Assistance Program is authorized by Section 161.101, Florida Statutes, to utilize the Beach Management Trust Fund to provide assistance to State and local government agencies for federally and non-federally funded beach restoration, renourishment, erosion control, dune restoration and revegetation, dune walkover construction, parking facilities for public access, project design and engineering studies, shoreline monitoring studies, marine habitat mitigation and inlet sand transfer and inlet management planning. Before an area can qualify for funding, the sponsor must provide permanent public accesses at one-half mile intervals, including adequate public parking. Funds allocated under this program can be utilized to match state or federal grant funds. Some \$140 million have been appropriated by the State for more than 300 beach erosion control projects along Florida's coastline since 1965.

The Artificial Reef Development Program provides financial assistance from state and federal sources to coastal local governments for the development of saltwater artificial reefs. Eligible expenditures include engineering and transportation of reef materials to an approved site. The program is administered under Chapter 16R-9, Florida Administrative Code. Since the program's inception in 1979, over \$4 million in grants have been authorized for more than 120 artificial reef projects. In addition to financial assistance, the program also provides technical assistance to local coastal governments in developing and managing artificial reefs.

The State's Beach and Shore Preservation Regulations including structural requirements, the Coastal Construction Control Line (C.C.C.L.) guidelines, and sea turtle protection are all established in Chapter 161, F.S., and Chapter 62B-33, F.A.C.

The State's Salt Water Fishing License requirements are established in Chapter 370, F.S., and Chapter 16N-35, F.A.C.

Article IV, Section 9, of the Florida Constitution and Chapter 372, F.S., designate the Fish and Wildlife Conservation Commission (FWC) [previously Game and Fresh Water Fish Commission (FGFWFC)] as the agency with the authority to exercise all the non-judicial powers of the state with respect to wild animals and freshwater aquatic life. As part of its total program, the Commission administers wildlife and fish management areas on state, federal and privately owned lands. The fish management program includes maintaining boat ramps, stocking game fish, installing fish attractors, and controlling undesirable aquatic plants. The Commission receives funds for the preservation, restoration and enhancement of Florida's fish and wildlife resources from the Federal government. The Commission also manages a nongame fish and wildlife program funded by the Nongame Wildlife Trust Fund.

The Florida Endangered and Threatened Species Act and the Preservation of Native Flora of Florida Act established criteria for the listing, protection and management of plant and animal species considered to be endangered, threatened or species of special concern.

The Florida Wildlife Code (Chapter 39, F.A.C.) restricts the pursuit, molestation, harm, harassment, capture, or possession of a listed species. The Code establishes a permitting program for such activities, including permits for the "incidental take" (unlawful killing "incidental to" otherwise allowable activities) of individual animals.

The Water Resources Act established state water policy and implementation measures, which include the creation of the five regional Water Management Districts. This Act also mandates the formulation of a state water use plan.

The Surface Water Improvement and Management (SWIM) Act of 1987 requires each of the State's five Water Management Districts to identify those surface waters most in need of restoration or preservation. This Act mandates the development of management plans ("SWIM plans") for each water body so identified, including detailed schedules of implementation. The SWIM program and Save Our Rivers program are administered by the Water Management Districts. Lands may be acquired through these programs and made available for public recreation uses when compatible with the management of the property. The Pensacola Bay System, has been a SWIM project since 1992.

The Florida Scenic and Wild Rivers Program was established by the DEP Executive Board in January 1972 and revised in June 1978. The program is designed to preserve the aesthetic and wilderness qualities of exceptional rivers and streams in the State. The program is similar to the National Wild and Scenic Rivers Program described in the previous section, but it is a separate program.

Sections 258.35-258.46, F.S., the Florida Aquatic Preserve Act of 1975 were intended to set aside state-owned submerged lands having exceptional biological, aesthetic and scientific value as aquatic preserves or sanctuaries forever. Santa Rosa County has one aquatic preserve, the Yellow River Marsh Aquatic Preserve.

C. Regional

The West Florida Regional Planning Council adopted a Strategic Regional Policy Plan in July 1996. The following *Regional Goals* are directly related to the Coastal Management and Conservation Elements:

- Reduce high-density residential development within Coastal High Hazard Areas and restrict the reconstruction of damaged and destroyed structures within Coastal High Hazard Areas.
- Local public facilities shall provide for the sheltering of residents forced to evacuate because of a natural or technological disaster.
- Identify those with special evacuation needs, and have in place planning standards for the evacuation of those residents with special needs as well as the safe transportation and sheltering for these residents.
- Reduce the risk of injury and/or death from the release of chemical hazards at storage facilities and along transportation networks and increase the Region's readiness to respond to and contain a toxic release by improved training and increased funding.
- Protect the surface water resources within the Region.
- Protect beach and dune systems from the undesirable affects of development
- By the year 2000, 50% of eroded beaches and dunes shall be restored and stabilized to reestablish a functioning dune system.
- Protect coastal land and water systems from inappropriate development and human activities determined to be intrusive or damaging to natural resources and/or water quality.
- Protect and manage marine fisheries habitat.
- By the year 2000, restrict all development in all coastal high hazard areas in order to provide adequate evacuation of coastal residents in the event of major storms or hurricanes.
- Continue to protect the Region's functioning natural systems.
- Protect native species in the Region that are on the Florida Game and Fresh Water Fish Commission list of endangered, threatened, and rare species of Florida.

- By the year 2000, public and private lands will be managed and land resources used according to comprehensive, economic and environmental principles, especially critical areas including, but not limited to coastal lands, wetlands, flood plains, margins of estuarine nursery areas, and locally important agricultural lands.
- Protect environmentally, historically, and culturally significant land.

D. Local

The Santa Rosa County Land Development Code includes the following sections, which together require the developer to preserve and protect the County's natural resources:

Article I	Legal	Article VII	Performance Standards
Article II	Administration	Article VIII	Signage
Article III	Definitions	Article IX	Non-Conforming Uses
Article IV	General Provisions	Article X	Floodplain Management
Article V	Concurrency Management	Article XI	Airport Environs
Article VI	Land Use and Zoning Controls	Article XII	Coastal Management/Conservation

12-4 DATA AND ANALYSIS

A. Existing Land Use in the Coastal Planning Area

Existing land use in the Coastal Planning Area is shown in *Map 12-2* (Appendix A) and described in *Table 12-1*.

Table 12-1
Existing Land Use in the Coastal Planning Area
Santa Rosa County

<i>Land Use Category</i>	<i>Acreage</i>	<i>Percentage</i>
Agriculture	13,998	12.91 %
Agriculture Homestead	2,776	2.56 %
Conservation, Recreation and Open Space	1,677	1.55 %
Military	16,878	15.56 %
Institutional	947	0.87 %
Publicly-Owned Land	15,596	14.38 %
Vacant	27,828	25.66 %
Residential	17,055	15.73 %
Single-Family (Low- to Medium-Density)	16,767	
Condominium/Townhouse (Medium- to High-Density)	97	
Multi-Family (Medium- to High-Density)	191	
Mixed Residential/Commercial	37	0.03 %
Office	637	0.59 %
Commercial	793	0.73 %
Commercial Recreation Uses	1,178	1.09 %
Industrial	1,512	1.39 %
Utilities	138	0.13 %
Right-of-Way	6,390	5.89 %
Water	317	0.29 %

Miscellaneous (no property appraiser code, wasteland, etc.)	697	0.64 %
Total	108,454 *	100 %

* *Note: The acreage figures were calculated based on the County GIS database for Property Appraiser Department of Revenue (DOR) land use code boundaries. The County is in the process of cross-checking the DOR codes to validate some discrepancies, because the acreages in some categories as shown in this table should actually be listed in another category. These figures will be updated as soon as the validation process has been completed.*

Source: Santa Rosa County Community Planning, Zoning and Development Division GIS

A.1 Conflicts Among Shoreline Uses

Currently the County has insufficient information available to determine conflicts among shoreline uses. The Santa Rosa Evaluation and Appraisal Report (August 1997) identified uses that were determined to be incompatible with the protection of important resources and/or the public safety in the Navarre Beach coastal area, but did not address all shoreline areas in the county. Without determining the five conditions listed in Section A.3, below, related to identification of water-dependent, related and enhanced uses, the county would not have a basis for deciding on categories of conflicting land use.

As a general statement, for the most part development along shorelines other than on Santa Rosa Island consists of low to medium density residential with occasional low-intensity commercial and recreational uses, some of which are water-dependent or water-related. On Santa Rosa Island (Navarre Beach) the development is primarily medium to high density residential uses interspersed with recreational and low-intensity water-dependent and water-related commercial uses. The Navarre Beach Master Plan 2001 update addresses land uses and recommends type of development most compatible with this area.

A.2 Water-Dependent and Water-Related Land Uses

Water dependent uses are activities which can be carried out only on, in or adjacent to water areas because the use requires access to the water body for: waterborne transportation including ports or marinas, recreation, electrical generating facilities or water supply. Water-related uses are activities that are not directly dependent upon access to a water body, but which provide goods and services that are directly associated with water-dependent or waterway uses. *Table 12-2* details public and privately owned water-dependent uses in unincorporated Santa Rosa County.

Table 12-2
Water-Related or Water-Dependent Land Uses
Unincorporated Santa Rosa County

<i>Name</i>	<i>Description of Facilities</i>	<i>Ownership</i>
Gulf Island National Seashore	National Park	Public
Navarre Beach State Park	State County Park	Public
Navarre Beach Boat Ramp	County Park	Public
Navarre Beach Gulf Side Park	County Park	Public
Bagdad Boat Ramp	Neighborhood Park Boat Ramp	Public
Bal Alex Boat Ramp	Neighborhood Park Boat Ramp and Pier	Public

Table 12-2
Water-Related or Water-Dependent Land Uses
Unincorporated Santa Rosa County

<i>Name</i>	<i>Description of Facilities</i>	<i>Ownership</i>
Oyster Pile Boat Ramp	Neighborhood Park with Pier and Boat Ramp	Public
Marquis Basin Boat Ramp	Neighborhood Park Pier and Boat Ramp	Public
Oriole Beach Boat Ramp	Neighborhood Park Boat Ramp and Pier	Public
Woodlawn Beach Boat Ramp	Neighborhood Park Boat Ramp and Pier	Public
East River Boat Ramp	Boat Ramp and Pier	Public
Holley Boat Ramp	Boat Ramp and Pier	Public
Sandpiper Village Park	Neighborhood Park with Pier	Public
Archie Glover Boat Ramp	Boat Ramp and Pier	Public
Dickerson City Boat Ramp	Boat Ramp	Public
Floridatown Park	Neighborhood Park with Pier and Boat Ramp	Public
Garcon Point Boat Ramp	Boat Ramp	Public
Indian Bay Boat Ramp	Boat Ramp	Public
Mae Lane Boat Ramp	Boat Ramp	Public
Morrell Boat Ramp	Boat Ramp	Public
Quinette Boat Ramp	Boat Ramp	Public
Snapper Ave. Boat Ramp	Boat Ramp	Public
Kaiser's Boat Ramp	Boat Ramp	Public
McDavid Park	Boat Ramp	Public
Sandy Landing Boat Ramp	Neighborhood Park with Boat Ramp	Public
Webs Landing Boat Ramp	Boat Ramp	Public
Williams Lake Boat Ramp	Neighborhood Park with Boat Ramp	Public
Brown's Fish Camp	Commercial Marina, Milton	Private
Gouey's Fish Camp	Commercial Marina, Milton	Private
Lindsey Landing	Commercial Marina, Milton	Private
Mel's Marina-Santa Rosa Yacht	Commercial Marina, Gulf Breeze	Private
Nichols Seafood Restaurant	Commercial Marina, Milton	Private
Nichols Seaside Marina	Commercial Marina, Bagdad	Private
Twin Palms Mar	Commercial Marina, Munson	Private
Millers Bluff Fish Camp		Private
The Fish Camp		Private
Jim's Fish Camp		Private
Source: Santa Rosa Community Planning, Zoning and Development Division, 2002		

A.3 Need For Water-Dependent And Water-Related Land Uses

Currently the County has insufficient information available to estimate the need for appropriate sites for water-dependent and water-related uses. The inventory contained in Table 12-2 does not include information needed to estimate current or projected future demand.

The following material is excerpted from "Preserving Waterfronts for Water Dependent Uses" by Kenneth Walker and Matt Arnn. NOAA's State of the Coast Report. Silver Spring, MD: NOAA.1998 (on-line).

"Historically, coastal communities relied upon water-dependent uses of their shorelines, such as commercial fishing and shipping, for their livelihood. Today, in coastal communities throughout the United States, water-dependent uses are threatened with displacement or have given way to more profitable non-water-dependent uses, such as residential development, hotels, offices, restaurants and retail shops. State and local governments have responded by developing policies and techniques for preserving and encouraging water-dependent uses of coastal waterfronts, usually as part of states' coastal management programs.

The Coastal Zone Management Act (CZMA) requires participating states and territories to give priority consideration to water-dependent uses when planning major facilities in the coastal zone. It encourages states and territories to develop policies to balance the competing demands on finite coastal resources, such as sites suitable for water-dependent uses, and to implement these policies by: (1) preserving existing water-dependent uses; (2) reserving appropriate vacant lands for water-dependent uses; and (3) designating lands for redevelopment with water-dependent uses.

According to Richard Delaney, Director, Urban Harbors Institute, University of Massachusetts Boston, There are five key conditions that a local community should consider:

(1) The use or uses to be preserved. In other words, what mix of water-dependent uses best fits the "community vision" for its waterfront.

(2) The geographic area to be planned and regulated. Communities must decide whether to address water dependent uses comprehensively across the waterfront or alternatively, to select discrete sites within the harbor where water dependent uses will have priority protection.

(3) The timing of waterfront development. Waterfronts tend to experience cyclical changes in their economies and resulting development interests; therefore, waterfront strategies must provide a means for balancing reasonable current uses while preserving sufficient options for future waterfront uses.

(4) The impact on existing water dependent uses. Communities should examine current waterfront uses and carefully determine how new policies will impact these uses. Some communities may adopt a "non-displacement" policy protecting all water dependent uses, while others may place higher values on one or two particular types of waterfront use.

(5) The public benefits to be protected or required. The unique characteristics of waterfronts provide a wide array of public benefits involving the economy and jobs, the culture of the community, the physical environment and access to the waterfront and many other dimensions. These public benefits provide local communities with both the rationale and the goals for developing programs to preserve and maintain water dependent uses.

According to Robert F. Goodwin, Affiliate Associate Professor of Marine Affairs, University of Washington and Coastal Resource Specialist, University of Washington Sea Grant Program:

A community can approach the problem of deciding how much shoreline space to reserve for water dependent uses in two ways: (1) simply *react* to market-driven demands for new waterfront industrial sites, or (2) actively *promote* the waterfront for targeted water dependent uses. The presence of a local port or industrial development to implement a marketing plan might affect the choice to be made between these two alternatives. Both approaches start with an inventory of existing water dependent uses and extensive interviews with representative industry leaders to gather as much information as possible about the trends affecting their industries' futures; and, each must proceed from an understanding of the physical characteristics of the shoreline that affect its suitability for accommodating marine uses—such as nearshore water depth, size and shape of waterfront land parcels, road and rail connections, critical habitats and limiting topographic conditions.

Where there is no likelihood that new waterfront industry could be attracted to a community, sites once occupied by seafood docks, shipyards or defense establishments become available for waterfront revitalization. Achieving other coastal management goals—enhancing public access, restoring degraded environments and conserving historic structures—can take precedence over the goal of protecting water dependent uses on these sites.

Some water dependent uses such as recreational marinas grow along with the local population, and their need for waterfront sites on which to expand can be predicted. Heavier industries such as cargo ports and shipbuilding are driven by global trends, or, like commercial fishing, depend on living resources that fluctuate and sometimes "crash," making their demand for waterfront land difficult to predict. Because these industries export their products beyond the local area, they contribute more to the community's economic base than marinas or boatyards serving a local population.

Heavier water dependent industries need large shoreline sites served by rail and highway connections. Unlike the hotels, office buildings and condominiums against which they compete for space, these industries cannot expand vertically to compensate for escalating land values. Nor can they easily migrate to cheaper sites; waterfront land away from urban centers is usually zoned exclusively for residential use, occupied by shoreline parks or preserves, or used for agriculture or forestry—uses incompatible with heavy industry.

Recreational water dependent uses, on the other hand, make good neighbors and can enhance adjacent residential communities. Marinas, boatyards, yacht brokerages and boat dealerships can expand in suburban and small town waterfronts where their customers live.

Commercial/Industrial Development

There are no existing commercial fishing facilities (i.e., commercial docks, seafood processing facilities) with the exception of charter fishing and pleasure boats for hire at several marinas or water-dependent industrial facilities located along the shorelines of unincorporated Santa Rosa County. No need for new commercial fishing facilities or water-dependent industrial facilities including electric generating or water supply facilities has been established. Due to the environmental sensitivity of the Pensacola Bay system, the development of these types of facilities is not recommended. The predominant land use along the

unincorporated shorelines is residential and there are no large parcels of vacant land that would accommodate adequate buffers that might allow compatible industrial development with existing adjacent land uses.

Beach and Shoreline Access

The County does not have sufficient information regarding the existing capacity of the beaches, fishing piers, and waterfront parks listed in Table 12-2 or the usage rates for these facilities. Approximately 1,548 acres of coastal area recreation sites are open to the public in unincorporated Santa Rosa County, including county, state, and federal parklands located on the Gulf of Mexico and other estuarine shorelines in the coastal planning area. The Recreation and Open Space Element did not identify any deficiencies in water-dependent recreation sites; however, the County plans to continue pursuing grants and other funding sources to increase public shoreline access through acquisition, conservation easements, or other similar methods.

Marinas and Boat Ramps

In order to determine the need for additional marinas and boat ramps, the County must establish the capacity of the existing facilities. A Marina Study would be needed to record the following information for each of the marinas and boat ramps listed in Table 12-2:

- (a) number of wet and dry slips;
- (b) usage rates of wet and dry slips;
- (c) breakout of slips by boat sizes;
- (d) on-site amenities including the number of parking spaces;
- (e) surrounding uses and any known or potential compatibility problems;
- (f) availability for public use;
- (g) number or boat lanes for each ramp;
- (h) conditions of facilities;
- (i) existing DEP-accepted documentation of water quality trends;
- (j) availability of pump-out facilities; and
- (k) potential for marina expansion according to siting criteria (see below).

In general, marinas should be sited where the optimum physical characteristics are maximized and impacts on marine resources are minimized. Therefore, the County should develop specific criteria for marina siting which are consistent with DEP Rules 17-312 and 18-21.004,F.A.C., and regulations of the U.S. Army Corps of Engineers. The marina siting criteria should consider:

- (a) benthic vegetation and faunal assemblages;
- (b) adequacy of circulation and tidal flushing;
- (c) access to deep water through existing channels of adequate depth;
- (d) minimal shoreline modification necessary;
- (e) quality and size of upland area and degree of alteration necessary;
- (f) ability to restore and enhance marina resource values at sites subject to past alteration; and
- (g) location of propeller dredging problem areas.

A.4 Need For Redevelopment in the Coastal Planning Area

The coastal planning area includes some of the oldest, mixed-use areas in unincorporated Santa Rosa including areas surrounding the City of Milton, and several communities in the Midway to Holley and Navarre sections of the South End Special Area of the county. These areas exhibit characteristics that provide possibilities for redevelopment activities all of which are described in the Future Land Use Element.

When redevelopment occurs, the opportunity exists to upgrade infrastructure and buildings to standards that meet coastal requirements.

A.5 Economic Base of the Coastal Planning Area

The economic base of Santa Rosa County is primarily related to the military and tourism, as is described in the Economic Development Element. The majority of the tourism economic impact for the county is derived from visitors to the coastal planning area of the County.

B. Effect of Future Land Uses on Natural Resources in the Coastal Planning Area

The coastal planning area of unincorporated Santa Rosa County is predominantly urban in nature, and urban development impacts almost every segment of the natural environment, from changes in the soil and topography of the area, to modifications in the plant and animal communities. Vacant land in the coastal planning area is primarily classified low to medium density residential with a small amount classified for mixed use that allows low intensity commercial and industrial uses, and an even smaller amount classified as higher intensity commercial or industrial.

B.1 Vegetative Cover, Including Wetlands

The Santa Rosa County Land Development Code addresses lot coverage, setbacks from wetlands and water bodies, floor elevations, and protection of native vegetation for all new development and redevelopment, all for the primary purpose of conserving vegetative cover. Development is all but prohibited in wetlands, and in most cases wetland areas are set aside as private conservation areas within residential subdivisions and may function as filters for stormwater management facilities in residential and non-residential developments.

B.2 Areas Subject To Coastal Flooding

The 1997 FEMA maps, used to define flooding zones, are maintained in the Santa Rosa County Planning and Inspection Department. The Santa Rosa County Emergency Management System (EMS) office utilizes the Morplot maps available in draft form from the Army Corps of Engineers. Zone A now depicts the extent of Category 1-3 storms and Zone B the extent of Category 4-5 storms. The Morplot maps are in the process of being adjusted based on data from 1995's Hurricane Opal, which produced storm surges of 14.75 feet and eroded the height of protective sand dunes on the County's barrier islands.

B.3 Wildlife Habitats

Several areas of extensive, continuous wildlife habitats exist in the coastal planning area of Santa Rosa County. Some of the large areas of vacant land that exist in the coastal planning area are platted lots, primarily in the Holley/Navarre area, while some large tracts still remain under individual ownership. In some newer residential developments conservation areas have been set aside which act to preserve wildlife habitats, sometimes acting in concert with stormwater management facilities. Development of smaller, vacant parcels may contribute to the reduction of small pockets of wildlife habitats.

B.4 Living Marine Resources

Through stringent stormwater management ordinances, sedimentation and runoff controls, urban runoff nonpoint sources of pollution are minimized. Issues of concern include: runoff pollution from older residential and non-residential developments that did not leave natural vegetation adjacent to the shorelines; development of more docks associated with residential development; and the increase of recreational and commercial boating activities associated with increased development. The County is coordinating with the Northwest Florida Water Management District in the implementation of

recommendations offered in the *Pensacola Bay System SWIM Plan* that will maintain and improve the water resources of this system. The County has utilized Community Development Block Grant (CDBG) funds to retrofit stormwater facilities in some older neighborhoods, and to upgrade sewer lines to allow residents to convert from septic systems to central sewer. More of these type of projects are anticipated and addressed in the County's Local Mitigation Strategy.

C. Impacts Of Development And Redevelopment On Historic Resources

Santa Rosa County is fortunate to have an abundance of identified historic and archaeological resources, many of which are located within the coastal planning area. Maps are available from the Florida Master Site File that identify generalized locations of these resources (due to the vulnerability of many of these sites to vandalism, more definitive locations are not provided). The Bagdad Historic District is the only identified historic district in the Santa Rosa County coastal planning area (see Map 5-2, Appendix A), and this district is protected through Land Development Code provisions. Individual sites of historic or archaeological significance are not protected through the LDC, however, through the efforts of local organizations such as *The First Americans*, *Early Settlers Foundation, Inc.*, and the *Bagdad Village Preservation Association*, there is an awareness of the significance of the historical and archaeological resources within Santa Rosa County.

D. Estuarine Pollution Conditions and Actions Needed to Maintain Estuaries

The *Pensacola Bay System SWIM Plan* indicates that sediment contamination has degraded aquatic habitats and productivity in the bay and that commercial and recreational finfish and shellfish resources have declined due to water quality degradation and habitat loss. The SWIM program to improve and manage the Pensacola Bay system includes recommendations to address specific areas of concern and to increase public awareness of the benefits and vulnerabilities of the system through basinwide coordination of local governments, public agencies and private groups.

D.1 Existing Point and Non-Point Source Pollution Problems

The Conservation Element describes existing point and non-point source pollution problems in the Pensacola Bay system in detail. Point sources include spills of raw sewage due to breakage of lines or due to coastal flooding, and spills of fuel oil, waste oil, pesticide and other chemical or hazardous wastes. Nonpoint sources include stormwater runoff from streets, parking lots, buildings and lawns, and combined sewer overflows and from recreational and commercial uses of the estuarine system.

D.2 Impacts of Future Development and Proposed Facilities

The Future Land Use Map identifies the predominant land use in the coastal planning area of unincorporated Santa Rosa County as low to medium density residential, including development allowed along the majority of shoreline areas outside of Santa Rosa Island.

Santa Rosa Island (Navarre Beach) allows medium-density to high-density residential development on the Gulf of Mexico shoreline outside of the Coastal Construction Limits; however, much of Santa Rosa Island is restricted to low and medium density residential land use by its zoning district classifications. The future land use categories preclude the development of anything other than service related or low intensity commercial and light industrial uses along any of the shoreline areas, and no major public infrastructure facilities are proposed within the coastal planning area during the planning time frame.

D.3 Programs to Maintain or Improve Estuarine Environmental Quality

The Santa Rosa County Land Development Code includes ordinances that regulate development with the purpose of maintaining or improving estuarine environmental quality. The Northwest Florida Water Management District, the West Florida Regional Planning Council, the Florida Department of Environmental Protection, the Florida Marine Fisheries Commission, the Florida Game and Fresh Water Fish Commission, the U.S. Department of the Interior, U.S. Department of Defense, and U.S. Environmental Protection Agency all have various degrees of regulatory responsibilities within the Santa Rosa County coastal planning area. In addition, several private non-profit agencies work closely with the local governments and other public agencies to preserve, protect and enhance the environmental quality of the coastal planning area as well as provide more public access to the natural resources.

E. Beach and Dune Systems

E.1 Erosion Control

Recognizing the importance of the state's beaches, the Florida Legislature in 1986 adopted a posture of protecting and restoring the state's beaches through a comprehensive beach management planning program. Under the program, the Department of Environmental Protection's Bureau of Beaches and Wetland Resources evaluates beach erosion problems throughout the state seeking viable solutions. The primary vehicle for implementing the beach management planning recommendations is the Florida Beach Erosion Control Program, which is a program established for the purpose of working in concert with local, state and federal governmental entities to achieve the protection, preservation and restoration of the coastal sandy beach resources of the state. Under the program, financial assistance in an amount up to 50 percent of project costs is available to Florida's county and municipal governments, community development districts, or special taxing districts for shore protection and preservation activities located on the Gulf of Mexico, Atlantic Ocean, or Straits of Florida.

Eligible activities include beach restoration and nourishment activities, project design and engineering studies, environmental studies and monitoring, inlet management planning, inlet sand transfer, dune restoration and protection activities, and other beach erosion prevention related activities. The program is authorized by Section 161.101, Florida Statutes. Since its inception in 1964, the Florida Beach Erosion Control Program has been a primary source of funding to local governments for beach erosion control and preservation activities. Through the fiscal year 1997, over \$190 million has been appropriated by the Legislature for beach erosion control activities

Existing Erosion and Accretion Problem Areas in Santa Rosa County

The Bureau of Beaches and Coastal Systems, Division of Water Facilities, Department of Environmental Protection published *Critical Beach Erosion Areas in Florida* (updated April 2002) which reported that there is one critical erosion area in Santa Rosa County. This 3.4-mile critical erosion area along most of Navarre Beach has threatened and damaged development and recreational interests. Following Hurricane Opal in 1995 a dune restoration project was constructed.

The Report was updated in June 2008 and extended the critical erosion area in Santa Rosa County by 0.7 miles due to the impact of Hurricane Ivan. This brought the critical erosion area to 4.1 miles encompassing the entire coastline of Navarre Beach, threatening development and recreational interests. Dune restoration projects were completed in 1995 and 1998. A beach restoration project was completed in 2006.

Statewide Coastal Monitoring Program

A regional data collection plan has been developed by DEP's Office of Beaches and Coastal Systems (OBSC) this past year, which identifies four coastal regions within which comprehensive data collection will

occur on a recurring cycle. The regional plan also defines standards and technical specifications to be implemented in conjunction with the regional data collection. This plan outlines a schedule for statewide data collection and processing for the six-year period 2000-2005. Work performed in 2000 and the first part of 2001 included completion of processing of post-hurricane aerial photography of the north and central east coast of Florida obtained in the fall of 1999.

New data collection under the Statewide Coastal Monitoring Program began in January 2001. Scheduled data collection and processing by the OBCS for the Northwest Florida area (Escambia to Franklin counties) is in 2004.

The Office of beaches and Coastal Systems (OBCS) is responsible for the protection and management of beaches and coastal systems of Florida which includes the accurate measurement and analysis of data used to document erosion. The data collection effort is completed on a four year schedule. Data collection for Santa Rosa County was conducted in 2004 and included Aerial Videography, Conventional Survey (DEP Profiles), and the Wave program as well as aerial photography..

F. Hurricane Evacuation Planning

New legislation (HB 1359 – SB 7121) requires the study and update of Regional Evacuation Plans throughout the State of Florida. The Division of Emergency Management has contracted with the regional planning councils, specifically for our area, the West Florida Regional Planning Council to update the regional hurricane evacuation plan. LIDAR topographic data is currently being processed which will then be used to update or develop new SLOSH models. Once SLOSH models are developed, work will continue to develop surge and evacuation zones. Transportation models are currently being developed to update the evacuation network and clearance times. Estimated completion time is the end of 2009.

The most recent hurricane evacuation study for Santa Rosa County was prepared for the Army Corps of Engineers, Mobile District, in 1998. The *Northwest Florida Hurricane Evacuation Re-Study* provides a framework in which the County can update and revise existing hurricane evacuation plans. The study consists of a hazards analysis (using the SLOSH numerical model), vulnerability analysis, behavioral analysis, shelter analysis and transportation analysis.

The study's vulnerability analysis developed evacuation zones for each County in Northwest Florida in order to allow development of data to be used in traffic modeling, to determine sheltering requirements, and to facilitate future updates. Santa Rosa County was divided into 24 traffic evacuation zones. Of these, zones 1-6 are required to evacuate during a category one hurricane (based on the Saffir/Simpson Hurricane Scale). Zones 1-13 require an evacuation in the event of a category 2 or 3 hurricane, and zones 1-17 would require evacuation in the event of a category 4 or 5 hurricane. In addition, all mobile homes and low lying areas located in any of the 24 zones are recommended to evacuate during any category hurricane.

F.1 Number of Persons/Vehicles Requiring Evacuation

In order to determine the number of persons and vehicles requiring evacuation behavioral assumptions must be made. The assumptions made for the Santa Rosa County population are:

Participation rates. Zones that would be evacuated for storm surge were assumed to have a 100% participation rate. 100% participation rate for mobile homes in all evacuation zones was assumed. A portion of the theoretically non-vulnerable population was also used.

Evacuation rapidity of response rate. The mobilization/traffic loading time was varied between four hours and ten hours.

Destination percentages. Figures were developed for the expected percentage of evacuees going to local public shelters, hotel/motel units, home of friend or relative, or out of the County entirely.

Vehicle usage. Of all vehicles available to the 65% to 75% usage was assumed, depending on distance from the coastline.

The housing and population data used in the behavioral analyses were based on 1990 census figures and on Year 2000 Traffic Analysis Zone projections. For the vulnerable area of Santa Rosa County (including the municipalities) the population estimate for the year 2005 is 142,961 persons. *Table 12-3*, on the following page, shows the vulnerable and total population by evacuation zone.

F.2 Roadway Network Characteristics

In choosing roadways to be used for the evacuation network, an effort was made to include street facilities with sufficient elevation, little or no adjacent tree cover, substantial shoulder width and surface, and roadways already contained in existing hurricane evacuation plans. Roadway network assumptions are:

- Evacuation of all vehicles will occur prior to the arrival of sustained tropical storm winds and storm inundation of routes;
- Provisions will be made to remove vehicles in distress;
- Signal timings will be activated to provide most greentime for northbound traffic; and
- U.S. Coast Guard will lock down drawbridges once evacuation orders are issued.

Critical roadway locations and segments are listed below:

- 1) SR 87 eastbound on ramp to I-10
- 2) US 90 from SR 87 to Milton
- 3) Pensacola Bay Bridge
- 4) SR 87 from Navarre to Milton
- 5) Avalon Blvd. from I-10 to US 90
- 6) I-10 interchanges through county

Table 12-3
Vulnerable & Total Population by Evacuation Zone
Santa Rosa County
(Based on the Year 2005 population estimates)

<i>Evacuation Zone</i>	<i>Mobile Home Surge Vulnerable Population</i>	<i>Total Mobile Home Population</i>	<i>Non-Mobile Home Surge Vulnerable Population</i>	<i>Surge Vulnerable Tourist Population</i>	<i>Total Vulnerable Population</i>
Total Population	30,247	30,247	107,965	4,749	142,961
Category 1 Evacuation Zone	3,215	30,247	14,306	3,529	48,082
Category 2-3 Evacuation Zone	6,263	30,247	22,693	3,536	56,476
Category 4-5 Evacuation Zone	9,116	30,247	36,963	4,118	71,327

F.3 Hurricane Shelter Availability in Santa Rosa County

The Hurricane Evacuation Study reports that Santa Rosa County has a public shelter capacity of 8,150 people. *Table 12-4*, on the following page, describes the projected evacuation scenarios for different categories of hurricanes, based on low or high tourist projections. The scenarios include the maximum number of evacuating persons and vehicles, maximum public shelter demand and public shelter capacity.

Estimated Evacuation Clearance Times

Clearance time is the time required to clear the roadway of all vehicles evacuating in response to a hurricane situation. Clearance time begins when the first evacuating vehicle enters the road network and ends when the last evacuating vehicle reaches an assumed point of safety. Clearance time includes the time required by evacuees to secure their homes and prepare to leave, the time spent by evacuees traveling along the road network, and the time spent by evacuees waiting along the road network due to traffic congestion. Clearance time does not relate to the time any one vehicle spends traveling on the road network and does not include time needed for local officials to assemble and make a decision to evacuate. The longest clearance times for any scenario are those associated with northbound out of region traffic movements where Alabama is also conducting a significant evacuation of its coast. *Table 12-5* shows the clearance times by category hurricane and seasonal occupancy.

**Table 12-4
Santa Rosa County Shelter Use Data by Evacuation Scenario**

<i>Category Hurricane</i>	<i>Total Evacuating Population</i>	<i>Evacuees Expected to go to In-county Shelters</i>	<i>Shelter Needs or Surplus Capacity</i>
Total Available Shelter Capacity			8,150
Cat 1 – low tourist	39,402	4,047	4,103
Cat 1 – high tourist	26,258	2,495	5,655
Cat 2/3 – low tourist	40,880	4,122	4,028
Cat 2/3 – high tourist	48,352	5,030	3,120
Cat 4/5 – low tourist	49,857	5,106	1,086
Cat 4/5 – high tourist	65,598	7,064	996
Cat 4/5 – high tourist (realistic)	67,424	7,154	1,875

Note: Low tourist is 30% occupancy, high tourist is 90% occupancy, the "realistic" scenarios used participation rates less than 100%
Source: Northwest Florida Hurricane Evacuation Study, July 1999

**Table 12-5
Projected Clearance Times (in Hours) Santa Rosa County, Year 2005**

<i>Category of Hurricane</i>	<i>Low Seasonal Occupancy</i>	<i>High Seasonal Occupancy</i>
Category 1 Hurricane		
Rapid Response	8 ½ (6 ½)	8 ¾
Medium Response	9 ¾ (7 ½)	10 ¼
Long Response	11 ¾ (11 ¼)	12 ¼
Category 2-3 Hurricane		
Rapid Response	9 ½	9 ¾
Medium Response	11	11 ¼
Long Response	13	13 ½
Category 4-5 Hurricane		
Rapid Response	11	11 ¼ (10)
Medium Response	12 ½	12 ¾ (11 ½)
Long Response	14 ½	15 (13 ¼)

Note: Times in parentheses reflect using participation rates of less than 100% in the areas to be evacuated
Source: Northwest Florida Hurricane Evacuation Study, July 1999

Time Constrained Evacuations

Typical hurricane and watch time frames would allow for desired evacuation movements to take place at 24 hours or less. However, storm threats due to unusual meteorological characteristics and/or late behavioral response mean you might need 12-18 hours. For northwest Florida, this would primarily be a problem for Escambia, Okaloosa and Bay counties where times exceed 12 hours of clearance time. For Santa Rosa and Walton counties evacuation movements (rapid response) can work within a 12-hour time frame as long as evacuees are warned of traffic conditions for long out-of-county movements and are encouraged to stay in county.

F.4 Measures to Maintain or Reduce Hurricane Evacuation Times

Experience in Santa Rosa County, as in other neighboring coastal counties, has shown that reducing hurricane evacuation times through limiting population density and construction of more and bigger roadways is unrealistic. Attempts by the County to restrict development in the coastal planning area have met organized resistance and legal action. The debate over private property rights and economic development complicate the issue. Furthermore, the County is restricted by federal lands, geography and topography and through economic reality from constructing many more evacuation routes.

There is funding to widen some critical roadway segments, including SR87, which is the major northbound evacuation route for eastern Santa Rosa County, Navarre Beach and western Okaloosa County. However, the section of SR87 through Eglin Air Force Base is not funded, resulting in a bottleneck on the long stretch from Navarre to I-10 where there is little development and no refuge of last resort. Furthermore, the SR87 intersects and joins two lane US90 through downtown Milton, creating yet another bottleneck within the County. Neither SR87 nor SR87 north of Milton are slated for four-laning, thus there is no four-lane northbound evacuation route in Santa Rosa County. The County, the City of Milton and several partner entities in Alabama have been coordinating on a project, termed FAST, to construct a separate north-south connector or four-lane existing corridors, but this effort has not yet been fruitful.

The other major northbound evacuation route is SR281 Avalon Boulevard. Although the section of SR281 from I-10 to US90 is slated for Right-of-Way acquisition in the current FDOT five-year work program, there are no construction funds yet available. Additional lanes on this section would alleviate recurring congestion, but do little for evacuation times because it is fed by a two-lane toll bridge and two-lane section of roadway south of I-10. The northern terminus of SR281 is at the constricted US90 intersection. US90 itself is already overburdened and additional vehicles from SR281 will only serve to further delay evacuation traffic.

US98 provides the only east-west connection along the vulnerable southern peninsula of Santa Rosa County. Although part of this roadway is also slated for Right-of-Way acquisition in the current work program, the section is so short that it will have little impact on overall evacuation times. In addition, it too meets with the aforementioned two-lane facilities, causing bottlenecks.

The County has attempted to reduce evacuation times through public education, which is expected to have a smaller, but more easily achievable benefit. For example, promoting businesses and churches to sponsor hosting programs, whereby residents of surge areas evacuate to a host's residence in a non-surge area of the county would reduce the evacuation times and roadway congestion by shortening the trips. It would also reduce the demand for public shelter space.

Other measures to reduce evacuation times are based on higher construction standards and/or requirements that certain types of developments provide on-site sheltering. The desire of the population to be closer to coastal resources suggests that they might be willing to pay higher costs for constructing stronger structures in return for the location benefits. For dense residential developments such as apartments, townhomes and condominiums, a possible measure is to require the development to provide an on-site shelter for its residents at a minimum that would meet safety standards to withstand up to category 4 or 5 hurricanes.

Special Needs Populations

The evacuation needs of the elderly, handicapped and hospitalized citizens present special problems during a natural disaster. The Santa Rosa County Comprehensive Emergency Management Plan (2004⁵)

includes provisions for ensuring these special populations are evacuated when necessary. Close coordination between the County and area providers of these services should be maintained.

Impact Of Anticipated Population Density

The population density projected in the Future Land Use Element is consistent with the estimated populations utilized in the *Northwest Florida Hurricane Evacuation Study*. Except for the case of time-constrained evacuations, the study predicted that the projected population would be able to evacuate in the acceptable 18-24 hour clearance time. The study also showed that shelter capacity could accommodate the projected population density.

G. Coastal High Hazard Areas

The coastal high hazard area is defined as "...the area seaward of the elevation of the category 1 storm surge line as established by a Sea, Lake and Overland Surges from Hurricanes (SLOSH) computerized storm surge mode." ~~the evacuation zone for a category 1 hurricane as established in the regional hurricane evacuation study applicable to the local government.~~ For Santa Rosa County, this includes all of Santa Rosa and Santa Rosa Islands and areas inland from ball coastal and estuarine shorelines as shown in *Map 3-6, Future Land Use Map Series*.

G.1 Existing Infrastructure Within the Coastal High Hazard Area

Roadways and Bridges

The following roadways or portions of roadways are located within or adjacent to the CHHA in Santa Rosa County and are a part of the evacuation network: I-10, US 98, US 90, SR 87 and CR 191/281 (on Garcon Point). See *Map 4-2 in Appendix A* for locations. The following bridges are identified in or adjacent to the CHHA: CR 399 over Santa Rosa Sound, SR 87 over East Bay, SR 87 over Dean Creek, SR 89 over Blackwater River, US 90 over Blackwater River, CR 191 (2 bridges south of Milton), and I-10 over Escambia Bay.

Potable Water Facilities

The Bagdad, East Milton, Holley-Navarre, Midway, Navarre Beach, Pace and South Santa Rosa Utilities potable water facilities are located within or adjacent to the CHHA in Santa Rosa County. See Chapter 9, Potable Water Element, for more details on these facilities.

Sanitary Sewer Facilities

The Holley-Navarre, Navarre Beach and South Santa Rosa Utilities sewer facilities are located within or adjacent to the CHHA in Santa Rosa County. See Chapter 6, Sanitary Sewer Element, for more details on these facilities.

Man-Made Stormwater Management Facilities

The County's 1988 Comprehensive Stormwater Development Plan (Johnson, Creekmore and Fabre) identified man-made stormwater management facilities in the County; however, this information has not been updated to the present time. The County is expecting to complete a stormwater management plan in the next few years and more information will be available to evaluate these facilities.

Shore Protection Structures

County-owned shore protection structures are limited to those associated with public boat ramps, and there are no known problems with these structures.

H. Post-Disaster Redevelopment

Redevelopment within Santa Rosa County following a storm event will likely reflect existing development with regard to land use. However, redevelopment of substantially damaged structures will require that current building codes be adhered to.

H.1 Santa Rosa County Local Mitigation Strategy

The Santa Rosa County Community Planning, Zoning and Development Division, with technical assistance from the West Florida Regional Planning Council and BCM Engineers, Inc., completed a CBDG contract in 2000/2001 to develop the *Santa Rosa County Local Mitigation Strategy*. This Strategy establishes a prioritized list of disaster mitigation activities in the County. Mitigation projects have been identified, analyzed, and ranked. Task orders for further study of the projects have been completed. The adopted Strategy includes a plan for ongoing evaluation and enhancement of the Strategy itself, which will ensure that a complete and current plan is in place to address mitigation activities. Development of this Strategy places Santa Rosa County in a position to implement mitigation projects in conjunction with post-disaster redevelopment activities. The Local Mitigation Strategy implements the following list of adopted Community Guiding Principles:

1. Protect Life and Property
2. Reduce Future Expenses
3. Mitigate Through Land Use Planning
4. Mitigate Through Environmental Measures
5. Mitigate Through Administrative Means

Policy/Non-Structural Initiatives

In addition to recommendations for Land Development Code revisions, the following policy/non-structural initiatives were recommended for Santa Rosa County.

- I. Establish guidelines for *voluntary flood mitigation Acquisition* programs to make programs most effective.
- II. Establish policies to reduce use of septic tanks in unsuitable areas (conversion of existing systems, requirements for new development)
- III. Restore natural protection of coastal dunes and Protect coastal systems by encouraging beach nourishment (Berm replacement) as appropriate. Encourage re-vegetation of dunes/berm, and install sand fences where appropriate. Encourage use of sediment and vegetation to stabilize other shorelines in Santa Rosa County as needed. Discourage use of hard stabilization measures.

Proposed Local Mitigation Projects

Jurisdiction specific projects listed in *Table 12-6*, on the following page, were ranked by the Santa Rosa County LMS Steering Committee according to the potential for loss of life, the population base affected, the potential for loss of property and the potential environmental impacts. These projects address structural and non-structural means to protect infrastructure and buildings within areas of storm surge or hurricane evacuation zones and the relocation or elevation of repetitive loss properties.

Table 12-6
Santa Rosa County Proposed Local Mitigation Projects

Priority Rank	Mitigation Initiative	Projected Costs
3	Stormwater Master Plan	\$ 110,000.00
15	Public Shelter Window Storm Panels	\$ 50,000.00
27	Norris Road	\$ 1,250,000.00
28	Ward Basin Road	\$ 1,370,500.00
35	John Hamm Road	\$ 311,500.00
36	Rolling Acres	\$ 561,500.00
38	Pea Ridge	\$ 865,500.00
40	Villa Venyce	\$ 522,000.00
41	Channing Road	\$ 756,000.00
43	Sandalwood	\$ 2,031,500.00
46	Pine Blossom Road	\$ 1,050,000.00
53	Serosa Estates Paving	\$ 320,500.00
55	Bagdad Sewer	\$ 320,000.00
56	Chipper Lane	\$ 234,000.00
58	Saddle Club Estates	\$ 3,422,000.00
59	Ganges Trail	\$ 196,500.00
63	North and West Spencerfield Road	\$ 283,500.00
64	Gardendale	\$ 1,039,500.00
67	Sabertooth Circle	\$ 143,500.00
68	Ramblewood Drive	\$ 114,500.00
69	Tibet Dr.	\$ 77,500.00
71	Acquisition of Flood-Prone Structures	\$1,500,000.00
1	Bay St. Sewer Extension	\$750,000.00
3	Orion Lake Stormwater Improvement	\$700,000.00
4	Shutters and generators for Public Services, Public Works, South Santa Rosa Service Center, and Animal Services	\$500,000.00
8	Greenbriar Subdivision Stormwater Improvement	\$2,400,000.00
10	County Auditorium Hardening	\$625,000.00
11	Harrison Ave Stormwater Improvement	\$650,000.00
12	Conty Administrative Building Hardening	\$200,000.00
15	Navarre Beach Waste Water Treatment Plant – Lift Station Hardening	\$320,000.00
17	Bagdad Sewer Extension – east of Forsyth	\$600,000.00
18	Bagdad Sewer Extension – west of Forsyth	\$1,300,000.00
20	Villa Venyce Flooding	\$750,000.00
23	East Milton Gymnasium Hardening	\$625,000.00
25	Ramblewood Flooding/Stormwater	\$2,000,00.00
27	Santa Rosa County Extension Building Hardening	\$300,000.00
31	Serosa Estates Sewer Extension & Pavement	\$2,500,000.00
38	Wind Retrofits	\$15,000,000.00
40	Sabertooth Circle Stormwater	\$500,000.00
43	Ganges Trail/Madura Trail Flooding	\$1,200,000.00
47	Ward Basin Sewer Extension (north of I-10), south of Nimitz	\$2,210,000.00
48	Ward Basin Sewer Extension (north of I-10), 90 to Nimitz	\$790,000.00
51	Holley By the Sea Stormwater Study and	\$4,800,000.00

Improvement Project		
52	Holley-Navarre Sewer Extension	\$1,406,000.00
53	Holley-Navarre Sewer Extension	\$450,000
58	Shuttering of at-risk homes in the County	\$1,000,000.00
59	Chumuckla Community Center Shelter Retrofit	
60	Acquisition of Floodprone structures throughout county	\$2,000,000.00
61	Ward Basin Rd S of US-90 Drainage	\$5,000,000.00
63	Pace Community Center/Special Needs Shelter	\$2,000,000.00
65	Floridatown Seawall Project	\$505,350.00
66	EOC Modifications/Enlargement	\$2,214,800.00
68	Norris Road Stormwater	\$1,500,000.00
69	Elevation of Flood-prone structures throughout county	Depends on applications from residents
71	Fidelis Community Center Shelter Retrofit	
73	Install Mast Arms for wire-strung signals	\$2,250,000.00
75	Intersection of N and W Spencer Field Rd Flooding/Stormwater	\$1,000,000.00
76	Garcon Point Seawall Project	\$468,750.00
88	Emergency Communications Microwave Equipment	\$1,320,000.00
90	Ranchette Square Sewer Extension	\$650,000
92	Pea Ridge/Metron Estates/Keyser Stormwater	\$500,000.00
94	Chipper Lane Stormwater/Flooding	\$300,000.00
97	Channing Woods Subdivision Flooding	\$250,000.00
99	Pine Blossom Rd north of Country Squire to SR 89 Flooding	\$1,000,000.00
101	Floridatown Sewer Line Extension	\$1,000,000.00
104	Pace Gymnasium/At-Risk Shelter	\$3,050,000.00
107	GIS Enhancements	\$290,002.00
109	Agricultural and Environmental Education Center Shelter Project	\$220,000.00

Note: This table does not include projects ranked for the municipalities of Jay, Gulf Breeze and Milton.

Source: **Santa Rosa County Local Mitigation Strategy, August 2009**