
**EVALUATION AND APPRAISAL REPORT
OF THE
INDIAN RIVER COUNTY
COMPREHENSIVE PLAN**

COASTAL MANAGEMENT ELEMENT

2008

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INTRODUCTION

The purpose of this section of the Evaluation and Appraisal Report is to assess the success or failure of the Coastal Management Element of the Comprehensive Plan. This assessment examines changes that have occurred within the designated coastal zone of Indian River County; evaluates achievement of objectives; and identifies changes in state requirements affecting the Coastal Management Element. Based on this evaluation and appraisal, the Coastal Management Element may need to be updated and revised. This assessment contains the following components:

- Baseline Data
 - Conditions within the designated coastal zone at the time of last Comprehensive Plan update (1998).
- Existing Conditions
 - Existing conditions within the designated coastal zone (2006/2008)
- Analysis of conditions in the designated coastal zone, comparison of data at time of the last major plan update to existing data
- Assessment of objectives achievement and policy implementation
- Identification of future actions
- Identification of anticipated amendments

Coastal Zone

Defined as the watershed of the Indian River Lagoon, the coastal zone is described and depicted in the comprehensive plan. Although the Atlantic coastal sand ridge was historically the western boundary of the Indian River Lagoon watershed, manmade drainage canals expanded the watershed westward. Consequently, the Lagoon watershed - and coastal zone – now encompass lands west of I-95 to nearly the St. Johns Marsh, including the Fellsmere area. South of S.R. 60, the coastal zone's western boundary is approximately 2 to 3 miles west of I-95. Figure 1 generally depicts the coastal zone boundary.

The coastal zone comprises approximately 177,099 acres (55 percent of the total land mass) in Indian River County. Of this area, 72,768 acres (113.7 square miles) are open water.

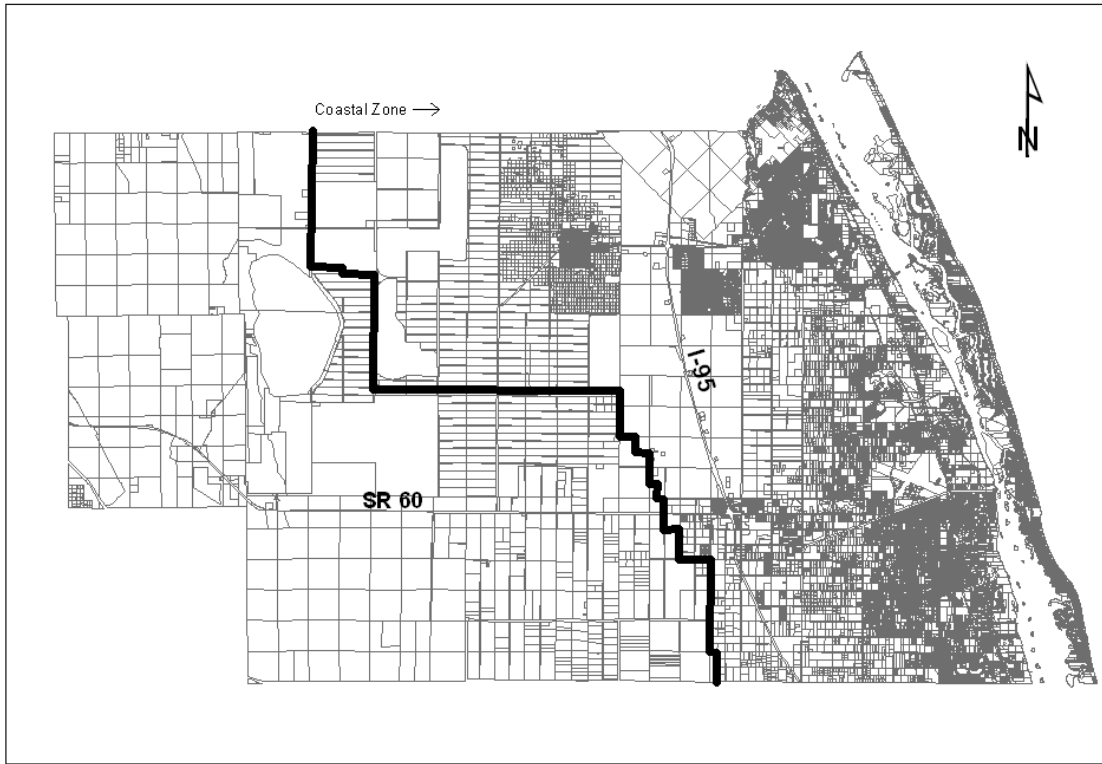


Figure 1: Indian River County Coastal Zone (1996)

BASELINE DATA

The baseline data for the Coastal Zone Section of the 2008 Indian River Comprehensive Plan Evaluation and Appraisal Report were taken from the last major comprehensive plan update. That update occurred in 1998. In the 1998 comprehensive plan update, the majority of the data employed was collected in 1996. For that reason, the data used in the 1998 comprehensive plan update will, unless otherwise noted, be referred to as the *1996 data or baseline data* in this report.

In 1996, the condition categories within the designated coastal zone were as follows: land use; economy; water-dependent/water related uses; natural and historic resources; estuarine water quality; natural disaster planning; beaches and dunes; public access facilities; infrastructure; and ports. Those categories are addressed below.

Land Use

At the time of the last major comprehensive plan update, approximately 87,260 acres in the coastal zone were designated for agriculture land use. There were 34,634 acres of land classified as residential in the coastal zone. Of this total, approximately 16,414 acres were occupied, while the remaining 18,220 acres were vacant. Commercial and industrial land use accounted for an estimated 2,053 acres. In 1996, approximately 3,084 acres of the coastal zone were dedicated to recreational use, and the total acreage of public facilities was 4,946. A detailed description of land use classifications is contained in the Future Land Use Element section of the Evaluation and Appraisal Report.

- Barrier Island

Within Indian River County, the barrier island is 22.4 miles in length and varies in width from a few hundred yards to over 1.5 miles. In 1996, the estimated population of the unincorporated portion of the barrier was 3,700. At that time, the northern unincorporated portion of the barrier island consisted mostly of citrus groves and scattered low-density developments. The majority of the incorporated area consisted of low to medium density residential developments. In 1996, the unincorporated area south of the city limits of Vero Beach was almost exclusively single-family residential.

Economy

In 1996, the County's annual employment was 43,208, or about 42.3 percent of the County's total population. While service sector jobs accounted for approximately 35% of all jobs, the retail trade sector employed approximately 26% of the county's residents. The agricultural industry provided mostly seasonal jobs, totaling 12% of employment in the county.

At the time of the last major plan update, 82,603 acres of the 136,180 acres dedicated to agricultural use in the county were cultivated citrus groves. During the 1994-1995 seasons, 21,687,000 boxes of citrus were harvested in the County. At that time, Indian River County was ranked sixth in the state for citrus production during those seasons.

In 1996, an estimated 593,600 tourists contributed \$89,040,000 to the county's economy.

According to the Florida Statistical Abstract, there were 9,138 commercial fishing trips that yielded a total catch of 1,236,473 pounds in 1996. In that same year, the annual shellfish harvest was estimated at 85,253 pounds.

Water-Access and Water Related Uses

According to the Florida Department of Environmental Protection (DEP), there were approximately 8,900 boats registered in the County in 1996. The highest boating activity occurred on weekends and holidays during the spring and summer months. The largest portion of on-water traffic was generated by boat ramps, followed by private docks and marinas.

In 1996, there were 19 boat ramp lanes located throughout the coastal zone of the County. Of these, eight were located at four county-owned public boat launch sites. The four county-owned boat launch sites were: Wabasso Causeway Park; Donald McDonald/Dale Wimbro Park; the Oslo boat ramp (unimproved) adjacent to the Oslo Riverfront Conservation Area (ORCA); and Round Island Park.

Two parks with public boat lanes, Riverside Park and MacWilliams Park, were located in the City of Vero Beach. While the City of Sebastian had one park with a public boat ramp, the Sebastian Inlet State Recreation Area also had public boat ramps. The remaining boat lanes were located at commercial facilities.

In 1996, there were approximately 1,100 boat slips (971 wet slips and 209 dry slips) located at the public and private marinas throughout the County. While the City of Vero Beach Municipal Marina was the only commercial marina located in the City of Vero Beach, there were two commercial marinas located in the City of Sebastian. Approximately 40% of the boats moored at these marinas were designated as Class 2 watercraft (25 to 40 feet).

In 1996, Grand Harbor Marina was the only commercial marina in unincorporated Indian River County. The Grand Harbor Marina consisted of 144 wet slips (67 occupied - 21% sailboat, 79% powerboat), with room to expand to 468 wet slips.

Natural and Historic Resources

- Flora

In 1996, there were 24 flora species in the county listed by the Florida Department of Agriculture and Consumer Services (FDACS) as being commercially exploited, threatened, or endangered. A complete list of endangered and potentially endangered flora is contained in the Conservation Element.

- Fauna

There were 45 fauna species in the county in 1996 listed by the Florida Game and Fresh Water Fish Commission as being rare, threatened, or endangered. A complete list of endangered and potentially

endangered fauna is contained in the Conservation Element. Federally listed species of particular note within the coastal zone were the Florida scrub jay, the Florida manatee, and three species of sea turtles (Loggerhead turtle, Atlantic green turtle and Leatherback turtle).

- Florida scrub-jay

In 1996, there were 27 Florida scrub-jay families documented in the City of Sebastian and surrounding unincorporated area. Because scrub jays were federally listed species, the U.S. Fish and Wildlife Service (FWS) had identified approximately 350 single-family lots in the Sebastian Highlands that contained scrub jay habitat subject to regulation under the Federal Endangered Species Act. At that time, owners of the identified lots were not allowed to develop their lots without first obtaining “incidental take permits” and providing mitigation for habitat loss and the “taking” of scrub jays.

- Florida manatee

In 1989, Indian River County was identified as one of 13 key counties directed by the state to adopt a manatee protection plan (MPP). In 1992, manatee protection boating speed zones were established in the lagoon. By 1996, however, an MPP had not been adopted by the county.

Between 1974 and 1996, the average annual mortality rate in the county was 3. Of that average, one manatee death per year (approximately one-third) was attributed to watercraft collision.

- Sea turtles

In 1996, county sea turtle lighting regulations were in place to reduce sea turtle disorientation during nesting season (March through October each year). At that time, a comprehensive plan to address sea turtle habitat did not exist.

- Historic Resources

In 1989, a countywide survey of historic properties in the unincorporated county was completed. That survey identified 284 historic building sites. In addition to historic sites, prehistoric shell middens were identified in the coastal zone. In 1992, the County obtained a countywide archaeological survey which identified 55 known and potential sites of archaeological significance in the designated coastal zone. The 1992 survey also established “probability zones” for archaeological resources.

In 1996, there were five roads within the county that were designated scenic and historic. All five roads were located in the designated coastal zone. The five roads were the Jungle Trail, Old Winter Beach Bridge Road, Quay Dock Road, Gifford Dock, and Fellsmere Grade. A management plan for one of the five roads, Jungle Trail, was adopted by the County in 1989.

Estuarine Water Quality

In 1996, the Florida Department of Environmental Protection (FDEP) rated most of the Indian River Lagoon (IRL) in the county as Class III (Recreation/Propagation and Management of Fish and Wildlife). At that time, waters conditionally approved for shellfish harvesting (Class II) in the County were limited to a portion of the IRL in the vicinity of the Pelican Island Wildlife Refuge (east of the Intracoastal Waterway) and in a small portion of the IRL near the south county line.

- Aquatic Preserves

In 1996, there were two State Aquatic Preserves within the County. The Southern segment of Aquatic Preserve No.7 encompassed the area from Malabar to the northern City Limits of Vero Beach, while Aquatic Preserve A-9 encompassed the area south of the City Limits of Vero Beach to the City of Ft. Pierce. The Aquatic Preserves are depicted in Figure 4.

- Non-Point Source Pollution

In 1996, non-point source pollution was identified as a substantial threat to estuarine water quality. At that time, the Indian River Lagoon National Estuary Program (IRLNEP) indicated that nutrient-rich (high concentrations of nitrogen and phosphorous) stormwater runoff was being transported into the Lagoon by the North, South and Main Relief canals.

- Aquaculture

In 1996, aquaculture was conditionally permitted in two regions of the County. The first region encompassed those waters east of the Intracoastal Waterway (ICW) from Sebastian Inlet to Spratt Point north of the Wabasso Causeway. The second region included waters east of the ICW at the south county line, west of Round Island. Together, these two regions comprised approximately 8,400 acres available for aquaculture.

- Submerged Aquatic Vegetation

At the time of the last major comprehensive plan update, there were seven species of submerged aquatic vegetation (SAV) which occurred in the IRL. These were: shoal grass (*Halodule wrightii*), manatee grass (*Syringodium filiforme*), turtle grass (*Thalassia testudinum*), star grass (*Halophila engelmanni*), paddle grass (*Halophila decipiens*), Johnson's seagrass (*Halophila johnsonii*), and widgeon grass (*Ruppia maritima*).

In 1996, 2,934 acres (approximately 18%) of the Indian River Lagoon were covered with submerged aquatic vegetation (SAV). Due to low levels of salinity, SAV coverage was least in the portion of the IRL within the City Limits of Vero Beach. While moderate SAV coverage was present south of

Sebastian Inlet to John's Island, SAV coverage was most prevalent in the section of the County south of the 17th Street Bridge, extending to the south county line.

- Mosquito Impoundments

In 1996, there were 44 estuarine wetlands associated with the Indian River Lagoon. Thirty of those estuarine wetlands, totaling 3,241 acres, were impounded for mosquito control purposes. Of those 30 impounded wetlands, two were permanently flooded year round, and eight were seasonally pumped. Eleven of the 30 impoundments were connected to the lagoon via culverts and were undergoing "rotational impoundment management" (RIM).

Natural Disaster Planning

In 1996, the County's emergency evacuation time was estimated at less than 12 hours in the case of a Category 3, 4 or 5 hurricane. At that time, the total population vulnerable to a hurricane was estimated at 60,000. Of this total, it was estimated that 19% (11,400) would seek shelter at one of the county's 11 available emergency shelters during a hurricane event. In 1996, there were approximately 7,000 mobile homes in the County, representing approximately 15 % of the total housing units in the County at that time.

- Coastal High Hazard Area

In 1996, the Coastal High Hazard Area (CHHA) included all areas of the County designated as evacuation zones for a Category 1 hurricane. The CHHA included areas along the St. Sebastian River and along the Indian River Lagoon on both the barrier island and the mainland.

- Hurricane Vulnerability Zone

In 1996, those areas in the county that were threatened by beach erosion, flooding, storm surge, or other storm-related damages from a Category 3 hurricane were considered part of the "Hurricane Vulnerability Zone" (HVZ). At that time, the HVZ encompassed the entire barrier island, the coastal mainland east of U.S. Highway 1 (approximately 1-2 miles inland), and properties along the St. Sebastian River.

Beaches and Dunes

In 1996, a total of 6.6 miles of beaches were defined as "areas of critical erosion." Most of this erosion was occurring in the northern section of the unincorporated county (north of Wabasso Beach) and within the city limits of Vero Beach.

Public Access Facilities

In 1996, the number of river and beach front public access facilities included nine full-service beach parks; 21 beach access facilities, three county-owned public boat launching facilities accessing the Indian River Lagoon; eight parks on the lagoon; and two parks on the St. Sebastian River. Within the coastal zone, there were 15 inland parks of various sizes.

In addition to county and municipal parks, there were 21 spoil islands with recreational access. The Sebastian Inlet State Recreation Area was the County's only state park.

Infrastructure

- Potable Water

At the time of the last major update, there were three regional water treatment plants which supplied potable water throughout the County's Urban Service Area (USA). Public water service included provision of potable water to 141 subdivisions with undersized lots (lots less than ½ acre in size) in the unincorporated county and in the City of Sebastian.

- Sanitary Sewer

In 1996, there were six regional wastewater treatment plants (WWTPs). Provision of sewer service included 72 of 136 subdivisions in the county classified as having "undersized" lots.

- Stormwater Management

In 1996, the County established level of service standards for stormwater management associated with new developments and local roads. That level of service was stormwater storage and positive drainage for a 25-year/24-hour storm event. At that time, the Indian River Farms Water Control District (IRFWCD) was the only water control district with operation and maintenance staff to operate flow control structures, and the only F.S. 298 Special Drainage District in the county to have adopted level of service standards.

- Traffic Circulation

At the time of the last major update, there were three bridges connecting the barrier island to the mainland in the County. Two of those bridges, the Merrill-Barber Bridge (four-lane fixed span) and the 17th Street Bridge (four-lane fixed span), were located in the City of Vero Beach. The third bridge (the Wabasso Bridge) was located in the unincorporated county and was the only access to the barrier island in northern Indian River County. In 1996, the northern section of Indian River Boulevard extending to 53rd Street was newly completed.

Ports

In 1996, there were no existing or proposed deep-water ports in Indian River County.

EXISTING CONDITIONS

In 2008, the condition categories within the designated coastal zone were as follows: land use; economy; water-dependent/water related uses; natural and historic resources; estuarine water quality; natural disaster planning; beaches and dunes; public access facilities; infrastructure; and ports. Those categories are addressed below.

Land Use

In 2008, 53,586 acres were classified as “agricultural use” within the Coastal Zone. Consequently, agriculture was the dominant land use category in the coastal zone. The second largest land use category within the coastal zone was residential. Acreages for existing land use classifications are contained in the Future Land Use Element Section of the Evaluation and Appraisal Report.

- Barrier Island

Currently, the unincorporated portion of the barrier island consists mainly of scattered low-density residential development. There is limited commercial development located at the intersection of CR 510 and SR A1A.

Economy

The County’s current annual employment is 61,149. Of that number, 3,505 are employed in the agriculture, fisheries, and forestry industries. In 2006, 2,998 commercial fishing trips resulted in a commercial finfish catch of 841,774 pounds, while 48 fishing trips for invertebrates, such as shrimp and crabs, yielded 9,638 pounds of commercial catch.

According to the most recent Agricultural Census, there were 47,539 acres of actively cultivated citrus groves in Indian River County in 2004. In that year, 17,263,000 boxes of citrus fruit were harvested, ranking Indian River County 7th in the state for overall citrus production.

According to the *Indian River Lagoon Economic Assessment and Analysis Update (2007)*, the total economic impact of visitors to the Indian River Lagoon in Indian River County was over \$110 million in 2007. In that same year, tourist activities on the Indian River Lagoon created 970 local jobs. In 2007, visitors to the Indian River Lagoon in Indian River County spent more time (27% of each day) recreating on the lagoon than lagoon visitors in any other county.

Water Access and Water Related Uses

According to the Florida Department of Environmental Protection, there were approximately 11,170 boats registered in the County in 2007.

Currently, there are 24 boat ramp lanes at 18 boat ramps located throughout the coastal zone of the County. Of these, eight boat lanes are located at four county-owned public boat launch sites. These include: Wabasso Causeway Park, Donald McDonald/Dale Wimbrow Park, the Oslo boat ramp (unimproved) adjacent to the Oslo Riverfront Conservation Area (ORCA), and Round Island Park. Two parks with public boat lanes, Riverside Park and MacWilliams Park, are located in the City of Vero Beach, while the City of Sebastian has two public boat ramps. The Sebastian Inlet State Recreation Area also has public boat ramps. The remaining boat ramp lanes are located at commercial facilities.

At present, there are more than 1,186 boat slips (1,128 wet slips and 58 dry slips) located at the public and private marinas throughout the County. While the City of Vero Beach Municipal Marina is the only commercial marina located in the City of Vero Beach, two commercial marinas are located in the City of Sebastian. Over 40% of the boats moored at these marinas are designated as Class 2 watercraft (25 to 40 feet). At the present time, Grand Harbor Marina is the only commercial marina located in unincorporated Indian River County. Consisting of 178 wet slips, the Grand Harbor Marina has room to expand to a total of 468 wet slips.

Natural and Historic Resources

- Flora

In 2008, there were 24 plant listed plant species in the county. A complete list of these species can be found in the Conservation Element.

- Fauna

In 2008, there were 45 listed animal species in the county. Recently, the status of the American crocodile (*Crocodylus acutus*) was changed from endangered to threatened, and the gopher tortoise was upgraded from a state-listed species of special concern to a threatened species.

Federally threatened and endangered species found in the coastal zone include: the Florida scrub-jay (associated with the Atlantic coastal ridge); the West Indian Manatee (associated with the Indian River Lagoon); and several species of sea turtles (associated with beaches and dunes). A complete list of listed animals in the county can be found in the Conservation Element.

- Florida scrub-jay

In March 2000, Indian River County adopted the *Sebastian Area-Wide Florida Scrub-Jay Habitat Conservation Plan (HCP)* in coordination with the City of Sebastian. The HCP allows residential development within scrub jay habitat of the Sebastian Highlands subdivision. In exchange for this allowance, Indian River County agreed to manage county-owned scrub conservation lands to maximize scrub-jay habitat.

In 2006, 15 scrub jay families were documented within the HCP area. Recently, resident scrub jays were documented in the Vero Lake Estates area. Prior to 2008, scrub jays were not known to inhabit that part of the county.

- Florida Manatee

Since the last comprehensive plan update, Indian River County adopted a *Manatee Protection and Boating Safety Comprehensive Management Plan (MPP)*. The purpose of the MPP is to establish a strategy that equitably balances manatee protection, habitat protection, and boating safety with recreational and commercial marine interests. In 2005, the objectives and polices of the MPP were incorporated into the Coastal Management Element of the County's comprehensive plan.

- Sea Turtles

Recently, Indian River County adopted a Habitat Conservation Plan (HCP) for sea turtles. That plan addresses the impacts of sand renourishment and shoreline armoring on nesting sea turtles. Prior to adoption of the Sea Turtle HCP, there were no comprehensive data collected regarding sea turtle nesting on county beaches.

- Gopher Tortoises

In 2007, the Florida Fish and Wildlife Conservation Commission's Gopher Tortoise Management Plan was revised. At that time, the gopher tortoise was upgraded from a species of special concern to a threatened species.

- Historic Resources

According to the Florida Master Site File (FMSF), 156 archaeological surveys have been conducted in Indian River County since 1992. Currently, the FMSF lists 145 archaeological sites, 1,011 historic structures, and 26 sites on the National Register of Historic Places in Indian River County (including municipalities). In 2007, there were 2,227 parcels in the unincorporated county with structures at least 50 years old.

Currently, there are five roads within the county that are designated historic and scenic in the designated coastal zone. Those five roads are: Jungle Trail, Old Winter Beach Bridge Road, Quay Dock Road, Gifford Dock, and Fellsmere Grade.

Estuarine Water Quality

In 2008, Lagoon waters within the county were designated by the State as being "Class III" from approximately Grand Harbor south to an east/west line intersecting the northernmost tip of Round Island, and along the western side of the Intercoastal Waterway (ICW) from the Wabasso Causeway north to the north county line. At that time, "Class II" waters extended from the north county line south to the Wabasso causeway east of the ICW, from the Wabasso causeway south to the northern limit of the Grand Harbor development, and from an east/west line intersecting the northern tip of Round Island south to the south county line.

Recently, a SJRWMD study found that one in 10 acres (i.e., 10%) of the Indian River Lagoon bottom is covered in muck. In 22 of 72 sites tested (lagoon-wide), muck was found to be 39 inches deep or more. In 2006 and 2007, approximately 800,000 cubic yards of muck were removed from the St. Sebastian River as part of a \$20 million project being conducted by the SJRWMD. The muck removal project is expected to be completed in 2009, at which time the muck removal will total approximately two million cubic yards.

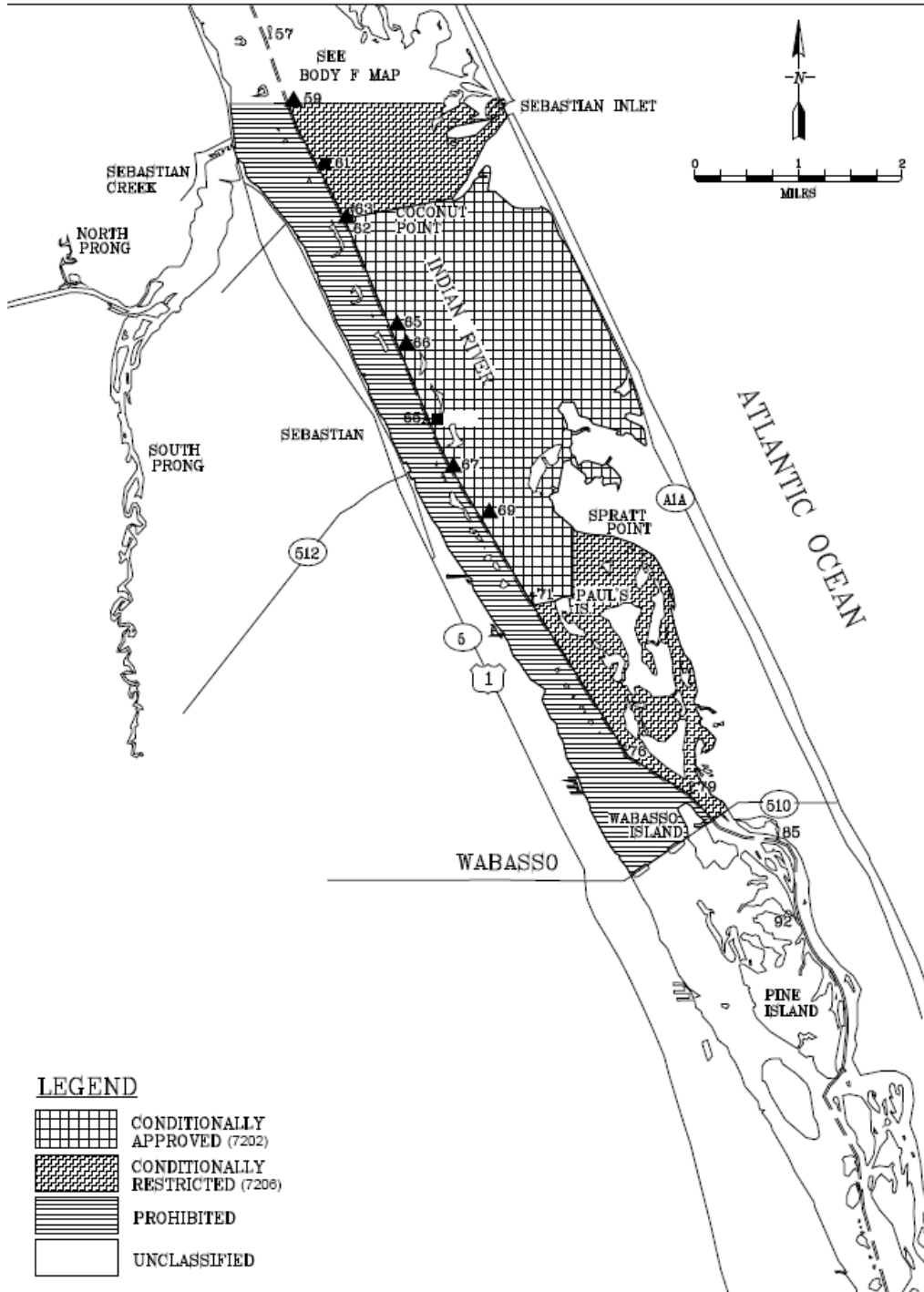
- Aquatic Preserves

Presently, there are two State Aquatic Preserves within Indian River County. One Aquatic Preserve extends from Malabar to the northern City Limits of Vero Beach, while the other extends from the southern limits of the City of Vero Beach to the City of Ft. Pierce.

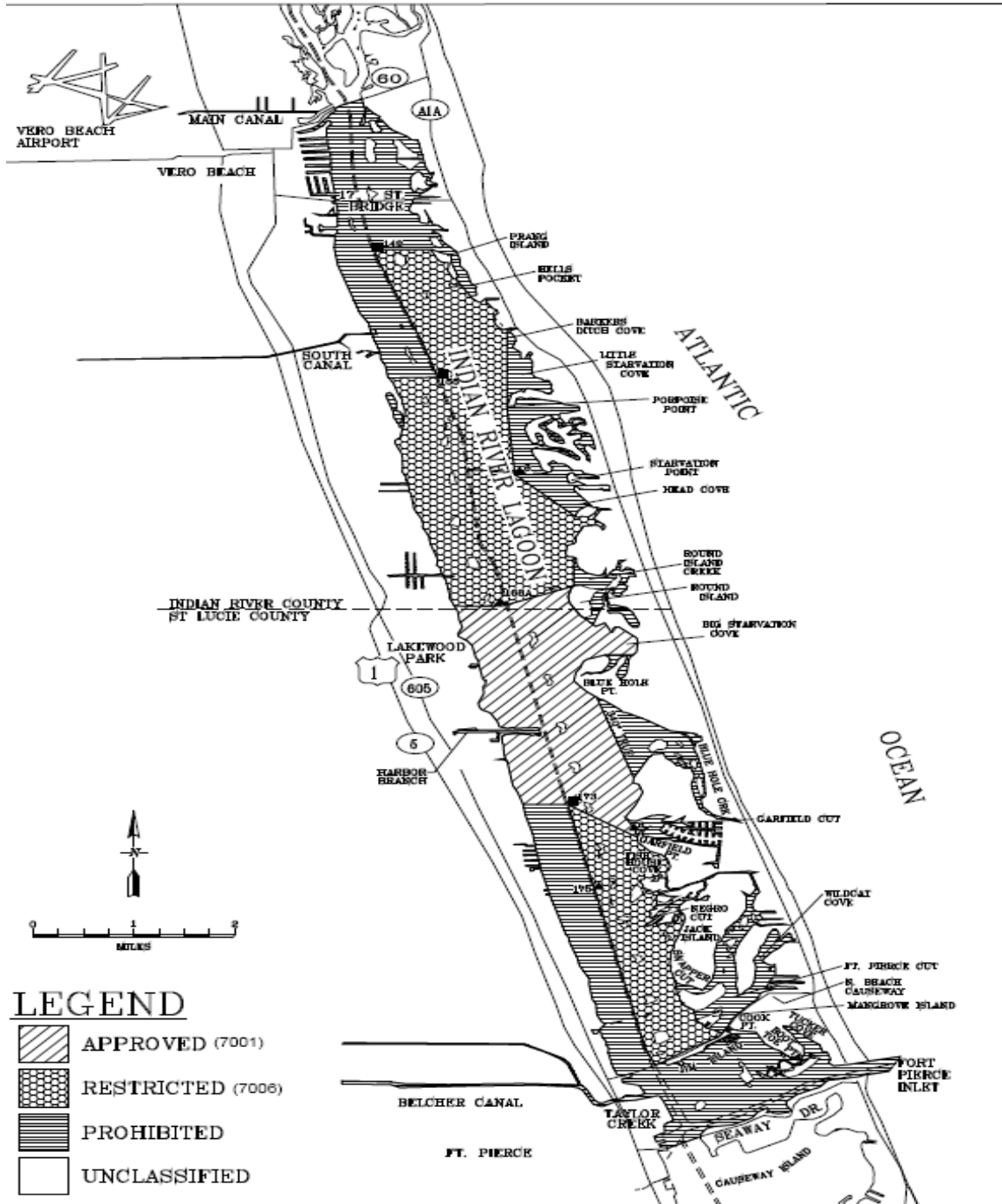
- Aquaculture

Currently, aquaculture is permitted in waters of the Indian River Lagoon north of the Wabasso causeway to the Sebastian Inlet, east of the Intracoastal Waterway (ICW), and south of the City of Vero Beach extending past the south county line. Aquaculture in Indian River County focuses on the harvest of clams. At present, 8,400 acres of surface water are available for aquaculture. In 2006, 98 aquaculture leases occupied a total of 318 acres of surface waters in Indian River Lagoon among the tri-county area of Volusia, Brevard, and Indian River Counties.

SHELLFISH HARVESTING AREA CLASSIFICATION MAP #72 (Effective: June 18, 1997)
 North Indian River (#72) Shellfish Harvesting Area in Indian River County



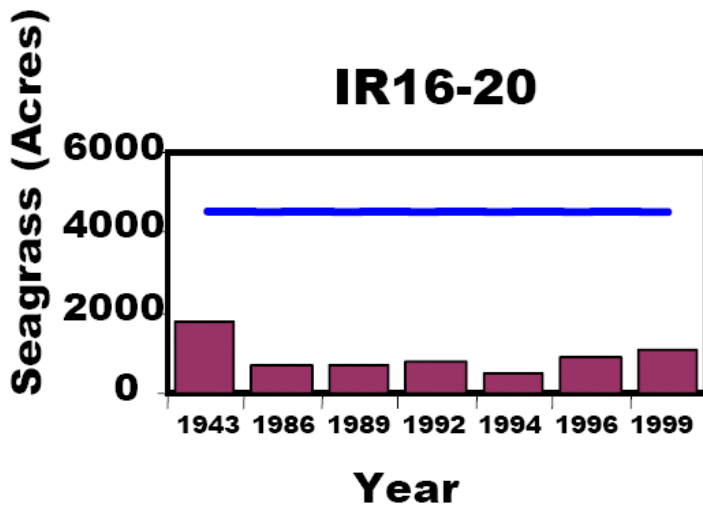
SHELLFISH HARVESTING AREA CLASSIFICATION MAP #70 (Effective: June 18, 1997)
 Indian River/St. Lucie (#70) Shellfish Harvesting Area in Indian River and St. Lucie Counties



- Submerged Aquatic Vegetation

There are seven species of submerged aquatic vegetation (SAV) occurring in the IRL. These are: shoal grass (*Halodule wrightii*), manatee grass (*Syringodium filiforme*), turtle grass (*Thalassia testudinum*), star grass (*Halophila engelmanni*), paddle grass (*Halophila decipiens*), Johnson's seagrass (*Halophila johnsonii*), and widgeon grass (*Ruppia maritima*). Turtle grass is only known to occur South of Sebastian Inlet.

According to a 2002 update of the Indian River Lagoon Surface Water Improvement and Management Plan (SWIM), submerged aquatic vegetation coverage increased by 50% in the overall lagoon from 1996 to 1999. During that time, submerged aquatic vegetation coverage increased within IR16-20, or the central portion of the lagoon near the city of Vero Beach. That section of the lagoon historically displayed low coverages of submerged aquatic vegetation due to inherent low water qualities.



Indian River Lagoon SWIM Plan – 2002 Update

In 2007, the Sebastian Inlet District dredged a deep-water channel connecting the Sebastian Inlet to the Indian River Lagoon Intracoastal Waterway (ICW). Prior to this channel, sensitive seagrasses on shallow shoals along the inside of the inlet were subject to damage from boat traffic. These seagrass areas are now clearly marked, and boat traffic going to and from the inlet is directed around these areas. In addition to the protection of sea grass, the deep channel facilitates a more rapid flushing of the lagoon with seawater.

- Mosquito Impoundments

The Indian River Mosquito Control District (IRMCD) is responsible for managing the mosquito impoundments in the county. At the present time, the IRMCD manages 30 mosquito impoundments, totaling 2,657 acres, in the county. Within the 30 impoundments, 1,338 acres are held in public ownership, while 1,319 acres are privately owned. The majority of the impoundment areas (2,226 acres) are connected to the Indian River Lagoon (IRL) via 126 culverts, although 431 acres, including approximately 30 acres that remain permanently flooded, are not connected to the IRL.

The County, along with other state and regional government agencies, is currently a participant in the Indian River Lagoon Blueway Program. Under that program, various government agencies are collectively cooperating to acquire private tracts of land adjacent to the IRL.

Natural Disaster Planning

- Coastal High Hazard Area

Currently, the Coastal High Hazard Area (CHHA) includes all areas of the county designated as evacuation zones for a Category I hurricane. As such, the CHHA includes areas along the St. Sebastian River and areas along the Indian River Lagoon on both the barrier island and the mainland.

In 2006, the Florida Legislature passed House Bill 1359, which changed the State's definition of the CHHA. The CHHA is now defined as the area below the elevation of the Category 1 storm surge line as established by a "Sea, Lake, and Overland Surges from Hurricanes" (SLOSH) computerized storm surge model.

According to House Bill 1359, local governments are required to amend their Future Land Use Map and Coastal Management Element to include the new definition of the CHHA and to depict the CHHA line on the future land use map. Indian River County recently initiated an amendment to its Coastal Management Element and Future Land Use Map to reflect the newly defined CHHA.

- Hurricane Vulnerability Zone

Between 1995 and 2007, the county's population grew by approximately 39,382 residents to 139,757. Although the population of the county increased during this period, the evacuation time for a Category 3-5 hurricane did not significantly increase. At this time, the estimated evacuation time for the Hurricane Vulnerability Zone remains at less than 12 hours, 4 hours less than the state's maximum requirement of 16 hours.

- Comprehensive Emergency Management Plan

In 1997, the County adopted a Comprehensive Emergency Management Plan (CEMP), which was then revised in 2007. That plan replaced the Peacetime Emergency Plan (PEP), the Florida Nuclear Civil Protection Plan, and the Disaster Event Recovery Plan. The CEMP defines the roles and relationships of various agencies in response to a natural disaster. Those agencies include state agencies, special districts, local governments, and volunteer organizations.

- Local Mitigation Strategy

In response to several disaster events, including Hurricane Andrew (1992), the Florida Department of Community Affairs (DCA) initiated a Local Mitigation Strategy Program. That program encouraged private and public sector entities to take actions to permanently reduce or eliminate the long-term risk to people and property by different types of hazards.

In 1999, Indian River County adopted a Unified Local Mitigation Strategy (LMS), which was later reviewed and updated in 2005. To ensure that the LMS adequately addresses current threats to the community, the document is reviewed and updated every five years.

Beaches and Dunes

In 2006, there were 15.7 miles (70%) of the County's oceanfront shoreline that were defined as "areas of critical erosion". Beach erosion at that time was occurring in all areas of the county.

To address shoreline erosion, a Prefabricated Erosion Prevention reef (PEP Reef) was constructed in 1996 just offshore of the terminus of S.R. 60 in the City of Vero Beach. Profile surveys that have been conducted since the construction of the PEP Reef indicate that the shoreline has stabilized in the area of the PEP Reef.

In 1998, the county adopted the Indian River County Beach Preservation Plan (BPP). That plan identifies future beach restoration projects, and prescribes shoreline change/coastal erosion monitoring. Consistent with that plan, 500,000 cubic yards of sand have been dredged from offshore and placed along 2.2 miles of beach in the northern section of the County (BPP Sectors 1 and 2), while 375,000 cubic yards of sand have been placed on 2 miles of beach in the south section of the county (BPP Sector 7). Future plans include similar large-scale beach restoration projects in BPP Sector 3 (7 miles of beach in north county) and BPP Sector 5 (2.5 miles of beach in central county).

Recently, the county completed a number of small-scale dune restoration projects at county beaches. Using state and federal emergency funding, the County replaced 600,000 cubic yards of sand on local beaches.

In 2005, the County adopted a Sea Turtle Habitat Conservation Plan (HCP). The County Coastal Engineering Section is responsible for implementing the Sea Turtle HCP. Under this plan, the

county compiled comprehensive data regarding sea turtle nesting on local beaches. Prior to adoption of the Sea Turtle HCP, no comprehensive data existed regarding sea turtle nesting on county beaches.

Public Access Facilities

Currently, there are nine full-service beach parks; 21 beach access facilities; three county-owned public boat-launching facilities accessing the Indian River Lagoon (six ramps); eight parks on the lagoon; and two parks on the St. Sebastian River. Within the coastal zone, there are fifteen inland public parks of various sizes and amenities.

Infrastructure

At the present time, the majority of county owned infrastructure is located within the designated coastal zone.

- Potable Water

Currently, there are four regional water treatment plants that supply potable water throughout the County's Urban Service Area (USA). Those plants are the North County Plant, the South County Plant, the City of Fellsmere Plant, and the City of Vero Beach Plant. To meet growing water demand, expansions to existing water treatment facilities are planned.

- Sanitary Sewer

There are six wastewater treatment plants (WWTPs) in the County at the present time. Sanitary sewer is available to all developments within the urban service area.

- Stormwater Management

In 2006, the Indian River County Public Works Department created a new stormwater division. The stormwater division participates in the design of stormwater systems, educates the public on relevant stormwater topics, trains individuals involved in the design/construction of stormwater control systems, and enforces stormwater and erosion control standards.

In 2007, construction work began on the Egret Marsh and the Spoonbill Marsh projects. Once complete, these projects will employ natural biological processes to treat wastewater and return it to local water bodies either directly or indirectly connected to the Indian River lagoon.

Currently, the County is constructing a pollution control facility in the Main Relief Canal. This facility is to be completed in 2008. The facility will use "series screening methodology" designed to

remove litter and debris from up to 300 million gallons per day that outflow into the Indian River Lagoon.

Recently, the SJRWMD completed the 166-acre Sebastian Stormwater Park, located within the City of Sebastian along the Collier canal and the Elkam waterway, both of which discharge into the south prong of the St. Sebastian River. According to a U.S. Environmental Protection Agency (EPA) report, the Stormwater Park will reduce total suspended solids entering the south prong annually by 173,280 pounds. The park is also projected to reduce annual nitrogen and phosphorous discharge into the south prong by 3,749 pounds and 1,034 pounds, respectively. Because the St. Sebastian river discharges into the Indian River Lagoon, the majority of these pollutants would otherwise eventually reach the lagoon.

- Traffic Circulation

At the present time, there are three bridges connecting the barrier island to the mainland in Indian River County. Two bridges are located in the City limits of Vero Beach. The Wabasso Bridge is the only access to the barrier island in the northern section of the County.

Two road projects that will improve emergency evacuation timeframes in the coastal zone are currently underway. One of these projects is the four-laning of SR 60 west of I-95 to the Florida Turnpike, a project which will be completed in 2008. The other project relates to improvements to U.S. Highway 1. That project will include six-laning from 4th Street south into St. Lucie County to the Turnpike Feeder Road. The six-laning of U.S. 1 south of 4th Street to the Feeder Road is scheduled to be completed by 2015.

Ports

There are no existing or proposed deepwater ports in Indian River County.

ANALYSIS

Land Use

A complete analysis of land use data, including a comparison of land use acreages by classification, is contained in the Future Land Use Element Section of the Evaluation and Appraisal Report (EAR).

Since the last major comprehensive plan update, comprehensive plan policies, including the Future Land Use Map, have successfully directed new residential and nonresidential development to designated areas of the county. During this period, there were few amendments to the land use map and only minor adjustments to the county's Urban Service Area boundary. The only significant changes to the Future Land Use Map in the previous decade were amendments designating publicly

acquired environmental lands for conservation.

Going forward, the major land use issues facing Indian River County in the coastal zone and in the overall county are urban sprawl, rural sprawl, agricultural preservation, and conservation of natural systems within the context of development. Policies to address these issues should be incorporated into the Future Land Use Element and Conservation Element of the comprehensive plan.

Economy

The Economic Development Element component of the EAR describes Indian River County’s economy as largely reliant on service oriented industries and lacking in diversity. Despite this current lack of economic diversity, Indian River County has attractive qualities that certain businesses look for, which will aid the County as it seeks to diversify its economic base in the future. These qualities include an available development-ready supply of land and an exceptional quality of life (warm weather, beaches, minimal population density, resource-based recreational opportunities, etc.).

- Ecotourism

A significant aspect of the County’s quality of life is its natural resources, not the least of which is the Indian River Lagoon. Resources such as the lagoon provide significant economic benefits to the county. According to the *Indian River Lagoon Economic Assessment and Analysis Update (2007)*, the total economic impact in 2007 of visitors to the Indian River Lagoon in Indian River County was over \$110 million.

Because of its natural assets, as well as cultural heritage, Indian River County has an opportunity to capitalize on ecotourism. From an economic development standpoint, the County, through the County environmental lands program, is actively preserving some of its greatest natural assets and helping to position itself for maintaining a strong base for ecotourism related activities. Those activities include hiking/walking, bird watching, fishing, bicycling, natural photography, nature appreciation, environmental education, wildlife viewing, and kayaking/boating. The County should capitalize on its land preservation efforts by:

- continuing to acquire property as a method to preserve the County’s existing character that is attractive to residents and tourists alike;
- making public access improvements to the preserved environmental lands; and
- marketing the County’s existing and developing environmental assets.

- Commercial fisheries

Comparison of 1996 and 2006 data indicates a 32% drop in commercial finfish catch in the

county, from 1,236,473 pounds to 841,774 pounds. In 1996, the annual shellfish harvest in the county was 85,253 pounds. By 2006, the annual shellfish harvest was down to 9,638 pounds.

These decreases may be due to a number of factors. In 1995, the state imposed a net ban that has resulted in a decline in commercial fish landings statewide over the years. Another factor is a decline in “working waterfronts” in the county, particularly in the City of Sebastian, which is the hub of commercial fishing in the county. In Sebastian, several commercial fish houses have been converted to private marinas. Also, hurricanes in 2004 caused damage to riverfront businesses, including the Archie Smith Fish House, which closed due to storm damage.

Decline in working waterfronts is a statewide issue. In 2008, the State Legislature created “The Stan Mayfield Working Waterfronts” Florida Forever grant program to preserve and restore commercial fishery businesses. To fund the program, the Legislature provided 2.5% of the total Florida Forever program distribution, which at the current level provides \$7.5 million annually to the program.

In 2009, The Stan Mayfield Working Waterfronts funds will be available to acquire land directly used for the purposes of commercial harvesting of marine organisms or saltwater products. The funds may also be used for the acquisition of land used for exhibitions, demonstrations, educational venues, civic events, and other purposes that promote and educate the public about the economic, cultural, and historic heritage of Florida's traditional working waterfronts.

In 2007, the County acquired the Archie Smith Fish House under the County’s environmental lands program, with plans to restore the fish house as a visitor center and “demonstration” working waterfront. In the future, the County should seek grant funding for restoration of the fish house.

- Agriculture

From 1996 to 2004, Indian River County’s annual production of citrus declined by 21%. During that time, Indian River County dropped from the sixth largest citrus producer in the state to the seventh largest producer. This decline in citrus production is a statewide phenomenon and attributable to various agricultural diseases and the conversion of agricultural lands to other uses.

Recently, the County revised its landscape ordinance to prohibit the planting of Caribbean fruit fly and citrus greening host plants, except as may be planted by government institutions or research centers conducting scientific research on control of agricultural diseases. The County should continue its policy of prohibiting the planting of agricultural disease host plants.

Currently, Indian River County allows, but does not require, removal of citrus trees from abandoned groves. Un-maintained citrus trees in abandoned groves have the potential of harboring agricultural

diseases, to the detriment of active citrus groves in the region. To address this problem, the County should adopt a policy, in the Conservation Element of the comprehensive plan, requiring landowners to remove un-maintained citrus trees from abandoned groves.

Water Access and Water Related Sites

Between 1996 and 2007, registered boats in Indian River County increased by 32%, from 8,900 boats to 11,740. During that time period, the County issued 468 building permits for single-family docks. Over the past ten years, the number of boat slips at multi-slip marinas and the number of boat ramps in the county have not substantially changed.

- Boat ramps

Most registered boats in the county are trailered and not stored at boat slips. Consequently, most boat owners rely on the availability of boat ramps to access waterways. According to the Indian River County Manatee Protection and Boating Safety Comprehensive Management Plan (MPP), the Florida Department of Environmental Protection (DEP) has a standard recommendation for the number of boat ramps (lanes) per person in a geographic area. That recommended level of service (LOS) is a minimum of one boat lane per 10,000 residents. While Indian River County has approximately one boat lane for every 5,823 residents, the current LOS standard does not account for the use of boat lanes by seasonal residents or visitors from outside the county.

According to a 1995 boating study by the Florida Institute of Technology (FIT), the typical zone of influence for boat ramps throughout the county averages three miles or less. As a result of a lack of adequate boat ramps in the southern section of the county on the mainland, the “zones of influence” for MacWilliams Park and Riverside Park in Vero Beach are twice as large (over six miles) as those for other boat ramps located in the county.

To improve trailered boat access to the Indian River Lagoon on the south mainland, the County is in the process of obtaining permits to replace the Oslo boat ramp that is currently in disrepair. Initial plans to expand the parking area associated with the Oslo boat ramp, however, have been abandoned due to environmental concerns. Notwithstanding, the Oslo boat ramp replacement will afford an improved, safer access to the Indian River Lagoon for small boats (less than 21 feet in length) in the south mainland portion of the county.

Currently, the County owns land at the river terminus of Gifford Dock Road (a.k.a. 45th Street). That property has a fishing pier, but no boat launch facility. Going forward, the County should consider installing a boat ramp at the Gifford Dock Road riverfront.

- Multi-slip dock facilities

Adopted in 2000, the County’s MPP established nine marina siting zones in the Indian River Lagoon

and the St. Sebastian River. Restrictions on marina siting within these zones vary, depending on the characteristics of each zone. The zones were established based a number of factors, including: density of submerged aquatic vegetation (SAV); manatee use abundance; manatee mortality; water depth and proximity to existing channels; and boating patterns.

Currently, county staff works with the Florida Fish and Wildlife Conservation Commission (FWC) in implementing the plan. In 2005, the Coastal Management Element was revised to include the objectives and polices of the MPP.

Going forward, the County should continue to implement the MPP by reviewing all proposed multi-slip dock facilities and boat ramps in the county and requiring that those facilities meet criteria set forth in the MPP. In 2009, the MPP is due to undergo its five-year update. At that time, the County should coordinate with the FWC and consider modifications to the MPP based on a review of the mortality data for Indian River County.

Conservation of Natural Resources

From 1996 to 2007, the total acreage of all native plant communities in the county decreased. The loss of these plant communities is largely attributable to development of previously undeveloped lands within the Urban Service Area of the coastal zone. Despite these losses, progress has been made in the past ten years with respect to lands acquired in the coastal zone for conservation and restoration, or protected under conservation easements. These include:

- Federal acquisition of land on north Jungle Trail for expansion of the Pelican Island National Wildlife Refuge (±500 acres);
- State, SJRWMD and County acquisition of the Carson Platt Estate portion of the St. Sebastian River Preserve State Park (±5,334 acres of the overall ±22,000 acre park);
- County acquisition of conservation lands within the Indian River Lagoon Blueway, including:
 - The South Oslo Riverfront Conservation Area (143 acres)
 - The Harmony Oaks Conservation Area (90 acres)
 - The Round Island South Conservation Area (59 acres)
 - The Oyster Bar Marsh Conservation Area (96 acres)
 - The Lost Tree Islands Conservation Area (508 acres)
- Conservation of native uplands under conservation easements on private development sites, as a result of the County's native upland set-aside land development regulation (±500 acres).

An objective of the County's environmental lands acquisition program is for the County to acquire

environmentally significant lands that contribute to wildlife corridors and greenways that interconnect existing conservation areas. The following wildlife corridors in the coastal zone warrant conservation:

- Indian River Lagoon Blueway (including the St. Sebastian River Greenway)
- Atlantic Coastal Sand Ridge (Winter Beach area)
- Ten-mile Ridge (between CR 510 and SR 60)

For the County to succeed in conserving significant environmental lands within the referenced wildlife corridors, a number of approaches, beyond just fee-simple acquisition, have to be employed. Those approaches include transfer of development rights, less than fee-simple purchase of conservation easements, requirement(s) of natural area set-asides associated with new developments, and requirement(s) of “greenbelts” for new towns established outside of the Urban Service Area.

- Invasive Exotic Plants

The Florida Exotic Pest Plant Council (EPPC) maintains a list of invasive exotic plants found in Florida. The EPPC classifies invasive exotic plants as Category I invasives when such plants are known to alter native plant communities by displacing native species, changing community structures or ecological functions, or hybridizing with natives. Category II invasive exotics are plants that have increased in abundance or frequency in natural areas but have not yet altered Florida plant communities to the extent shown by Category I species. These species may become Category I if ecological damage is demonstrated.

Since 1990, the County’s upland habitat protection ordinance has contained requirements that certain nuisance exotic vegetation, including Brazilian pepper, Australian pine and melaleuca, be removed from development sites. Recently, the County’s landscape ordinance was revised to require that all invasive exotic plants listed by the EPPC as Category I plants be removed from new development project sites.

In the future, the County should continue its policy to require that nuisance exotic plants be removed from development sites, and that such sites be maintained free of nuisance exotic plants.

- Native Upland Set-Asides

In 2007, the county’s native upland set-aside land development regulations were revised. Now, county regulations require that a minimum of 15% of the native upland habitat on parcels 5 acres and larger be preserved onsite. The previous minimum required native upland set-aside was 10%. Since 1996, approximately 500 acres of native habitat have been preserved in upland set-aside tracts related to private developments.

The 2007 native upland set-aside revisions also included a provision prohibiting linear set-aside areas less than 50 feet wide. This change was based on the premise that the narrower an upland set-aside, the less the ecological value.

As a result of the upland set-aside ordinance revisions, recent native upland easements have consisted of larger and more ecologically valuable tracts of land on development sites. In the future, the county should continue its set-aside requirements as reflected in the policies of the Conservation Element of the comprehensive plan.

- Threatened and Endangered Species

Between 1996 and 2007, the County adopted plans to conserve and protect Florida scrub jays, manatees, and sea turtles. Following is a summary and analysis of those plans.

- o Florida Scrub-Jay Habitat Conservation Plan (HCP)

In 2000, Indian River County (and City of Sebastian) adopted the Sebastian Area-Wide Scrub Jay Habitat Protection Plan (HCP). Since that time, the number of documented scrub jay families has remained constant. Prior to the scrub jay HCP adoption, a drastic decline in the number of scrub jay families occurred from 1991 to 1998, resulting in a 50% decrease in the number of scrub jays. Since HCP adoption, the number of scrub jay families has fluctuated by less than 10%.

During the last five years, intensive habitat restoration has occurred within the “Scrub Jay Habitat Compensation Areas,” including the Wabasso Scrub Conservation Area, Pelican Island Elementary School Scrub Habitat, and the North Sebastian Conservation Area. These areas were successfully timbered and show a marked reduction in pine canopy and an increase in suitable scrub-jay habitat. These areas were also the subject of successful prescribed burns.

In the future, the County should continue to implement the scrub jay HCP by managing its scrub conservation lands with periodic prescribed burns, mechanical clearing, and timbering (as necessary) to maximize scrub jay habitat. Because of the drastic decline in scrub jay families prior to adoption and the stabilization in numbers post adoption, the evidence indicates that the HCP has been successful.

At this time, the HCP covers only a portion of the County. In 2008, scrub jays were documented inhabiting areas of the County, such as Vero Lake Estates, that historically did not support scrub jay populations. For that reason, the County should develop policies, in its Conservation Element, to expand its scrub jay HCP countywide, beyond the Sebastian area and inclusive of scrub-jay habitat within municipalities.

- o Manatee Protection Plan

In 2000, Indian River County adopted a Manatee Protection and Boating Safety Comprehensive Management Plan (MPP). Currently, county staff works with the FWC in implementing the plan. In 2005, the Coastal Management Element of the County Comprehensive Plan was revised to include the objectives and polices of the MPP.

Overall, collisions with watercraft account for the largest portion of manatee deaths. Since MPP adoption, the percentage of manatee deaths caused by watercraft collisions decreased from 29.6% to 23% in Indian River County. The actual number of overall collision deaths, however, increased from an average of one per year pre-MPP adoption to two per year post-MPP adoption. This average annual increase may be due to the fact that there were more years to average pre-MPP adoption compared to post-MPP adoption and, therefore, it is too early to tell if the MPP will have a positive effect in the long term. Similarly, other aspects of the plan, such as habitat protection and marina siting, may have visible positive effects only after sufficient time has passed.

Going forward, the County should continue to implement the MPP by reviewing all proposed multi-slip dock facilities and boat ramps in the county and requiring that those facilities meet the criteria set forth in the MPP. In 2009, the MPP is due to undergo its five-year update. At that time, the County should coordinate with the FWC and consider modifications to the MPP based on a review of the mortality data for Indian River County.

- Sea Turtle Protection Plan

In 2004, Indian River County adopted a Sea Turtle Habitat Conservation Plan (HCP). Adoption of the Sea Turtle HCP has led to the development of a complete and accurate sea turtle nesting dataset, has increased public awareness of the issues facing sea turtle nesting, and has specifically identified threats to sea turtle nesting and survival.

Because light sources visible from the beach often disorient nesting sea turtles and are a leading cause of mortality and failed reproduction, Indian River County environmental planning staff, in 2007, began working in conjunction with the County Coastal Engineering Division on resolving beach lighting violations by sending letters to beachfront property owners indicating lighting violations unique to each property.

One benefit of the Sea Turtle HCP is that the county compiled a complete database of sea turtle nesting sites and nest numbers beginning in 2005. Prior to 2005, comprehensive data were not available on nesting sea turtles in the county. Over the next several years, the county needs to continue to implement the HCP by enforcing lighting restrictions and by continuing to monitor nesting data to discern trends in nesting.

In 2008, the Florida Fish and Wildlife Conservation Commission (FWC), in partnership with the

Florida Department of Environmental Protection (DEP), began an initiative to develop a Florida-wide HCP for coastal beaches. The purpose of the HCP is to establish uniformity in how the State addresses post-disaster recovery for construction east of the Coastal Construction Control Line, as it affects state (and federal) listed species. In light of this initiative, the County should adopt a policy to assist the FWC in development of the statewide coastal beaches HCP by sharing local data on sea turtle nesting, erosion events, potential coastal mitigation sites, and other coastal data as may be requested by the FWC and DEP.

- Gopher Tortoise Protection

In 2007, the FWC's Gopher Tortoise Management Plan was revised. At that time, the gopher tortoise was upgraded from a species of special concern to a threatened species. This upgraded status, along with FWC's prohibition of gopher tortoise entombment on development sites, has heightened the importance of gopher tortoise habitat within the county. According to the FWC's revised gopher tortoise management plan, gopher tortoises must be relocated in all cases. At this time, the county has no established policies for gopher tortoise relocation beyond those established by the FWC.

In the past, Indian River County has acquired conservation lands with scrub habitat suitable for receiving gopher tortoises, including the North Sebastian Conservation Area, the Wabasso Scrub Conservation Area, and the Sebastian Scrub Conservation Area. In light of the revised FWC gopher tortoise management plan, the County should consider developing policies in the Conservation Element of the comprehensive plan for the relocation of gopher tortoises from private development lands to county owned lands. These policies should allow developers the option of paying a fee to have gopher tortoises relocated to county owned lands, rather than the current procedure of relocating gopher tortoises to largely private lands outside of the county. The fees collected could be used to support the ongoing management of resident tortoises and relocated tortoises on county owned lands.

Protection of Historic Resources

It has been almost 20 years since a survey was conducted of historic structures in the unincorporated county. That survey, conducted in 1989, documented 284 historic building sites.

For a structure to qualify as historic, the structure must be at least 50 years old. A structure that is at least 50 years old, however, does not automatically qualify as historic. County Code Section 933.10 provides the following criteria for determining if a structure is a historic resource:

(a) The considered historic resource must be a minimum of fifty (50) years old and contain significant character, interest, or value as part of the historical, cultural, aesthetic and architectural heritage of Indian River County, its municipalities, the surrounding counties, the state, or the nation. General evaluation criteria shall include

the significance and association of the building with the way of life or activities of a major person, location, event, family, business or institution recognized as important to the county, its municipalities, the surrounding counties, the state, or the nation; or

(b) The considered historic resource displays the historical, political, cultural, economic or social trends of community history; or

(c) The considered designation displays unique and/or distinguishing characteristics of an architectural style, design period, method of construction, detail, craftsmanship or material; or

(d) The considered historic resource is a historic or outstanding work of a prominent architect, designer, engineer, builder or landscape architect; or

(e) The site, building or structure meets the historic development standards as defined by, and listed in the regulations of, and criteria for, the National Register of Historic Places, as prepared by the U.S. Department of the Interior, under the Historic Preservation Act of 1966, as amended.

In 2007, County Property Appraiser records indicated there were 2,227 parcels in the unincorporated county with structures at least 50 years old. Under the referenced criteria, it is unlikely that all of those structures qualify as historic resources. Notwithstanding, it is apparent that the 1989 historic structures survey is in need of an update.

In the past ten years, the County has acquired the following conservation lands (or easements) with historic structures:

- The Hallstrom Farmstead (outbuildings)
- The Rodney Kroegel Homestead
- The Shadowbrook Estates parcel of the South Prong Preserve (Stough House)
- The Archie Smith Fish House
- The Sexton Ranch (a.k.a., Treasure Hammock Ranch) conservation easements
- Jones's Pier

Since the historic structures on these sites are planned to be restored and maintained, the County should apply for historic preservation grants and other funding sources to restore these structures and allocate funding for ongoing maintenance once the structures are restored.

In 1992, the County conducted a countywide archaeological survey. That survey identified 55 known and potential sites of archaeological significance in the designated coastal zone. The 1992 survey also established "probability zones" for archaeological resources. Since 1992, county staff has required archaeological surveys of proposed development projects within areas with high

probability of having archaeological resources. When an archaeological resource is documented at a proposed development site, the developer is required to protect the archaeological site under a conservation easement. If substantial protection of the archaeological resource is not feasible given site characteristics, the developer is required to mitigate impacts by conducting a full “dig” investigation and documentation of the resource prior to development. In the future, the County should continue its policy to require archaeological surveys and protection or mitigation of such resources on development sites.

Estuarine Water Quality

Between 1996 and 2007, Indian River Lagoon water quality remained fairly constant. Within the lagoon, water quality is measured at various points. At each point, water quality generally fluctuates within established ranges. Recently, water quality at several water monitoring stations has shown improvement. This improvement may be the result of several recent water quality projects, including: muck dredging in the St. Sebastian River; construction of sub-regional stormwater treatment facilities in Vero Lake Estates, Gifford and Roseland; and improved sedimentation and erosion control practices through County implementation of the National Pollutant Discharge Elimination System (NPDES) Act.

Once completed, several projects that are currently under construction will contribute to water quality improvement. These projects include the Egret Marsh and Spoonbill Marsh water treatment projects, as well as the Main Relief Canal Pollution Control Facility.

Slight increases in water quality in the lagoon indicate that water quality improvement projects are having a positive affect. For that reason, the County should consider construction of pollution control facilities in the North and South Relief canals, using series screening methodology similar to the Main Relief canal project. In that vein, the County should continue its policy of seeking funds through Section 319 Grants, Snook Tag funds, the Surface Water Improvement Management (SWIM) program, and other funding sources for stormwater management and pollution control projects that benefit lagoon water quality.

In 1990, the County adopted land development regulations requiring shoreline protection buffers along the St. Sebastian River and along the aquatic preserves in the Indian River Lagoon. The regulations prohibit development, except for docks, boat ramps, pervious walkways and elevated walkways which provide riparian access for landowners, within the protection buffers. Since 1990, the shoreline buffers have been applied to all parcels along the rivers, even those parcels that are platted lots with seawalls and no pre-existing shoreline vegetation. In the future, the County should continue its policy of requiring shoreline protection buffers, but should consider exempting existing platted lots with seawalls from the requirement, since applying the buffer in such circumstances does not serve the intent of the regulation.

Recently, a river-dredging project began in the St. Sebastian River. This project will result in the

removal of two million cubic yards of muck from the river bottom and will likely lead to improved water quality.

Currently, the SJRWMD is working on plans for a stormwater park south of Micco Road in Brevard County, similar to the recently completed Sebastian Stormwater Park. When complete, the Sebastian Stormwater Park will reduce total suspended solids entering the South Prong annually by an estimated 173,180 pounds. In combination with the Sebastian Stormwater Park, the stormwater park in Micco will reduce the amount of sediment flowing into the St. Sebastian River and ultimately reduce the amount of muck reaching the lagoon.

In the IRL National Estuary Program's 2008 draft update to the IRL Comprehensive Conservation and Management Plan (CCMP), there are various recommended actions to address issues that affect the lagoon. These actions include eradication of invasive flora and fauna, reduction of sedimentation, and assessment of potential climate change impacts to lagoon resources. Going forward, the County should revise its policies to include those actions recommended in the CCMP update.

In 2005, Indian River County hired a stormwater education coordinator and a stormwater enforcement inspector. The stormwater education coordinator's role is to assist county staff, contractors, and the public with education and training regarding problems associated with non-point source pollution. The coordinator's role is also to provide guidance and expertise in stormwater, erosion, and sediment control to the general public, business, industry, and development communities. With respect to the county stormwater inspector, his responsibility is to review development projects to ensure that developers implement erosion control measures in accordance with issued permits. These two positions serve important roles that ultimately contribute to improved estuarine water quality through public education and regulatory enforcement.

Natural Disaster Planning

- Local Mitigation Strategies

According to state law, local governments are required to prepare Local Mitigation Strategies (LMS) to identify actions that permanently reduce or eliminate the long term risk to people and property from the different types of hazards faced by Florida residents. In 1999, the county adopted its first LMS. That document was subsequently updated in 2005.

Since adoption of the LMS, the county has undertaken the actions identified within the strategy. Those actions include acquiring and preserving environmentally sensitive land in flood and storm surge prone areas, regulating the removal of vegetation in flood and surge prone areas, and constructing a new county Emergency Operations Center.

Overall, the county has focused on identifying natural hazards and addressing those hazards. In fact, a report produced by the Florida Department of Community Affairs titled Integrating Hazard Mitigation into Comprehensive Planning that was published in 2006 stated that “[t]he county has done a great job of integrating hazard mitigation into their comprehensive plan and Local Mitigation Strategy. Therefore, a main recommendation to the county is to ensure the enforcement of the comprehensive plan and LMS.”

- Coastal High Hazard Area

In 2006, the state legislature modified the definition of the Coastal High Hazard Area (CHHA). Prior to that change, the CHHA encompassed all evacuation areas for a Category 1 hurricane. As a result of the 2006 legislation, the CHHA is now defined as the area below the storm surge line of a Category 1 hurricane as established by a Sea, Lake, and Overland Surges from Hurricanes (SLOSH) computer model. This storm surge line is depicted in the county’s Local Mitigation Strategy (LMS).

According to the 2006 legislation, each coastal jurisdiction must depict the CHHA boundary on its Future Land Use Map by July 1, 2008. At this time, there is a statewide effort to update the storm surge maps. When the updated storm surge maps become available, the county will need to modify the Future Land Use Map to depict the revised CHHA boundary. Therefore, the county should adopt a new policy, in its Future Land Use Element, requiring that the CHHA boundary, as defined by state statutes, be based on the best available existing information and that the depiction of the CHHA boundary on the Future Land Use Map be updated as necessary.

- National Flood Insurance Protection Program

Currently, Indian River County participates in the Community Rating System (CRS) of the National Flood Insurance Protection (NFIP) program. By undertaking floodplain management activities beyond the minimum requirements of the NFIP, the County has achieved a CRS rating of 6, a rating which results in a 20% discount on all flood insurance premiums in the unincorporated county. By participating in the NFIP CRS, the County is conserving flood storage capacity and other natural functions and values of the 100 year floodplain.

Presently, the Federal Emergency Management Agency (FEMA) is undertaking a Flood Insurance Rate Map (FIRM) modernization project in the county. This modernization project entails assessment of current available flood studies and use of up-to-date high resolution aeriels to revise the County’s FIRMs to be more accurate and useable in depicting flood zones. The FEMA map modernization project is on schedule to be completed in 2010. Going forward, the County should assist FEMA in modernizing the FIRMs by making local drainage studies available to FEMA and by conducting public information workshops to advise development professionals, as well as the general public, of the floodplain map modernization project.

- Comprehensive Emergency Management Plan

The 2007 Comprehensive Emergency Management Plan (CEMP) defines the roles and responsibilities of County departments through an Emergency Support Function (ESF) approach to operations and planning. The CEMP addresses local and regional evacuation and shelter procedures, as well as post-disaster response and recovery issues.

Between 1995 and 2007, the county's population grew by approximately 39,382 residents to 139,757. Although the population of the county increased during this period, the evacuation time estimate for a Category 3-5 hurricane has not substantially changed. Currently, the estimated evacuation time for the Hurricane Vulnerability Zone remains at less than 12 hours, 4 hours less than the state's maximum requirement of 16 hours. Recent and ongoing improvements to State Road 60 and U.S. Highway 1 will help the County continue to achieve its current objective of maintaining an evacuation time of 12 hours or less.

As structured, the CEMP provides for annual review and assessment of emergency procedures set forth in the CEMP. Going forward, the County should continue its policy to annually assess its emergency preparation and response procedures, including assessment of public facilities and infrastructure in the CHHA after significant storm-damage events.

Beaches and Dunes

Indian River County has taken several steps to combat beach erosion and conserve coastal beach and dune systems:

- Since the last comprehensive plan update in 1998, Indian River County has created a Beach Preservation Plan (BPP). The purpose of the plan is to ensure continued monitoring of areas of critical beach erosion and to identify areas of beach that are the best candidates for renourishment projects.
- A Prefabricated Erosion Prevention reef (PEP reef) was constructed just offshore of Vero Beach. Since the construction of the PEP reef, beach profile surveys have shown that the shoreline has stabilized within the area of the PEP reef.
- Recently, Indian River County completed two large-scale beach restoration projects. In 2003, approximately 500,000 cubic yards of sand dredged from offshore were placed along 2.2 miles of beach in the northern end of the County. In 2007, approximately 375,000 cubic yards of sand were distributed along two miles of beach in the south county.

Despite these efforts, beach erosion is an ongoing concern. While beach erosion control measures have been taken to control 'normal' beach erosion, issues such as climate change and

sea level rise may lead to more severe coastal erosion in the future. Also, increases in strong tropical storms and hurricane activity along Florida's coasts increase the likelihood of catastrophic erosion events. In light of anticipated increases in erosion due to sea level rise, climate change, and hurricanes, the county needs policies that address the protection of coastal properties. These policies should include:

- A requirement that the County, by 2012, evaluate its current Dune Stabilization Setback Line (DSSL) and consider relocating the DSSL westward from its current location (i.e., the 1981 Coastal Construction Control Line). The DSSL is the County's "line of prohibition," serving as the easternmost building setback line from the ocean, with the exception of beach access dune crossovers that are allowed east of the line.
- A requirement that substantially damaged oceanfront structures in nonconforming "footprints" be relocated westward, in compliance with current coastal regulations, even when such structures are substantially damaged during declared natural disasters.
- A requirement that new oceanfront development hook up to public sewer, where public sewer is available. This will alleviate potential adverse health and environmental impacts associated with erosion damage to on-site disposal systems (OSDS).

Public Access Facilities

The Evaluation and Appraisal Report (EAR) for the Recreation and Open Space Element of the comprehensive plan identifies two facts that are important in analyzing public access to County beach, river and lake resources. These are:

- All indications are that the population of the County will continue to grow. For example, the University of Florida's Bureau of Economic and Business Research projects that the County's population will increase from 130,041 in 2005 to 209,000 in 2030. That growth represents a nearly 61% population increase in 25 years;
- The amount of park lands adjacent to natural water bodies in the County has remained constant since the time of the last major plan update (356 acres). Of those 356 acres, 192 acres are beachfront parks, and 164 acres are riverfront or lakefront parks. The opportunities for acquiring additional parks adjacent to water bodies are limited.

In the past, the county and the municipalities have provided beach, river, and lake parks to accommodate the population of the county. In the future, the opportunities for acquiring additional beach, river, and lake parks will be limited. Consequently, the county will probably

not be able to obtain additional access to these water bodies. For that reason, the county must ensure that the current accesses to water bodies be retained.

One of the major ongoing expenses for beach parks is to provide for lifeguards and beach rescue operations. Since all of the public beach parks are located within the City of Vero Beach and the unincorporated county area, operational expenses for beach rescue operations and lifeguards are borne by the county and City of Vero Beach. Since beach rescue operations and lifeguards are essential health and safety services, the City of Vero Beach and the county must continue to provide these services to the county residents.

Infrastructure

- Potable Water

In the last 10 years, the county's potable water system has expanded and now serves all urbanized areas of the county, including major commercial and industrial nodes. During that time, the county's potable water system has adequately met the potable water demand from new residential and nonresidential developments. There are, however, some existing residential developments with undersized lots that are not connected to the county potable water system.

A review of the county utilities department assessment projects indicates that most residents of existing unconnected residential subdivisions would like to be connected to the county potable water system, but they are not willing or able to pay for the connection. In the past, the county has utilized Community Development Block Grants (CDBG) to connect several low income neighborhoods in the Wabasso area to the county potable water system. The CDBG program, however, is a competitive funding source and is available only to low and moderate income neighborhoods. In the future, the county may, whenever the opportunity becomes available, apply for CDBG or other federal or state grants to connect homes in existing residential neighborhoods to the county potable water system. The EAR of the Potable Water Sub-Element contains a complete analysis of potable water service in the county.

- Sanitary Sewer

Since the last major update of the comprehensive plan, the county sanitary sewer system service area has expanded, and sanitary sewer service is now available to most of the urbanized area of the unincorporated county, including major commercial and industrial nodes. In addition, the county provides sanitary sewer service to the City of Fellsmere, the Town of Orchid, and the City of Sebastian. Although not all of the master plan lines are in, the county's sanitary sewer system has adequately met the sanitary sewer demand from new residential and nonresidential development.

There are, however, a number of existing residential developments that are not connected to the county sanitary sewer system. In many cases, septic systems are adequate to accommodate individual single family houses, and there is no need to retrofit existing subdivisions with sanitary sewer lines. Where subdivisions are served by a centralized potable water system, there are seldom problems caused by lots having individual septic tanks. Given the high cost of retrofitting existing subdivisions with sanitary sewer lines and given the limited benefits of connecting, it is unlikely that many existing subdivisions will be retrofitted with sewers in the future.

There are certain circumstances where connecting existing subdivisions to the sanitary sewer system would be beneficial. Those circumstances relate to a subdivision's proximity to a waterbody. Because septic tanks can leach pollutants and those pollutants can impact the ocean, the Indian River Lagoon, the St. Sebastian River, or other surface water bodies, the county has an interest in promoting the connection of waterfront subdivisions to the sanitary sewer system. A complete analysis of sanitary sewer is provided in the EAR of the Sanitary Sewer Sub-Element.

- Stormwater Management

Since 1990, stormwater management facilities in the County have been designed to handle a 25 year/24 hour storm event, as well as provide treatment before discharging stormwater runoff. Because many sections of the County were developed prior to 1990, the level of service for stormwater management facilities continues to vary throughout the County. Since the last major comprehensive plan update, the County has made progress by constructing stormwater management projects in certain areas of the county with known flooding problems, including Vero Lake Estates, east Gifford and Rock Ridge Subdivision. Moreover, projects such as the Sebastian Stormwater Park and the North Relief Canal Pollution Control Facility, described previously in this report, contribute to improved stormwater quality. Despite implementation of these projects, the County needs to continue to identify, seek funding, and construct new stormwater improvement projects in areas where needed, as summarized in the EAR of the Stormwater Management Sub-Element. A more complete analysis of the County's stormwater management facilities is contained in the Stormwater Management Sub-Element EAR.

- Traffic Circulation

As mentioned earlier in this report, two road projects are currently underway that will improve traffic circulation, as well as emergency evacuation, in the coastal zone. Those projects are the four-laning of SR 60 west of I-95 to the Florida Turnpike, which will be completed in 2008, and improvements to U.S. Highway 1, which will include six-laning from 4th Street south into St. Lucie County to the Turnpike Feeder Road. The six-laning of U.S. 1 south of 4th Street to the Feeder Road is scheduled to be completed by 2015. A complete analysis of the transportation network in the county is contained in the EAR of the Transportation Element.

Port Master Plan

There are no existing or proposed deepwater ports in Indian River County.

EVALUATION OF OBJECTIVES

In the following section, the Coastal Management Element's 14 objectives and related policies are listed. This section contains an evaluation of each objective and a determination of whether the objective was achieved and whether it should be maintained, revised, or deleted.

Under each objective, those policies associated with the objective were assessed to identify those that were implemented, those that were partially implemented, and those that were not implemented. Each policy was also assessed to determine if it should be maintained, revised, or deleted.

Objective 1: Natural Resource Protection

“Using 1990 data as a baseline, through 2020, there will be no significant reductions in the overall amount of terrestrial and marine resources within the coastal zone of Indian River County.”

Measure: amount of terrestrial or marine resources in the coastal zone.

Although Objective 1’s target date is in the future, the objective has been achieved.

Evaluation of Objective: From 1996 to 2007, the total acreage of all native plant communities in the county decreased, largely attributable to development of previously undeveloped lands within the Urban Service Area of the coastal zone. Despite these losses, progress has been made in the past ten years with respect to lands acquired in the coastal zone for conservation and restoration, or protected under conservation easements. There are also indications that submerged aquatic vegetation coverage has increased in the Indian River Lagoon over the past decade. Objective 1 is appropriate and should be maintained.

Assessment of Policies

POLICY DESCRIPTION	ACTION / ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED, DELETED, OR REVISED?
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POLICY DESCRIPTION	ACTION / ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED, DELETED, OR REVISED?
(1.1) Restrict development in environmentally sensitive / environmentally important areas.	- Implementation of wetland conservation C-2 and Con-2 land use and zoning designations (1/40 ac. density) applicable to estuarine wetlands; requirement of wetland resource permits, upland set-asides.	Yes	Yes	Maintain
(1.2) C-2 designation of estuarine wetlands, 1 unit per 40 acres density, 1 unit per acre density transfer credit.	- Designation of estuarine wetlands as C-2, subject to site specific survey; allowance of density transfer of 1 unit per acre through PD development, as reflected in LDR requirements.	Yes	Yes	Maintain
(1.3) Designation of and protection of environmentally important upland vegetative communities over 5 acres.	- Review of site developments with requirement of protection of environmentally important uplands with density transfer opportunity, per Upland Protection LDR Chapter 929	Yes	Yes	Maintain
(1.4) Require environmental surveys for proposed developments in areas deemed environmentally sensitive and environmentally important.	- Environmental surveys required on a site-by-site basis in conjunction with site development review.	Yes	Yes	Maintain
(1.5) Coordinate field inspections, environmental survey reviews, and habitat preservation measures with federal and state agencies. Require HCPs where necessary.	- Jurisdictional agency permits required in conjunction with county approval of site development projects, prior to release of project plans.	Yes	Yes	Maintain
(1.6) Protect sea turtle nesting habitat by implementing Policy 7.7 of Conservation Element.	- Sea Turtle HCP adopted. - County planning and code enforcement staff work in	Yes	Yes	Maintain

POLICY DESCRIPTION	ACTION / ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED, DELETED, OR REVISED?
	coordination with Coastal Engineering staff in identifying beachfront sea turtle hazards.			
(1.7) By 1998, adopt a Manatee Protection and Boating Safety Comprehensive Management Plan (MPP).	- MPP adopted in 2000, revised in 2004.	Yes	Yes	Delete (plan adopted)
(1.8) By June 1998, evaluate manatee protection speed zones.	- Manatee protection speed zones evaluated at the time of MPP adoption (2000), and at time of first revision (2004).	Yes	Yes	Revise date for next review (2009)
(1.9) Protect and preserve coastal vegetative communities through easements and fee simple acquisition, as set forth in Conservation Element policies.	- Acquisition and conservation of coastal vegetative communities through the County Environmental Lands Program; requirement of native upland set-asides associated with coastal development.	Yes	Yes	Maintain
(1.10) Assist USFWS and FDEP in acquiring undeveloped tracts of coastal vegetative communities.	- Land acquisition through the County Environmental Lands Program; in-kind assistance through management.	Yes	Yes	Maintain
(1.11) Support efforts of SJRWMD to update maps of submerged aquatic vegetation in IRL.	- Provide SJRWMD access to updated aerials for seagrass inventory mapping.	Yes	Yes	Maintain
(1.12) Interim requirements to protect submerged aquatic vegetation (SAV) until the County adopts a manatee protection plan (MPP).	- County adoption of MPP in 2000, revised in 2004	Yes	Yes	Delete (interim measures moot; MPP adopted)
(1.13) Promote commercial and private fishing activities	- Construction of new IRL access facilities.	Yes	Yes	Maintain

POLICY DESCRIPTION	ACTION / ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED, DELETED, OR REVISED?
	- County acquisition of properties abutting public waterways to buffer marine resources.			
(1.14) Adopt resolution supporting designation of submerged land lease areas in the Pelican Island National Wildlife Refuge as an aquaculture use zone.	- Resolution supporting submerged land leases in the PINWR.	Yes	Yes	Delete (lands have been designated)
(1.15) Require shoreline protection buffers along Indian River Lagoon Aquatic Preserves and along the St. Sebastian River.	- Shoreline buffer setbacks required (LDR Section 929.07)	Yes	Yes	Revise so as not to apply to platted lots with existing seawalls

Policies 1.1 through 1.6, and Policies 1.9, 1.10, 1.11, and 1.13 are appropriate, continue to serve the objective, and should be maintained.

In 2000, the County adopted a Manatee Protection and Boating Safety Comprehensive Management Plan (MPP), which was later revised in 2004. Because Policy 1.7 calls for County adoption of an MPP and because an MPP has been adopted, Policy 1.7 should be deleted.

Policy 1.8 indicates that, by 1998, the County will evaluate manatee protection speed zones and make recommendations to the State on whether or not modifications to the speed zones are warranted. When the County adopted (and later revised) the MPP, the County evaluated manatee protection speed zones and made recommendations to the State. Consequently, Policy 1.8 should be revised to indicate that that County will evaluate and make recommendations to the State on manatee protection speed zones when the MPP undergoes its five-year evaluation in 2009.

Prior to County adoption of its MPP, the County adopted Policy 1.12, a policy which contains interim measures to protect submerged aquatic vegetation (SAV) until an MPP is adopted. Since an MPP has been adopted and since the MPP contains policies to protect SAV, Policy 1.12 should be deleted.

Policy 1.14 provides that the county shall adopt a resolution in support of expansion of the amount of submerged lands within the Pelican Island National Wildlife Refuge (PINWR) available for aquaculture leases. Since the last major comprehensive plan update, the amount of submerged land in the PINWR available for aquaculture leases has increased. In that this policy has been achieved, the policy should be deleted.

Consistent with Policy 1.15, the County has adopted land development regulations that require shoreline buffer setbacks along the St. Sebastian River and Indian River Lagoon Aquatic Preserves. These shoreline buffers apply to all parcels along the rivers, even those parcels that are platted lots with seawalls and no pre-existing shoreline vegetation. Since applying the buffer in such circumstances does not serve the intent of the policy, the County should revise Policy 1.15 to exempt existing platted lots with seawalls from the shoreline buffer requirement.

New Policies: Several new policies are needed to achieve Objective 1. One new policy should be to establish state certified “receiver sites” for relocation of displaced gopher tortoises to county-owned conservation lands. This policy should include collection of fees from developers relocating gopher tortoises to county lands, with the fees to be used to fund management of such sites for gopher tortoises. This policy should also include reservation of certain receiving areas for county projects.

Another new policy should indicate that the County will use various methods to preserve natural systems and wildlife corridors in the county. These methods include land acquisition, development clustering requirements, conservation easements, transfer of development rights, and mitigation banks.

Overall Assessment of Policies

Through the implementation of the existing policies and the addition of the referenced new policies, Objective 1 will continue to be achieved.

Objective 2: Estuarine Water Quality

“Through 2020, there will be no significant reduction in the water quality of the Indian River Lagoon or the St. Sebastian River.”

Measure: Water quality in the Indian River Lagoon and St. Sebastian River.

Although Objective 2’s target date is in the future, the objective has been achieved.

Evaluation of Objective: Currently, water within the Indian River Lagoon meets the State Class II or Class III water quality standards, as it did at the time of the last major comprehensive plan update. While water quality in the St. Sebastian River has remained the same over the past ten

years (i.e., does not meet Class III standards), improvement is anticipated in the near future due to muck removal and stormwater treatment projects in progress or recently completed. Objective 2 is appropriate and should be maintained.

Assessment of Policies

POLICY DESCRIPTION	ACTION/ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED/ DELETED/REVISED?
(2.1) Adopt State Class II water quality standards for IRL	- Adopted	Yes	Yes	Revise to reflect the change in water class designation areas
(2.2) Adopt State Class III water quality standards for IRL and St. Sebastian River	- Adopted	Yes	Yes	Revise to reflect the change in water class designation areas
(2.3) Prohibit new point-source discharges into IRL	- County prohibition of new point-source discharges associated with new development	Yes	Yes	Maintain
(2.4) Implement CCMP and SWIM policy recommendations	- Implementation of actions consistent with the IRL CCMP and SWIM program	Yes	Yes	Revise to reflect updates to CCMP
(2.5) By 2000, Establish Water Quality Level of Service Standards	- Total Maximum Daily Loads (TMDLs) established by DEP used for WQLOS	Yes	Yes	Revise time horizon
(2.6) Reduce freshwater inflow and improve water quality in IRL through implementation of LDRs, including requirement of littoral zones	- Establishment of stormwater division of Public Works - Implementation of stormwater management LDRs	Yes	Yes	Revise to reflect change in littoral zone requirements
(2.7) Require marinas to be designed to minimize impacts to SAV and marine resources	- County adoption of MPP, including marina siting criteria to minimize impacts to SAV	Yes	Yes	Maintain
(2.8) Enforce dredge and fill permit regulations	-Requirement of jurisdictional permits and county wetland resource permits	Yes	Yes	Maintain

(2.9) Prohibit waster discharge from vessels, when such activity is under county jurisdiction	-Sheriff's marine patrol enforcement against illegal discharge	Yes	Yes	Maintain
(2.10) Implement Objective 2 of the Conservation Element and Objective 7 of the Stormwater Management Element to improve water quality	- Implementation of policies in Conservation and Stormwater Mgt Elements (cross-reference)	Yes	Yes	Maintain

Policies 2.1 and 2.2 adopt state designations of water classifications for various areas of the Indian River Lagoon. These policies should be revised to reflect the fact that the designations have changed since the last major comprehensive plan update.

The following policies were successfully implemented, are ongoing in nature and should be maintained to serve the objective of no significant reduction in water quality in the Indian River Lagoon and St. Sebastian River: 2.3, 2.7, 2.8, 2.9 and 2.10.

Policy 2.4 indicates that the County shall implement recommendations contained in the IRLNEP's Comprehensive Conservation and Management (CCMP) and the SJRWMD's Surface Water Improvement and Management (SWIM) Plan to reduce non-point source pollution entering the Indian River Lagoon. This policy should be revised to reference changes contained in a 2008 update to the CCMP.

According to Policy 2.5, the County, by 2000, was to establish Water Quality Level of Service (WQLOS) standards for drainage basins within the county, which the County did. Policy 2.5 should be revised to reflect a new timeframe (by 2010) and should be reworded to indicate that the County will meet Total Maximum Daily Loads (TMDLs) established by SJRWMD and EPA for drainage basins in the county.

Recently, the County revised its littoral zone requirements to apply to waterbodies on new development project sites exceeding 10 acres, irrespective of SJRWMD littoral zone requirements. Policy 2.6 should be revised to reflect the recent changes in County littoral zone requirements.

New Policies: To ensure that Objective 2 is achieved, two new policies should be adopted. First, a new policy should be added to indicate that the County should monitor water quality in the Indian River Lagoon and St. Sebastian River to determine the success or failure of water quality improvement projects, including the St. Sebastian River muck removal project, the Sebastian Stormwater Park, the Main Relief Canal Pollution Control Facility, and the Spoonbill Marsh project. This information should be used to assess the need, design, and location of future water quality improvement projects.

Secondly, the County should adopt a new policy supporting federal and state funding for implementation of the Indian River Lagoon Comprehensive Everglades Restoration Plan.

Overall Assessment of Policies

Through the implementation of the existing policies and the addition of the referenced new policies, Objective 2 will continue to be achieved.

Objective 3: Boat Facility and Boat Ramp Siting and Construction

“Through 2010, there shall be no increased impact to manatee habitat, or the natural resources of the Indian River Lagoon, including seagrass beds, water quality, estuarine wetlands, and mangrove fringe, attributed to the development or expansion of boat facilities or boat ramps in Indian River County.”

Measure: No increase in habitat impacts due to boat ramps or boat facilities through 2010.

Although Objective 3’s target date is in the future, the objective has been achieved.

Evaluation of Objective: Since County adoption of the Manatee Protection and Boating Safety Comprehensive Management Plan (MPP) in 2000, all new or expanded multi-slip dock facilities and boat ramps in the county have been subject to compliance with criteria set forth in the MPP. Those criteria apply to such dock facilities and boat ramps in municipalities as well as in the unincorporated county, as required by the State. By applying the MPP criteria, which have since been adopted as policies in the Coastal Management Element, the County has taken steps to ensure that new or expanded dock facilities and boat ramps will not adversely impact manatee habitat or natural resources in the Indian River Lagoon. Objective 3 is appropriate and should be maintained, but with a new time horizon (through 2030).

Assessment of Policies

POLICY DESCRIPTION	ACTION/ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED/ DELETED/REVISED?
(3.1) Require that new boat facilities and ramps be consistent with the MPP policies	- County and FWC review of multi-slip dock facilities and boat ramps for consistency with the IRC MPP	Yes	Yes	Maintain
(3.2) Require that boat	- Implementation of MPP marina siting	Yes	Yes	Maintain

POLICY DESCRIPTION	ACTION/ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED/ DELETED/REVISED?
facilities meet specified marina siting zone criteria	zone criteria to proposed multi-slip dock facilities			
(3.3) Require that boat ramp facilities meet specified criteria	-Review of new or expanded boat ramps for consistency with specified criteria	Yes	Yes	Maintain
(3.4) Allow private residential marinas only in certain zoning districts, subject to administrative approval	- Requirement of AA for private residential marinas allowed in residential zoning districts (only)	Yes	Yes	Maintain
(3.5) Allow public / private residential marinas only in certain zoning districts	- Requirement of special exception approval for public/private residential marinas in residential districts	Yes	Yes	Maintain
(3.6) Allow recreational marinas only in certain zoning districts	- Requirement of special exception approval for recreational marinas in certain commercial zoning districts	Yes	Yes	Maintain
(3.7) Allow commercial marinas only in certain commercial and industrial zoning districts	- Requirement of administrative approval for commercial marinas in heavy commercial and industrial districts	Yes	Yes	Maintain
(3.8) Require mitigation for boat facility impacts to resources; fee-in-lieu not an option	-Requirement of mitigation of impacts associated with new or expanded boat facilities	Yes	Yes	Maintain
(3.9) Require county coordination with municipalities regarding MPP requirements	- Coordination with municipalities in adopting MPP	Yes	Yes	Revise to reflect coordination with municipalities on five-year updates to MPP
(3.10) Allow reconstruction of nonconforming marinas if destroyed by natural disaster	-Allowance of reconstruction of dock facilities destroyed by natural disaster in pre-existing footprint	Yes	Yes	Maintain
(3.11) Restrict covered slips and platforms in 10% SAV areas	- Restrictions on covered boat slips in areas of SAV (LDR Chapter 932)	Yes	Yes	Maintain

POLICY DESCRIPTION	ACTION/ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED/ DELETED/REVISED?
(3.12) Prohibit floating docks and designs that entrap manatees	- Requirement that dock designs do not have potential to entrap manatees	Yes	Yes	Maintain
(3.13) By 2005, map resource constraints to boat facilities siting on IRL	- Individual maps in MPP of manatee abundance, manatee mortality, seagrass density and marina siting zones.	Yes	Yes	Revise to reflect new timeframe for establishment of GIS multi-layer maps
(3.14) Require 1:100 power boat slip to shoreline ratio requirement in certain zones	- 1:100 boat slip –to linear feet shoreline ratio established for certain marina siting zones	Yes	Yes	Maintain
(3.15) Encourage upgrading of existing marinas in certain zones by not applying 1:100 ratio	- 1:100 boat slip- to linear shoreline ratio not applied in certain marina siting zones	Yes	Yes	Maintain

With the exception of Policies 3.9 and 3.13, the policies of this objective are appropriate, are ongoing in nature and should be maintained, without need for revisions.

Policy 3.9 calls for County coordination with coastal municipalities in adopting the MPP. That occurred. This policy should be revised to indicate that County coordination with such municipalities should again occur whenever the MPP undergoes its five-year evaluation and update, the next of which is slated for 2009.

As structured, the MPP contains several general maps depicting manatee abundance areas, manatee mortality areas and seagrass areas of the lagoon in the county. The MPP also contains a map of nine marina siting zones within the Indian River Lagoon and St. Sebastian River. Going forward, the County should coordinate with the Florida Fish and Wildlife Conservation Commission (FWC) Bureau of Protected Species to create GIS map layers of these various areas. This will enable the County to create marina siting resource constraint maps. Policy 3.13 should be revised to reflect a new target date (by 2010) for the County to establish such GIS map layers.

Overall Assessment of Policies

Through the implementation of these policies, Objective 3 will continue to be achieved. No new policies are necessary.

Objective 4: Beaches and Dunes

“By 1998, all natural functions of the beach and dune system in Indian River County shall be protected and no unmitigated human-related disturbance of the primary dune system shall occur.”

Measure: Protection of natural functions of the beach and dune system in the county.

Objective 4 was achieved.

Evaluation of Objective: In 1998, the county adopted a Beach Preservation Plan (BPP). In implementing the BPP, the County has completed two large-scale beach restoration projects in areas of critical beach erosion. The County has also undertaken other actions to protect the county’s beach and dune system, including adoption of a sea turtle habitat conservation plan (HCP) and implementation of land development regulations that require mitigation or restoration of dune disturbances caused by human activities. Objective 4 is appropriate and should be maintained, but with a new time horizon (through 2030).

Assessment of Policies

POLICY DESCRIPTION	ACTION/ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED/ DELETED/REVISED?
(4.1) Prohibit construction oceanward of the DSSL (based on 1981 CCCL)	- County Policy (LDR Chapter 932)	Yes	Yes	Revise to indicate evaluation to move DSSL westward
(4.2) Protect beach and dune systems; review beach and dune projects within the city limits of Vero Beach	- review proposed beach and dune projects in the County and City of Vero beach for compliance with county regulations, and provide comments to state and federal jurisdictional agencies	Yes	Yes	Maintain
(4.3) Pursue funding for shoreline stabilization projects	- Obtainment of state and federal funding for beach renourishment projects	Yes	Yes	Maintain
(4.4) Require dune crossover structures for oceanfront properties	- Dune crossovers required (LDR Chapter 932)	Yes	Yes	Maintain
(4.5) By 2000, develop dune crossover construction and	- Establishment of dune crossover maintenance plan	Yes	Yes	Delete (implemented)

POLICY DESCRIPTION	ACTION/ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED/ DELETED/REVISED?
maintenance plan through County parks Division				
(4.6) Adopt specific criteria for shoreline stabilization as outlined in Policy 10.5 of the Conservation Element (cross-reference)	- Specific criteria of Conservation Element Policy 10.5 adopted in LDR Chapter 932, relating to shoreline stabilization	Yes	Yes	Maintain
(4.7) Prohibit motorized vehicles on beaches, except for emergency vehicles, government, research and authorized construction vehicles	- Prohibition of vehicles on beaches except under certain circumstances (LDR Chapter 932)	Yes	Yes	Maintain
(4.8) Impose fines for beach and dune violations	- Code enforcement actions against illegal dune alteration activities	Yes	Yes	Maintain
(4.9) Attend meetings and evaluate technical studies prepared by the Sebastian Inlet Tax District	- Participation in Sebastian Inlet Tax District meetings	Yes	Yes	Maintain
(4.10) By 1999, complete three- year monitoring report for PEP reef ; determine need for supplemental beach renourishment	- Three- year monitoring report of PEP reef	Yes	Yes	Revise to reflect continued monitoring
(4.11) By 1999, study alternatives to funding shoreline stabilization, including establishment of a Beach Taxing District	- Evaluation of establishing Beach Taxing District to fund shoreline stabilization	Yes	Yes	Revise timeframe

As reflected in Policy 4.1, the County has adopted the 1981 State Coastal Construction Control Line (CCCL) as a Dune Stabilization Setback Line (DSSL). The DSSL is the County’s “line of prohibition,” serving as the easternmost building setback line from the ocean, with the exception of beach access dune crossovers and other minor structures that are allowed east of the line. Due to a potential increase in coastal erosion from climate change, sea level rise and other factors, this policy should be revised to indicate that the County, by 2012, will evaluate the location of the DSSL and consider relocating the DSSL westward.

Policies 4.2, 4.3, 4.4, 4.6, 4.7, 4.8 and 4.9 are appropriate, continue to serve the objective, and should be maintained.

Currently, County Parks Division staff maintains dune crossover structures at county-owned parks. When crossover structures become storm-damaged or are otherwise in disrepair, repairs are scheduled through that Division. As such, a dune crossover maintenance procedure has been established. Therefore, Policy 4.5 should be deleted.

In 1996, a Prefabricated Erosion Prevention reef (PEP reef) was constructed just offshore of the terminus of S.R. 60, in the City of Vero Beach. Profile surveys since the construction of the PEP reef indicate that the shoreline has stabilized in the area of the PEP reef since its construction. Consequently, Policy 4.10 should be revised to reflect ongoing monitoring of the PEP reef to evaluate the effects of the reef on shoreline stabilization.

Policy 4.11 calls for the County, by 1999, to study alternatives to fund shoreline stabilization, including establishment of a beach taxing district. This policy should be revised to indicate a new timeframe (by 2012).

New Policies: The Florida Fish and Wildlife Conservation Commission (FWC), in partnership with the Florida Department of Environmental Protection (DEP), are developing a Florida-wide Habitat Conservation Plan (HCP) for coastal beaches. The purpose of the HCP is to establish uniformity in how the State addresses post-disaster recovery for construction east of the Coastal Construction Control Line, as it affects state (and federal) listed species. Because the Florida-wide HCP for coastal beaches could benefit the County, the County should adopt a policy to assist the FWC in development of the statewide coastal beaches HCP by sharing local data on sea turtle nesting, erosion events, potential coastal mitigation sites, and other coastal data as may be requested by the FWC and DEP.

To alleviate potential adverse health and environmental impacts associated with beach erosion damage to on-site disposal systems (OSDS), the county should adopt a new policy requiring that new oceanfront development hook up to public sewer, where public sewer is available.

Overall Assessment of Policies

Through the implementation of the existing policies and the addition of the referenced new policies, Objective 4 will continue to be achieved.

Objective 5: Limiting Public Expenditures in the Coastal High Hazard Area

“Through 2004, there will be no expansion of infrastructure within the Coastal High Hazard Area (CHHA) other than that which is deemed necessary to maintain existing levels-of-service.”

Measure: Expansion of infrastructure (or lack thereof) within the Coastal High Hazard Area (CHHA).

Objective 5 was achieved.

Evaluation of Objective: Since the last major update to the comprehensive plan, the County has limited expenditures on infrastructure in the CHHA to maintaining beachfront parks and beach accesses. Also, the County, through its Environmental Lands Program, purchased lands for conservation in the CHHA, lowering the potential need for infrastructure to serve private development that otherwise would have occurred on lands bought for public conservation. This objective is appropriate and should be maintained, but with a new time horizon (through 2030).

Assessment of Policies

POLICY DESCRIPTION	ACTION/ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED/ DELETED/REVISED?
(5.1) Adopt Coastal High Hazard Area based on 1994 TCRPC Hurricane Evacuation Study	- CHHA adopted	Yes	Yes	Revise to reflect new CHHA to be depicted on FLU map, based on Category 1 storm surge SLOSH map (per state requirement)
(5.2) The County shall not subsidize public facilities within the CHHA, except to maintain existing level of service within CHHA	- Public facilities not subsidized in CHHA	Yes	Yes	Maintain
(5.3) Assessment of county facilities in the CHHA damaged by storm events	- County assessment of facilities in CHHA after storm events (e.g., 2004 hurricanes)	Yes	Yes	Maintain
(5.4) Maintain FEMA CRS of "7"; enforce LDR Chapter 930; evaluate structures for compliance with FEMA's 50% rule	- Maintenance of NFIP/CRS rating of Class 7 (or better)	Yes	Yes	Revise to reflect current CRS rating of 6

In 2006, the state legislature modified the definition of the CHHA to be the area below the storm surge line of a Category 1 hurricane, as established by a Sea, Lake, and Overland Surges from Hurricanes (SLOSH) computer model. For that reason, Policy 5.1 needs to be revised to reflect the new definition of the CHHA and to reflect that the CHHA shall be depicted on the County's Future Land Use Map.

Policies 5.2 and 5.3 are appropriate, ongoing in nature and should be maintained, without need for revisions.

Indian River County participates in the Community Rating System (CRS) of the National Flood Insurance Protection (NFIP) program. By undertaking floodplain management activities beyond the minimum requirements of the NFIP, the County recently achieved a CRS rating of 6, which results in a 20% discount to all flood insurance premiums in the unincorporated county. Policy 5.4 should be revised to reflect the County maintaining a “6” CRS rating.

Overall Assessment of Policies

Through the implementation of these policies, Objective 5 will continue to be achieved. No new policies are necessary.

Objective 6: Reduction of Hurricane Evacuation Times to Reduce Public Risk

“Through 2020, Indian River County will maintain an estimated evacuation time of 12 hours or less for a Category 3 hurricane.”

Measure: Maintenance of an estimated evacuation time for a Category 3 hurricane at 12 hours or less.

Although Objective 6’s target date is in the future, the objective has been achieved.

Evaluation of Objective: Between 1995 and 2007, the county’s population grew by approximately 39,382 residents to 139,757. Although the population of the county increased during this period, the evacuation time estimate for a Category 3-5 hurricane has not substantially changed. The estimated evacuation time for the Hurricane Vulnerability Zone remains at less than 12 hours, 4 hours less than the state’s maximum requirement of 16 hours. Recent and ongoing improvements to State Road 60 and U.S. Highway 1 will help the County continue to achieve its current objective of maintaining an evacuation time of 12 hours or less. Objective 6 is appropriate and should be maintained.

Assessment of Policies

POLICY DESCRIPTION	ACTION/ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED/ DELETED/REVISED?
(6.1) Designate Hurricane Vulnerability Zone (HVZ)	- HVZ designated as area described by the TCRPC as the area subject to inundation from a Category 3 or greater hurricane	Yes	Yes	Maintain

POLICY DESCRIPTION	ACTION/ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED/ DELETED/REVISED?
(6.2) By 1998, conduct a survey of existing hurricane shelters; solicit funding to reduce "safe" shelter capacity deficit	- Evaluation of hurricane shelters, solicited funding for upgrades	Yes	Yes	Revise to set new timeframe
(6.3) By 1999, assess vulnerability of public infrastructure in CHHA	- Review of all proposed development within the CHHA in coordination with Emergency Services Department through Technical Review Committee	Yes	Yes	Revise as ongoing policy
(6.4) Coordinate emergency evacuation procedures with TCRPC, Brevard County, and St. Lucie county	- Coordination with TCRPC and adjacent counties concerning evacuation routes	Yes	Yes	Maintain
(6.5) Adopt CME Objective 11 and FLUE Objective 17 : no increase in land use density in CHHA	- Prohibition of land use density increase in the CHHA	Yes	Yes	Maintain
(6.6) Coordinate with Florida East Coast Railroad to ensure train movements are stopped during hurricane evacuations	- Coordination with FECRR during hurricane evacuations	Yes	Yes	Maintain
(6.7) Prohibit location of Adult Congregate Living Facilities (ACLFs) and facilities serving special needs populations in the CHHA	- Prohibition of new ACLFs and similar uses in the CHHA	Yes	Yes	Maintain

The following policies were successfully implemented, are ongoing in nature and should be maintained to serve the objective of maintaining an estimated evacuation time of 12 hours or less for a Category 3 hurricane: 6.1, 6.4, 6.5, 6.6 and 6.7.

Policy 6.2 calls for the County, by 1998, to conduct a survey of public buildings appropriately designed and located to serve as hurricane evacuation shelters, and for the County to solicit state

funds to retrofit existing primary shelter facilities, as needed. The County’s 2007 Comprehensive Emergency Management Plan (CEMP) identifies 12 primary shelters located outside of designated storm surge areas, some of which have been retrofitted in recent years in the aftermath of the 2004 hurricanes. Policy 6.2 should be revised to be an ongoing policy for the County to evaluate designated shelters and seek state funding for retrofitting primary shelter facilities to increase hurricane-proofing of such shelters as warranted.

Through the County’s inter-departmental development review process, the County has established a procedure to assess the vulnerability of public infrastructure, private residences and businesses within the CHHA, and to ensure that all new developments within the CHHA incorporate hazard mitigation techniques, such as dedication of emergency accesses, as required by the Department of Emergency Services. In that respect, Policy 6.3 should be revised to be an ongoing policy.

Overall Assessment of Policies

Through the implementation of these policies, Objective 6 will continue to be achieved. No new policies are necessary.

Objective 7: Post-Disaster Recovery and Redevelopment

“Consistent with the requirements of Chapter 163, F. S. and DCA Rule 9J-5, F. A. C., the County shall have a Local Mitigation Strategy (LMS), as an annex to the Indian River County Comprehensive Emergency Management Plan (CEMP). The LMS shall list and prioritize disaster mitigation projects.”

Measure: Implementation of a Local Mitigation Strategy as an annex to the Comprehensive Emergency Management Plan.

Objective 7 was achieved.

Evaluation of Objective: In 1999, the county adopted its first LMS. That document was subsequently updated in 2005. Since adoption of the LMS, the county has undertaken the actions identified within the strategy. Those actions include acquiring and preserving environmentally sensitive land in flood and storm surge prone areas, regulating the removal of vegetation in flood and surge prone areas, and constructing a new county Emergency Operations Center. Objective 7 is appropriate and should be maintained.

Assessment of Policies

POLICY DESCRIPTION	ACTION/ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED/ DELETED/REVISED?
(7.1) Perform initial damage assessment immediately following a natural disaster; declare local emergency; request assistance from FDEM	- Post-disaster recovery procedures adopted in CEMP	Yes	Yes	Maintain
(7.2) Maintain Local Mitigation Strategy	- LMS strategy adopted as annex to CEMP, updated in 2005	Yes	Yes	Maintain
(7.3) Following a natural disaster, structures located east of the DSSL sustaining more than 50% damage must relocate west of historic location	- Required relocation of nonconforming structures east of DSSL if more than 50% damaged based on market value	Yes	Yes	Maintain
(7.4) Structures predating 1989 FEMA maps in flood hazard areas sustaining substantial damage must be replaced at an elevation 6 inches above base flood elevation	- Requirement of 6 inch freeboard above base flood elevation for reconstruction of substantially damaged structures	Yes	Yes	Maintain
(7.5) Substantial improvements to pre-FIRM structures located within a flood hazard area must be located 6 inches above base flood elevation	- Requirement of 6 inch freeboard above base flood elevation for substantially improved structures	Yes	Yes	Maintain
(7.6) The county shall continue to regulate and manage natural resources within the coastal zone.	- Implementation of LDR Chapter 932; prohibition of increased land use density in CHHA	Yes	Yes	Maintain

All six of the policies serving this objective are appropriate, are ongoing in nature and should be maintained.

New Policies: Currently, the Federal Emergency Management Agency (FEMA) is undertaking a Flood Insurance Rate Map (FIRM) modernization project in the county. This modernization project entails assessment of current available flood studies and use of up-to-date high resolution aerials to revise the County’s FIRMs to be more accurate and useable in depicting flood zones. The County should adopt a new policy to assist FEMA by making local drainage studies available to FEMA and by conducting public information workshops to advise development professionals, as well as the general public, of the floodplain map modernization project.

As a result of two hurricanes in 2004, a number of damaged boats (“derelict vessels”) were abandoned in the Indian River Lagoon, causing navigational hazards. Although the County succeeded in obtaining funds from the Florida Inland Navigation District (FIND) and the Florida Boating Improvement Fund to remove the derelict vessels, the County does not currently have formal procedures to address marine debris removal resulting from severe storm events. Establishment of such procedures would help the County streamline the process of obtaining state and federal permits to removal derelict vessels and other marine debris from the Lagoon, as well as increase the County’s opportunity to obtain funds from the Federal Emergency Management Agency (FEMA) for marine debris removal resulting from declared natural disasters. For these reasons, the County should adopt a new policy to establish formal procedures in its LMS to address the removal of marine debris resulting from natural disasters.

Overall Assessment of Policies

Through the implementation of the existing policies and the addition of the referenced new policies, Objective 7 will continue to be achieved.

Objective 8: Public Access

“By 2010, the number of public access points to natural resources within the coastal zone of Indian River County, including beaches, the St. Sebastian River, and the shoreline of the Indian River Lagoon, will be increased by a minimum of five public access points.”

Measure: Number of new access points to natural resources in the coastal zone.

Although Objective 8’s target date is in the future, the objective has been achieved.

Evaluation of Objective: As a result of public acquisition of conservation lands and public access improvements on conservation lands, the number of public access points to natural resources in the coastal zone has increased by at least five over the past decade. Acquired and improved public access points include Sebastian Canoe Launch Park; Captain Forster Hammock Preserve; the Pelican Island National Wildlife Refuge; Round Island South Conservation Area; North Sebastian Conservation Area; Prange Island and the St. Sebastian River Preserve State Park. Other riverfront conservation lands acquired with planned public access improvements include the Russell Grove River Buffer Conservation Area; the Lost Tree Islands; the Archie Smith Fish House and Jones’s Pier. Objective 8 is appropriate and should be maintained, but with a new time horizon of 2012.

Assessment of Policies

EAR Coastal Management Element

POLICY DESCRIPTION	ACTION/ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED/ DELETED/REVISED?
(8.1) Participate in CARL "Blueway" project	- Acquisition of coastal wetlands for conservation within the IRL Blueway	Yes	Yes	Revise to indicate revised program name (Florida Forever ARC program)
(8.2) Accept donations of shoreline lands	- Acceptance of donate coastal lands ("Green Salt Marsh")	Yes	Yes	Maintain
(8.3) Explore feasibility of improving boat access in south county	- Replacement of Oslo boat ramp (permitting in progress)	Yes	Yes	Revise to indicate funding to be sought to construct boat ramp at Gifford Dock Road
(8.4) Prohibit the net loss of public access and facilities	-Provision of public access facilities to natural waterbodies; acquisition of waterfront conservation lands with planned water access facilities	Yes	Yes	Maintain
(8.5) Complete improvements to Round Island Park by 1999	- Improvements to Round Island Beach Park	Yes	Yes	Delete (completed)
(8.6) Complete management plan for Cairns tract by 1999	- Management plan completed, site access improvements constructed (Captain Forster Hammock Preserve)	Yes	Yes	Revise to set timeframe for ocean access / dune crossover improvement with limited parking east of SR A1A
(8.7) Provide public access to the Pelican Island NWR by 2000	- Parking, restrooms, kiosks, trails and viewing platform constructed at PINWR in partnership with FWS	Yes	Yes	Revise to reflect ongoing maintenance assistance of public access facilities
(8.8) Provide passive recreation on acquired conservation lands (cross-reference Conservation Objective 12 policies)	- Construction of public access improvements conservation lands	Yes	Yes	Maintain

Policies 8.2, 8.4 and 8.8 serve the objective, are ongoing in nature and are being implemented. These policies should be maintained. Policy 8.1, which calls for the County to participate in the Indian River Lagoon Blueway project, should be maintained, but revised to reflect the current name of the state acquisition program (i.e., the Florida Forever Acquisition and Restoration Council (ARC) program).

In an effort to improve boat access from the south mainland, the County recently applied for permits to replace the Oslo boat ramp. In the south-central portion of the county, where Gifford Dock Road (a.k.a., 45th Street) terminates at the Indian River Lagoon, the County has an opportunity to construct a new boat ramp access to the lagoon. For these reasons, Policy 8.3 should be revised with a new timeframe for the County to seek funding (e.g., from the Florida Inland Navigation District Waterway Assistance Program) to construct a boat ramp at Gifford Dock Road.

Since the last major update to the comprehensive plan, the County has completed access improvements to Round Island Beach Park. Consequently, Policy 8.5, which calls for completion of those improvements, was achieved and should be deleted.

In 1999, the County adopted a management plan for the Cairns Tract, now known as the Captain Forster Hammock Preserve (CFHP). As such, Policy 8.6 was achieved. While public access improvements have since been constructed on the Jungle Trail-front portion of the CFHP, they have not been constructed on the oceanfront portion. Therefore, Policy 8.6 should be revised to indicate a new timeframe for the County to construct limited beach access facilities on the CFHP oceanfront, consistent with the CFHP management plan.

Leading up to the 2003 centennial celebration of the Pelican Island National Wildlife Refuge (PINWR), the County assisted the U.S. Fish and Wildlife Service (FWS) with funding, design, and construction of public access improvements at the Refuge. In that respect, Policy 8.7 was achieved. This policy should be revised to indicate that the County will provide ongoing assistance to the FWS by emptying trash receptacles and maintaining restrooms at the PINWR.

New Policy: In 2007, the County acquired the Archie Smith Fish House under the County’s environmental lands program, with plans to restore the fish house as a visitor center and “demonstration” working waterfront. The County should adopt a new policy to seek grant funding to restore the Archie Smith Fish House as a demonstration working waterfront.

Overall Assessment of Policies

Through the implementation of the existing policies and addition of the referenced new policy, Objective 8 will continue to be achieved.

Objective 9: Historic Resources

"Through 2020, there will be no significant impact to roads, sites or structures deemed historically or archaeologically significant in Indian River County."

Measure: Protection of designated historic roads, structures, and archaeological sites from significant adverse impacts.

Although Objective 9’s target date is in the future, the objective has been achieved.

Evaluation of Objective: Since 1992, county staff has required archaeological surveys of proposed development projects within areas with high probability of having archaeological resources. In such cases when an archaeological resource is documented at a proposed development site, the developer is required to protect the archaeological site under a conservation easement in conjunction with site development. If substantial protection of the archaeological resource by easement in conjunction with development is not feasible given site characteristics, a developer is required to mitigate impacts by conducting a full “dig” investigation and documentation of the resource prior to development.

Overall, any proposed development sites with potential impacts to historic or archaeological resources, including developments along designated scenic and historic roads, are subject to review and recommendations by the County Historic Resources Advisory Committee (HRAC). Objective 9 is appropriate, has been achieved to date, and should be maintained.

Assessment of Policies

POLICY DESCRIPTION	ACTION/ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED/ DELETED/REVISED?
(9.1) Continue to use incentives such as TDRs, tax relief, mitigation and public acquisition to protect and preserve historic and archaeological resources (cross-reference FLU policy 8.2)	- requirement of archaeological surveys and protection of resources on development project sites - Acquisition of conservation lands with historic structures and archaeological resources - LDR Chapter 933 provisions for tax relief and TDRs	Yes	Yes	Maintain
(9.2) Pursue funding to preserve	- FCT funds obtained to acquire	Yes	Yes	Maintain

POLICY DESCRIPTION	ACTION/ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED/ DELETED/REVISED?
historic sites	conservation lands with historic structures; historic preservation grants sought for restoration			
(9.3) Provide incentives to preserve historic resources – TDRs, tax incentives, etc.	- LDR Chapter 933 provisions for tax relief and TDRs to preserve historic resources on development sites	Yes	Yes	Maintain
(9.4) Requirement of archaeological surveys of new development sites	- Archaeological surveys required for proposed development in areas of high probability to have resources	Yes	Yes	Maintain
(9.5) Implement Objective 8 of the Future Land Use Element (cross reference)	- Historic Resources Advisory Committee (HRAC) input on historic resource protection issues - Requirement of archaeological resource surveys of development sites	Yes	Yes	Maintain
(9.6) Develop management plans for historic / scenic roads (cross-reference Recreation and Open Space Element policies)	- General criteria set forth in LDR Chapter 933	Yes	Yes	Revise timeframe, correct Recreation & Open Space Element policies cross-reference

The policies serving Objective 9, with the exception of Policy 9.6, are appropriate, are ongoing in nature and should be maintained without revisions.

Policy 9.6, which calls for County development of management plans for each of the five roads in the county designated and scenic and historic, should be revised with a new timeframe (by 2012).

Overall Assessment of Policies

Through the implementation of these policies, Objective 9 will continue to be achieved. No new policies are necessary.

Objective 10: Infrastructure in the Coastal Zone

"Through 2020, the level of service (LOS) for traffic circulation, recreational facilities, stormwater management, and potable water and sewer service in the coastal zone of Indian River County will be consistent with the LOS standards set forth in the concurrency section of the Capital Improvements Element."

Measure: Consistency of Levels of Service (LOS) in the coastal zone with concurrency requirements.

Although Objective 10’s target date is in the future, the objective has been achieved.

Evaluation of Objective: All development orders issued by the county must comply with a concurrency management plan and meet level-of-service standards described in the Capital Improvements Element of the comprehensive plan. Development orders are county approvals for construction and/or land development activity, including comprehensive plan amendments, rezonings, site plan approvals, preliminary plat approvals, and building permit approvals for single-family homes located in subdivisions which were approved after the original adoption date (February 13, 1990) of the county’s comprehensive plan.

Concurrency requires that each facility within the geographic scope of a proposed project’s impact area have sufficient capacity to accommodate the project's demand. If that capacity is not available, the project cannot be approved. As a matter of procedure, the County reviews all development orders for consistency with concurrency requirements, including development orders relating to land in the coastal zone. This objective has been achieved to date, is appropriate, and should be maintained, but with a revised time horizon of 2030.

Assessment of Policies

POLICY DESCRIPTION	ACTION/ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED/ DELETED/REVISED?
(10.1) By 2003, decommission remaining wastewater treatment plants in Hurricane Vulnerability Zone (HVZ)	- Package plant in HVZ decommissioned (i.e., Sea Oaks package plant)	Yes	Yes	Delete (completed)
(10.2) Evaluate damaged infrastructure in CHHA; include	- Procedures set forth in the LMS to assess vulnerability of	Yes	Yes	Maintain

POLICY DESCRIPTION	ACTION/ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED/ DELETED/REVISED?
recommendations in the LMS	infrastructure in CHHA			
(10.3) Coordinate with state and federal agencies regarding beach stabilization projects	- state and federal funding sought for beach stabilization projects	Yes	Yes	Maintain
(10.4) Permit utilization of local funds for shoreline stabilization and beach renourishment projects	- Ongoing County policy	Yes	Yes	Maintain
(10.5) Prohibit septic tanks east of the DSSL	- Ongoing County policy (LDR Section 932.06)	Yes	Yes	Maintain
(10.6) Maintain standards, phasing, and funding of infrastructure in coastal zone consistent with the Infrastructure Elements	- Ongoing policies reflected in the Transportation, Sanitary Sewer, Potable Water and Stormwater Sub-Elements	Yes	Yes	Maintain

Policy 10.1 provides that, by 2003, the County shall decommission all remaining wastewater treatment package plants in the Hurricane Vulnerability Zone (HVZ). A number of years ago, the one remaining treatment plant in the HVZ, at Sea Oaks Development on the barrier island, was decommissioned. Consequently, Policy 10.1 was implemented and should be deleted. The other policies serving this objective are appropriate, are ongoing in nature, and should be maintained.

Overall Assessment of Policies

Through the implementation of these policies, Objective 10 will continue to be achieved. No new policies are necessary.

Objective 11: Limit Densities in the Coastal High-Hazard Area

“Through 2020, there will be no increase in the density of land use within the Coastal High Hazard Area.”

Measure: Land use density in the Coastal High Hazard Area (CHHA).

Although Objective 11’s target date is in the future, the objective has been achieved.

Evaluation of Objective: As described in the Evaluation and Appraisal Report (EAR) of the Future Land Use Element, the gross residential density of the unincorporated portions of the barrier island is 1.8 dwelling units per acre, less than the maximum allowed by the comprehensive plan. No increase in density was approved in the CHHA between 1995 and 2008. As such, Objective 11 was achieved. This objective is appropriate and should be maintained, but with a new time horizon of 2030.

Assessment of Policies

POLICY DESCRIPTION	ACTION/ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED/ DELETED/REVISED?
(11.1) Environmental Lands Program acquisitions to include lands in the Hurricane Vulnerability Zone (HVZ)	- Acquisition of conservation lands in the HVZ under the Environmental Lands Program	Yes	Yes	Maintain
(11.2) Limit infrastructure in the CHHA so as not to increase land use intensity in the CHHA	- Infrastructure improvements in the CHHA limited so as not to increase development density	Yes	Yes	Maintain
(11.3) Limit public and private development in the CHHA utilizing all applicable state, federal and local regulations and policies	- Implementation of policies and regulations that limit development in the CHHA	Yes	Yes	Maintain

The three policies serving this objective were successfully implemented, are ongoing in nature and should be maintained.

Overall Assessment of Policies

Through the implementation of these policies, Objective 11 will continue to be achieved. No new policies are necessary.

Objective 12: Boating Safety and Law Enforcement

“Through 2010, the annual accident rate in Indian River County will be at or below the 1995 baseline rate of 131 accidents per 100,000 registered boaters. Furthermore, there will be no incidence of watercraft-related human fatalities.”

Measure: Annual watercraft-related accident rates.

Although Objective 12’s target date is in the future, the objective has been achieved.

Evaluation of Objective: A boating accidents statistical report by the Florida Fish and Wildlife Conservation Commission (FWC) indicates that, in 2007, there were eight reportable boating accidents in the county, compared to 11,740 registered vessels in the county. That rate is approximately 52% lower than the baseline rate of 131 accidents per 100,000 registered boaters. The FWC report also indicates that there were no watercraft-related human fatalities in the county in 2007. Objective 12 is appropriate and should be maintained, but with a new time horizon through 2015.

Assessment of Policies

POLICY DESCRIPTION	ACTION/ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED/ DELETED/REVISED?
(12.1) By the end of 2005, request manatee protection speed zone modifications	- Request for speed zone modifications	Yes	Yes	Revise to indicate speed zone modifications as part of MPP 2009 update
(12.2) By the end of 2005, establish a citizens’ marine patrol	- Vero Beach Coast Guard Auxiliary provides boating safety education and patrol operations	Yes	Yes	Revise to reflect ongoing Coast Guard Auxiliary patrol operations

Policy 12.1 provides that, by the end of 2005, the County shall request the State to approve certain amendments to manatee protection speed zones in the county, at Gifford Cut, Wabasso Causeway, under the three bridges in the county, and north of Merrill Barber Bridge. In 2005, FWC staff were contacted and requested to amend the speed zones, but the FWC advised that such amendments should be tied to the five-year evaluation and assessment of the County’s Manatee Protection Plan (MPP) that is due in 2009. Accordingly, Policy 12.1 should be revised with a new timeframe of 2010.

Currently, the Vero Beach Power Squadron and the Vero Beach Coast Guard Auxiliary provide boating safety education. The Coast Guard Auxiliary also provides volunteer patrol operations in the county. Policy 12.2, which calls for the County to establish a citizens' marine patrol, should be revised to indicate that the County will support the Power Squadron's and Coast Guard Auxiliary's educational and voluntary marine patrol operations by providing in-kind services, such as locations for meetings and assistance in applying for grant funding for program operations.

Overall Assessment of Policies

Through the implementation of these policies, Objective 12 will continue to be achieved. No new policies are necessary.

Objective 13: Education / Public Awareness

"By 2005, informational kiosks displaying manatee protection practices, safe boating practices, and the designated speed zones of the inland waters of the county will be installed at all public boat ramps in Indian River County."

Measure: Manatee protection and boating safety information posted at all public boat ramps.

Objective 13 was not achieved.

Evaluation of Objective: since the last major update to the comprehensive plan, an informational kiosk with manatee protection and boating safety information was installed at the Wabasso Causeway Park, in association with restroom and boat ramp improvements at the park. In September 2004, however, hurricanes damaged the kiosk, and the kiosk has not been replaced. Although there are informational displays on "No Name Island" at Round Island Park (riverside) with information about wildlife in the area, there is no kiosk at the location of the Round Island boat ramp with manatee protection, boating safety and speed zone information. Similarly, there is currently no informational kiosk at the Oslo boat ramp. Although this objective was not achieved, it is appropriate and should be maintained, but with a revised timeframe of 2010.

Assessment of Policies

POLICY DESCRIPTION	ACTION/ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED/ DELETED/REVISED?

POLICY DESCRIPTION	ACTION/ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED/ DELETED/REVISED?
(13.1) By 2005, construct informational displays at public boat ramps	- Information displays constructed at Wabasso Causeway and Round Island Riverside Park	Yes	Yes	Revise timeframe to construct new or replacement displays at all boat ramps
(13.2) Distribute manatee awareness and boating safety materials to local boaters	- Distribution of manatee awareness information at appropriate locations	Yes	Yes	Maintain
(13.3) By 2005, initiate a monofilament line recycling program with receptacles at public fishing locations	- Monofilament line recycling receptacles at certain locations	Yes	Yes	Revise timeframe
(13.4) Require posting of manatee awareness signs at boat facilities	- Requirement that existing and new boat facilities post manatee awareness signs	Yes	Yes	Maintain
(13.5) By 2005, require rental vessels to display stickers or cards with boating safety and manatee protection information	-Require rental vessels to display stickers or cards with boating safety and manatee protection information	Yes	Yes	Revise timeframe

Policies 13.1, 13.3 and 13.5 are appropriate and should be maintained, but with new timeframes (by 2010). The other two policies, 13.2 and 13.4, serve the objective, are ongoing in nature and should be maintained, without need for revision.

Overall Assessment of Policies

Through the implementation of these policies, Objective 13 will be achieved. No new policies are necessary.

Objective 14: Manatee Protection Measures

"Through 2005, the annual number of manatee mortalities in Indian River County shall be no more than five excluding unusual events such as red tide or disease outbreaks. Of these annual mortalities, no more than one mortality shall be watercraft-related."

Measure: Annual number of manatee mortalities in Indian River County.

Objective 14 was not achieved.

Evaluation of Objective: From 2003 through 2007, the average annual number of manatee mortalities in the county was 8.2. The average annual number of manatees killed by watercraft in the county during that time period was 1.8. That average was skewed upward by a particularly bad year for manatees in 2005, when 16 manatee mortalities were documented in the county, 5 of which were attributed to watercraft collisions. Excluding 2005 as an anomaly, the average annual number of manatee mortalities from 2003 through 2007 was 6.25, with an annual average of one attributed to watercraft collisions. Although Objective 14 was not achieved, the objective is appropriate and should be maintained, but with a revised “through” date of 2015.

Assessment of Policies

POLICY DESCRIPTION	ACTION/ACCOMPLISHMENT	DID THIS POLICY CONTRIBUTE TO MEETING THE OBJECTIVE?	WAS THE ORIGINAL POLICY APPROPRIATE?	SHOULD THIS POLICY BE MAINTAINED/ DELETED/REVISED?
(14.1) Coordinate with the City of Vero Beach Utilities Department and FWC to prevent disruption of temperature flows at power plant in winter	- FWC coordination with Vero Beach Utilities regarding power plant outflow disruption minimization in winter	Yes	Yes	Maintain
(14.2) By 2005, obtain funds to retrofit stormwater outfalls in tidal waters to prevent manatee entrapment	- IRMCD retrofitting of impoundment culverts with bars to reduce risk of entrapment	Yes	Yes	Revise timeframe to identify and retrofit any remaining culverts or pipes posing manatee risk

Policy 14.1 serves the objective, is ongoing and nature and should be maintained.

In the past several years, the Indian River Mosquito Control District (IRMCD) has undertaken a task of retrofitting mosquito impoundment culverts by installing bars to prevent entrapment of manatees. Policy 14.2 should be revised with a new timeframe for the County, in cooperation with the IRMCD, to identify and retrofit any remaining culverts or pipes that may pose a threat of manatee entrapment.

Overall Assessment of Policies

Through the implementation of these policies, Objective 14 will be achieved. No new policies are necessary.

OVERALL EVALUATION OF OBJECTIVES

The objectives of the Coastal Management Element, with the proposed revisions, are sufficient to meet the overall intent of the element.

IDENTIFICATION OF FUTURE ACTIONS

The results of the evaluation of the existing conditions, objectives, and policies identified in the previous section are used to determine the future courses of actions needed to improve conservation conditions. The following section highlights anticipated amendments to the data, maps, texts, objectives and policies. These amendments will be incorporated in the revised version of the Coastal Management Element of the Comprehensive Plan, scheduled to be completed by the end of calendar year 2009.

ANTICIPATED AMENDMENTS

The following EAR related amendments to the Coastal Management Element are needed to update the element's data and analysis as well as its goals, objectives, and policies sections. The following revisions are necessary:

Tables and Figures

Each of the Coastal Management Element's tables and figures must be updated to reflect current conditions.

Text

Since the text of this element will be a part of the new Coastal Management Element, and existing data and analysis will be revised, major revisions to the text will be required.

Objectives and Policies

Anticipated amendments to the objectives and policies of the Coastal Management Element are summarized below.

OBJECTIVE	POLICY	REVISION
1	1.7	Delete (Manatee Protection Plan has been adopted)
1	1.8	Revise to reflect date of five-year review of the MPP (2009)
1	1.12	Delete (interim measure moot; MPP has been adopted with measures)
1	1.14	Delete (lands in PINWR have been designated for aquaculture)
1	1.15	Revise shoreline buffer requirement so as not to apply to platted lots with existing seawalls
1	New policy	Obtain receiver site certification for gopher tortoise relocations to county conservation lands
1	New policy	Use various methods to protect natural systems and wildlife corridors, including TDRs, clustering, land acquisition, conservation easements and greenbelts
2	2.1	Revise to reflect changes in Class II waters in areas of the IRL
2	2.2	Revise to reflect changes in Class III waters in areas of the IRL
2	2.4	Revise to reflect 2008 updates to the IRLNEP CCMP
2	2.5	Revise time horizon and reference Total Maximum Daily Loads (TMDLs)
2	2.6	Revise to reflect recent revisions to littoral zone requirements
2	New policy	Monitor water quality in IRL and St. Sebastian River to determine success of existing water quality improvements projects and need for new projects/locations
2	New policy	Support of federal and state funding for implementation of the IRL Comprehensive Everglades Restoration Plan
3	-----	Revised time horizon
3	3.9	Revise to reflect coordination with municipalities on five-year updates to MPP
3	3.13	Revise target date for GIS mapping of marina siting constraints
4	-----	Revise time horizon
4	4.1	Revise to evaluate moving DSSL westward (by 2012)
4	4.5	Delete (dune crossover maintenance plan implemented)
4	4.10	Revise to reflect ongoing monitoring of PEP reef
4	4.11	Revise target date

OBJECTIVE	POLICY	REVISION
4	New policy	Support FWC and DEP development of a statewide Florida beaches habitat conservation plan (HCP)
4	New policy	Require new oceanfront development to hook up to public sewer where available
5	-----	Revise time horizon
5	5.1	Revise to reflect new CHHA based on Category 1 storm surge, depict on FLU map
5	5.4	Revise to reflect maintenance of current CRS 6 rating
6	6.2	Revise target date
6	6.3	Revise as ongoing policy
7	New policy	Assist FEMA with map modernization project, public workshops
7	New policy	Adopt procedures in LMS for removal of marine debris resulting from natural disasters
8	-----	Revise time horizon
8	8.1	Revise to update CARL to Florida Forever ARC
8	8.3	Revise to indicate County will seek funding to construct a boat ramp at Gifford Dock Road
8	8.5	Delete (improvements to Round Island Beach Park completed)
8	8.6	Revise to set a target date to construct limited beach access facilities at the Captain Forster Hammock Preserve
8	8.8	Revise to reflect ongoing public access facilities maintenance assistance at the PINWR
8	New policy	Seek grant funding for restoration of the Archie Smith Fish House acquisition
9	9.6	Revise target date and cross-reference
10	-----	Revise time horizon
10	10.1	Delete (completed)
11	-----	Revise time horizon
12	-----	Revise time horizon
12	12.1	Revise to indicate manatee speed zone modifications request as part of MPP five-year update (2009)

OBJECTIVE	POLICY	REVISION
12	12.2	Revise to reflect support for VB Power Squadron and Coast Guard Auxiliary through in-kind services and grant writing
13	-----	Revise target date (2010)
13	13.1	Revise target date (2010)
13	13.3	Revise target date (2010)
13	13.5	Revise target date (2010)
14	-----	Revise time horizon
14	14.2	Revise target date to identify and retrofit any remaining culverts or pipes posing manatee risk

GOAL, OBJECTIVES AND POLICIES

GOAL

To protect, maintain and enhance coastal resources and provide for the enjoyment of the social, economic and natural benefits of these resources, while reducing the potential loss of life, and public and private expenditures in the coastal zone.

OBJECTIVE 1 Natural Resource Protection

Using 1990 data as a baseline, through 2020, there will be no significant reductions in the overall amount of terrestrial and marine resources within the coastal zone of Indian River County.

Policy 1.1: The county shall not permit development in areas deemed environmentally-sensitive and environmentally-important unless the criteria established in the following sections of the Comprehensive Plan are met:

- Comprehensive Wetlands Management Program (CWMP), as outlined in the Conservation Element;
- Policies 1.6 and 1.7 of the Future Land Use Element; and,
- Policies of Objectives 5 and 6 of the Conservation Element.

Policy 1.2: As set forth in the CWMP and Policy 1.6 of the Future Land Use Element, all estuarine wetlands and deepwater habitats in Indian River County shall be deemed environmentally-sensitive and designated as C-2 on the future land use map. The extent of estuarine wetlands on C-2 designated lands shall be based on a jurisdictional wetlands boundary determination, as verified by the Environmental Planning Section, U.S. Army Corps of Engineers and the Florida Department of Environmental Protection or the St. Johns River Water Management District. Land designated C-2 shall be afforded the following protective measures:

- Development on C-2 designated wetlands shall be limited to one (1) unit per 40 acres, subject to approval of jurisdictional agency wetlands alteration permits;
- For development projects having C-2 designated lands and contiguous uplands, the county shall allow a density transfer of one (1) unit per acre from the wetlands portion to the upland portion of the subject property, provided that the underlying zoning density of the receiving upland portion is not increased by more than 50 percent. Such density transfers shall be limited to planned residential developments (PDs).

- No density transfers from off-site lands, and no density bonuses shall be permitted within PD projects on C-2 designated lands; and,
- The county shall allow a density transfer of one (1) unit per acre from C-2 estuarine wetlands to non-contiguous uplands, provided that the receiving uplands are developed as a residential PD, and the underlying zoning density of the receiving uplands is not increased by more than 20 percent.

Policy 1.3: All significant tracts of xeric scrub and coastal/tropical hammock communities, larger than five (5) acres, shall be deemed environmentally-important, and shall be afforded protective measures, including transfer of density rights (TDRs), cluster development requirements, and native upland set-aside requirements, as set forth in Policy 6.12 of the Conservation Element.

Policy 1.4: Environmental surveys shall be required for developments proposed in environmentally-sensitive and environmentally-important areas. The focus of these surveys shall be: jurisdictional wetland boundaries, natural vegetative communities, the presence of existing or potential wildlife habitat and/or the presence of threatened or endangered species of flora or fauna.

Policy 1.5: As set forth in Policy 7.2 of the Conservation Element, the county shall coordinate field inspections, environmental survey reviews, and habitat preservation measures on a site development basis with federal and state agencies concerning the protection of endangered species, threatened species, and species of special concern. Where appropriate, the county will require a habitat conservation plan.

Policy 1.6: The county shall protect sea turtles and their nesting habitats by implementing the protection measures listed under Policy 7.7 of the Conservation Element.

Policy 1.7: By 1998, the county shall complete a Manatee Protection and Boating Safety Comprehensive Plan, and implement the policies listed under Objective 3 of this element.

Policy 1.8: By June 1998, the county will coordinate with the FDEP and the Florida Marine Patrol (FMP) to evaluate, and make recommendations concerning existing Manatee Protection speed zones in the IRL.

Policy 1.9: As set forth in the policies and objectives of the Conservation Element, the county shall protect and preserve significant coastal vegetative communities, such as coastal (maritime) hammocks and coastal strand, through conservation easements and fee simple acquisition.

Policy 1.10: Consistent with Policy 6.1 of the Conservation Element, the county shall continue to assist the USFWS and the FDEP in acquiring undeveloped tracts of tropical/coastal hammock and coastal strand by identifying lands eligible for acquisition, evaluating local cost-share funding, and by providing “in-kind” services, such as land management.

Policy 1.11: Indian River County shall support the SJRWMD’s efforts to establish update-to-date and accurate maps of submerged aquatic vegetation (SAV) communities by providing in-kind mapping and surveying services.

Policy 1.12: Until the county adopts and the state approves the County Manatee Protection and Boating Safety Comprehensive Management Plan, the following interim requirements shall apply to minimize adverse impacts to SAV communities:

- Covered boat slips, covered terminal platforms, and unwallied boat shelters shall be prohibited in areas of the IRL exhibiting greater than ten (10) percent SAV coverage, unless covered areas are constructed of a translucent material;
- A maximum density threshold of one (1) powerboat slip per 100 feet of shoreline shall be applicable within areas of the IRL exhibiting greater than ten (10) percent SAV coverage. These areas, as described in the Marina Facility Siting portion of this element, include: Zone 1, Zone 2, Zone 4, the portion of Zone 6 lying within the Town of Indian River Shores, Zone 8, and Zone 9; and
- Any marina facility siting or expansion that impacts SAV beds shall be required to perform on-site mitigation to SAV beds. In the event on-site mitigation is not practical, off-site restoration mitigation, and/or increased manatee protection may be considered. However no fee-in-lieu payments will be accepted as mitigation.

Policy 1.13: Indian River County shall continue to promote both commercial and private fishing activities within the county through management of marine habitats and permitting of fishing resources.

Policy 1.14: The county shall adopt a resolution in support of the State’s efforts to expand the amount of submerged lands available for aquaculture leases within the Pelican Island National Wildlife Refuge. By 1999, the county will designate the expanded lease area as an aquaculture use zone.

Policy 1.15: All non-water-related and non-water-dependent uses shall be subject to setbacks from the St. Sebastian River and the Indian River Lagoon Aquatic Preserves in order to afford a shoreline protection buffer as set forth in LDR Chapter 929. The shoreline protection buffer setbacks are as follows:

- For parcels created after June 18, 1991, along the St. Sebastian River, a 100 foot shoreline buffer measured from the mean high water line (MHWL), or 50 feet from the landward boundary of wetlands, shall be required; and,
- For parcels of record which existed prior to June 18, 1991, a 50 foot shoreline buffer for unplatted parcels, and a 25 shoreline buffer measured from the MHWL of the St. Sebastian River or the IRL shall be required. However, the shoreline buffer shall not exceed more than 20 percent of the parcel depth perpendicular to the St. Sebastian River or IRL.

OBJECTIVE 2 Estuarine Water Quality

Through 2020, there will be no significant reduction in the water quality of the Indian River Lagoon or the St. Sebastian River.

Policy 2.1: The county hereby adopts the State designation of Class II - “shellfish propagation or harvesting,” as defined in the 1996 Water Quality Assessment for the State of Florida (305(b) Report), as the water quality standard for the following portions of the IRL located within the unincorporated county: Sebastian Inlet extending south to C.R. 510, east of the Intracoastal Waterway (ICW); South of C.R. 510 extending to the northern City Limits of Vero Beach (both sides of the ICW); southern City Limits of Vero Beach extending south to the Indian River-St. Lucie County line, east of the ICW. (Ref. Figure 9.11)

Policy 2.2: The county hereby adopts the State designation of Class III suitable for “Recreation, propagation, and maintenance of a healthy, well-balanced population of fish and wildlife,” as defined in the 1996 Water Quality Assessment for the State of Florida (305(b) Report), as the minimum water quality standard for the following portions of the IRL located within Indian River County: Sebastian Inlet extending south to C.R. 510, west of the ICW; southern City Limits of Vero Beach extending south to the Indian River-St. Lucie County line, west of the ICW (Ref. Figure 9.11). The county will strive to improve the surface water quality within the aforementioned sections of the IRL to State Class II water quality standards.

Policy 2.3: In accordance with the Indian River Lagoon Act, the county shall prohibit all new point-source discharges into the Indian River Lagoon.

Policy 2.4: The county shall implement recommendations contained in the Indian River Lagoon National Estuary Program’s (IRLNEP) Indian River Lagoon Comprehensive Conservation and Management Plan (CCMP) and the SRJWMD’s Surface Water

Improvement and Management (SWIM) Plan to reduce the amount of non-point source pollution entering the Indian River Lagoon.

Policy 2.5: By 2000, the county will establish Water Quality Level of Service (WQLOS) standards for each drainage basin within the county. The county's WQLOS standards will be based on the Pollutant Load Reduction Goals (PLRGs) being developed by the SJRWMD.

Policy 2.6: Indian River County shall improve the quality of and reduce the overall amount of freshwater inflow to the Indian River Lagoon by:

- requiring all new development in the coastal zone to utilize on-site retention or detention methods consistent with the provisions of the Stormwater Management Sub-Element prior to being discharged to the IRL ;
- requiring new development to utilize natural drainage features, such as impounded and unimpounded wetlands and swales, to the maximum extent possible for stormwater management;
- requiring all new development to retain, at minimum, the first one (1) inch of stormwater runoff. In addition, the county will require retrofitting to achieve compliance with existing stormwater requirements where renovations or additions of greater than 50% to existing structures occur;
- initiating a program to regularly inspect stormwater management facilities to ensure proper operation and maintenance, and invoke penalties for malfunctioning, altered, abused or neglected systems; and
- requiring any new stormwater retention pond greater than one-half (1/2) acre in size to have a native littoral vegetation, unless deemed unnecessary from a water quality standpoint by the St. Johns River Water Management District.

Policy 2.7: All marina facilities, single-family docks, bulkheads, and other similar structures constructed in, adjacent to, or directly affecting the surface waters of Indian River County, shall be located and designed in order to allow for maximum water circulation, and to minimize impacts to submerged aquatic vegetation and other marine resources.

Policy 2.8: The county shall require all dredge and fill operations to utilize proper mitigation techniques and devices, in addition to obtaining all applicable federal, state and local permits.

Policy 2.9: The county shall prohibit the discharge of any waste and/or pollutant material into surface waters, by any commercial, public or private vessel, when such activity is under county jurisdiction.

Policy 2.10: The county shall implement the policies under Objective 2 of the Conservation Element and Objective 7 of the Stormwater Management Sub-Element to improve water quality within the Indian River Lagoon and the other surface waters of Indian River County.

OBJECTIVE 3 Boat Facility and Boat Ramp Siting and Construction

Through 2010, there shall be no increased impact to manatee habitat, or the natural resources of the Indian River Lagoon, including seagrass beds, water quality, estuarine wetlands, and mangrove fringe, attributed to the development or expansion of boat facilities or boat ramps in Indian River County.

Policy 3.1: The siting of new or expansion, rearrangement, or slip conversion of all boat facilities and boat ramps in Indian River County, and in each municipal government with jurisdiction over a portion of the inland waters of Indian River County, shall be consistent with the assessment criteria and policies established in the Indian River County Manatee Protection and Boating Safety Comprehensive Management Plan (MPP).

Policy 3.2: Boat Facility Siting Zones (1-9), as described in the Analysis section of the MPP, are hereby established. The purpose of these Zones is to provide the public with some guidance as to the potential for the siting of new boat facilities or for the expansion, rearrangement, or conversion of an existing boat facility. The regulatory criteria to be applied to each zone represent the baseline criteria that all proposed projects must meet. In addition to these Zones, specific criteria will be applied to each request for a new boat facility or the expansion, rearrangement, or conversion of an existing boat facility. These criteria are as follows:

1. The siting of new boat facilities, or the expansion or slip conversion of existing boating facilities shall be prohibited in the following areas of Indian River County:
 - All of the St. Sebastian River west of the U.S. 1 Bridge; and
 - All of the Pelican Island National Wildlife Refuge.
2. The siting of new boat facilities, or the expansion, slip conversion or rearrangement of existing boating facilities, shall be prohibited in the following areas:

- Within the Town of Orchid;
- Within the Town of Indian River Shores;
- Within the area known as the Jungle Trail Narrows; and
- Within any area designated as both a High Manatee Use area and a High Watercraft-related Manatee Mortality area, as defined in the MPP.

Exceptions: The siting of new residential marinas, or the expansion, rearrangement or slip conversion of existing residential marinas, may be allowed in the prohibited areas identified in this Policy Subsection 3.2.2 under the following conditions:

- a. The proposed new or expanded residential marina is in lieu of single-family docks that could otherwise be built through riparian rights at riverfront lots within the development served by the residential marina, and the residential marina will result in less environmental impact than the alternative single-family docks, provided the residential marina will not breach the 1:100 powerboat slip to linear-foot shoreline ratio set forth in Policy 3.14. Under this section, an applicant for a new or expanded residential marina in lieu of single-family docks shall be required to record a conservation easement, in favor of the County or the State, along the shoreline of the riverfront lots that would otherwise be eligible for single-family docks.
- b. Slip conversions of existing boat facilities may be allowed on a one-time basis at a density of 1.5 total powerboat slips per 100 feet of shoreline if the facility is not located in an area of high manatee use and high manatee mortality based on the definitions and criteria in the MPP, and if the powerboat to shoreline restriction has been in place prior to July 1993, when the countywide speed zone rule was posted.
- c. The physical rearrangement of boat facilities may be authorized in the above noted areas of prohibition provided the following criteria are met:
 - i. The number of slips at the boat facility is not increased (i.e., expansion);
 - ii. The number of boats that can moor at the boat facility is not increased;
 - iii. The size of the rearranged slips or mooring area is not increased;
 - iv. The resulting footprint of the structure is not increased; and
 - v. The rearrangement will result in the removal or cessation of any non-water dependent structure or activity associated with the existing boat facility, as applicable.

In every case, the rearrangement shall result in a net benefit to manatee and manatee habitat protection.

3. The siting of new or the expansion, rearrangement, or slip conversion, of existing boating facilities shall be prohibited when one or more of the following conditions are met:
 - a. The footprint of the boating facility (including all docks, access walkways, finger piers, mooring areas, turning basins, and ingress and egress pathways) has submerged aquatic vegetation (SAV) coverage of ten (10) percent or greater using a scientifically acceptable method of coverage determination and such determination is made between the months of May through October;
 - b. The water depth within mooring areas, turning basins, and ingress and egress pathways is less than -4 feet at MLW unless the following criterion is met:
 - One-foot clearance at MLW between the lowest portion of the vessel (with the engine in the down position) and submerged aquatic vegetative resources (or submerged bottom, in areas devoid of vegetative resources) within the mooring areas, turning basins, and ingress and egress pathways.
 - c. There is less than a 150' distance between the waterward most projection of the boat facility (including mooring pilings and boats) and the ICW channel.
4. The siting of new or the expansion, rearrangement, or slip conversion, of existing boating facilities shall be evaluated using all the following criteria:
 - a. No more than 100 linear feet of native shoreline vegetation shall be altered (trimmed, cut, removed, killed, or destroyed);
 - b. A site located within a High Manatee Use area, or a High Watercraft-related Manatee Mortality area, as defined in the MPP, shall be subject to site-specific design restrictions to minimize potential adverse manatee impacts, including (but not limited to): restrictions on the total number of boat slips allowed; use of more upland storage instead of wet storage; restrictions on the maximum size of boats that use the facility (powerboat:sailboat ratio); re-design of the facility/marina; establishment of a powerboat to length of shoreline ration (e.g., one powerboat per 100 feet of shoreline); and/or

reduction in the size of the facility/marina; and

- c. The following sections of the MPP Action Plan: Objective 1, Boat Facility and Marina Siting and Construction, Sections 1.2, 1.4, 1.5, 1.6, 1.7, 1.8, 1.14, and 1.15.

Using the evaluation criteria in Section 4 above may result in additional restrictions on the design, size, shape, and use of the boating facility/marina. These restrictions may include, but are not limited to: the total number of boat slips allowed, use of more upland storage instead of wet storage, restricting the maximum size of boats that use the facility/marina, restricting the number of powerboats that use the facility (powerboat to sailboat ratio), re-designing the facility/marina, establishing a powerboat to length of shoreline ratio (e.g., one powerboat per 100 feet of shoreline), or reducing the size of the facility/marina.

5. In addition, any new or the expansion, or rearrangement, or slip conversion, of existing boating facilities will be required to comply with all applicable state and federal permitting and authorization processes.

6. Notwithstanding the other criteria of this Policy 3.2, slip conversions of existing boat facilities in Indian River County may be allowed on a one-time basis at a density of 1.5 total powerboat slips per 100 feet of shoreline if the facility is not located in an area of high manatee use and high manatee mortality based on the definitions and criteria in the MPP, and if the powerboat to shoreline restriction on the existing facility has been in place prior to July 1993, when the countywide speed zone rule was posted.

Policy 3.3: The following boat ramp siting criteria shall be used to evaluate any new boat ramp or the rearrangement or expansion of an existing boat ramp. These criteria shall be applied to all boat ramps (e.g., new, existing, private, public, commercial, recreational, multi-family, or individual single-family).

1. The rearrangement of existing boat ramps shall not be subject to the boat ramp siting criteria unless any one of the following are true:
 - a. The rearrangement will result in more lanes than currently exist (i.e., expansion);
 - b. The rearrangement will result in the boat ramp being able to increase the volume of traffic (e.g., increase the number of parking spaces, make the boat ramp more accessible, deepen or widen the access channel);

- c. The rearrangement will result in the boat ramp being able to be used by larger vessels (e.g., increase the size of the parking spaces, deepen or widen the access channel); or
 - d. The rearrangement, or the associated construction, will destroy, alter, or disturb any native upland, shoreline vegetation, or SAV.
2. The siting of new or the rearrangement or expansion of existing boat ramps shall be prohibited in the following areas of Indian River County:
- All of the St. Sebastian River west of the U.S. 1 Bridge;
 - All of the Pelican Island National Wildlife Refuge;
 - The area known as Jungle Trail Narrows;
 - Town Limits of Orchid;
 - Town Limits of Indian River Shores;
 - If the proposed site is within a High Manatee Use area AND a High Watercraft-related Manatee Mortality area, as defined in this MPP.
3. The siting of new or the rearrangement or expansion of existing boat ramps shall be prohibited when one or more of the following conditions are met:
- a. The footprint of the new boat ramp or the rearrangement or expansion of the existing boat ramp (including all proposed lanes, docks, access walkways, finger piers, mooring areas, turning basins, and ingress and egress pathways) has a SAV coverage of ten (10) percent or greater using a scientifically acceptable method of coverage determination and such determination is made between the months of May through October;
 - b. The site, whether new or existing, is located within a High Manatee Use area, AND a High Watercraft-related Manatee Mortality area as defined in the MPP; or
 - c. The site, whether new or existing, is located such that new dredging will be required or necessary to provide access to the ICW or to deeper water AND the site is located within or on land adjacent to a FDEP designated Aquatic Preserve. This does not include manmade waterbodies such as canals or basins, or privately owned submerged bottom.

In the event that all the required or necessary dredging is determined by the FDEP or the SJRWMD to be maintenance dredging then this subsection [3(c)] does not apply. The determination of maintenance dredging shall be made in writing by the FDEP or SJRWMD and submitted to County Planning staff. It is

the responsibility of the applicant, the property owner, or developer to secure this written documentation. If any of the required or necessary dredging is determined to not be maintenance dredging (i.e., new dredging) then that part of the proposed project involving the proposed new dredging and any other activity or structures associated with the proposed new dredging, is prohibited.

4. The siting of new or the rearrangement or expansion of existing boat ramps shall be evaluated using all the following criteria:

(a) No more than 100 linear feet of native shoreline vegetation shall be altered (trimmed, cut, removed, killed, or destroyed);

(b) A site located within a High Manatee Use area, OR a High Watercraft-related Manatee Mortality area, as defined in this MPP shall be subject to site-specific design restrictions to minimize potential adverse manatee impacts, including (but not limited to): restrictions on the total number of boat lanes allowed; restrictions on the maximum size of boats that use the boat ramp; limitations on the size of boat trailer parking spaces; limitations on the depth of the boat ramp and/or the ingress – egress channel; posting of informational signs; installation of navigational aids; re-design of the boat ramp; and/or reduction in the size of the boat ramp.

(c) Maintenance dredging, as determined in writing by the FDEP or the SJRWMD, shall be restricted to those areas where maintenance dredging has been determined and shall conform to one of the following situations using the order in which the situations are presented:

i. The dredging shall conform with the original dredging permit specifications, if one was issued;

ii. The dredging shall conform with the original design specifications, if the existing project was done prior to the issuance of permits required by federal, state, or local government entities;

iii. The dredging shall be no deeper than to a maximum water depth of five (5) feet at mean low water, and no wider, at the top of the submerged bottom, than to safely allow the passage of two boats side-by-side, the size of which the boat ramp was/is designed to accommodate.

- (d) If there is no existing access channel that provides for adequate water depth from the boat ramp to the ICW or to deeper water (i.e., not maintenance dredging) AND the site is not within or adjacent to a FDEP designated Aquatic Preserve, then the proposed project may be authorized if the following are complied with:
- a. The area of new dredging shall not have a SAV coverage of greater than ten (10) percent as determined using a scientifically acceptable method of coverage determination and such determination is made between the months of May through October;
 - b. The total length of new dredging shall not exceed 500 feet.
 - c. The boat ramp facility shall have informational signs in clear view of boaters launching and landing vessels. Signs used to comply with this section shall be in addition to any signs required by the regulatory agency. Signs shall also be installed that warn boaters of the need to stay in the channel.
 - d. The access channel shall be marked in accordance with U.S. Coast Guard and FWC standards.

Policy 3.4: Within the unincorporated portion of Indian River County, private residential marinas shall be permitted with administrative permit approval in the following Residential Single-family (RS), and Residential Multi-family (RM) zoning districts: RS-1, RS-2, RS-3, RS-6, RT-6, RM-3, RM-4, RM-6, RM-8, and RM-10.

Policy 3.5: Within the unincorporated portion of Indian River County, public/private residential marinas shall be permitted with special exception approval in the following Residential Single-family (RS), and Residential Multi-family (RM) zoning districts: RS-1, RS-2, RS-3, RS-6, RT-6, RM-3, RM-4, RM-6, RM-8, and RM-10.

Policy 3.6: Within the unincorporated portion of Indian River County, recreational marinas shall be permitted in general commercial (CG) and heavy commercial (CH) zoning districts. Recreational marinas shall be permitted with special exception approval in the following zoning districts: office-commercial-residential (OCR), neighborhood commercial (CN), and limited commercial (CL).

Policy 3.7: Within the unincorporated portion of Indian River County, commercial marinas shall be permitted in the following zoning districts: heavy commercial (CH), light industrial (IL), and general industrial (IG). Commercial marinas shall be permitted in the general commercial (CG) zoning district with administrative permit approval.

Policy 3.8: The county shall require an on-site mitigation plan to be submitted as part of any proposal to site or expand a boat facility within an area of the IRL exhibiting environmental constraints, such as manatee use, the presence of seagrass beds and/or shoreline vegetation. Off-site restoration and/or mitigation to seagrass beds or estuarine wetlands are alternative techniques that may be considered in the event that on-site mitigation is not practical. No fee-in-lieu payments will be accepted as mitigation.

Policy 3.9: By July 2005, the County shall coordinate with the Town of Indian River Shores, the Town of Orchid, the City of Sebastian and the City of Vero Beach concerning siting of marina/boat facilities and the overall implementation of this MPP by conducting public workshops and by soliciting comments from the staff and elected officials of these municipal governments.

Policy 3.10: In the event that an existing marina is destroyed by a natural disaster, the marina may be re-built within the same footprint of the damaged structure provided that the marina was in compliance with regulations at the time of its construction. Existing Marinas that are re-built shall be consistent with the policies listed under Objective 1 of the MPP.

Policy 3.11: Covered boat slips, covered terminal platforms, and unwallied boat shelters shall not be permitted in areas where SAV coverage is ten (10) percent or greater.

Policy 3.12: Floating docks and dock designs that have the potential to entrap manatees or prevent them from accessing foraging areas shall be prohibited.

Policy 3.13: By 2005, the County Environmental Planning Section, in cooperation with the FWC's Bureau of Protected Species Management, will produce a map titled Constraints to Boat Facility Siting in the IRL. This map will display the areas of high, medium and low constraints throughout the county. Density thresholds and limitations for development shall apply to sites within these locations. This map will be kept on file in the Community Development Department, and will be used to conduct site-specific reviews of boat facility siting and expansion proposals.

Policy 3.14: A maximum density threshold of one (1) powerboat slip per 100 feet of shoreline along the IRL shall apply in Zone 1, Zone 2, Zone 4, the portion of Zone 6 lying within the Town of Indian River Shores, Zone 8, and Zone 9.

Policy 3.15: The County shall encourage the expansion and upgrading of existing boat facilities as an alternative to constructing new boat facilities by considering the removal of the 1:100 powerboat shoreline density ratio on a case-by-case basis from the following Marina Siting Zones: Zone 3, Zone 5, the portion of Zone 6 lying within the City of Vero

Beach, and Zone 7. As a minimum a 1:100 powerboat-shoreline density ratio may be applied, if warranted, using the criteria in Section 1.2.

OBJECTIVE 4 Beaches and Dunes

By 1998, all natural functions of the beach and dune system in Indian River County shall be protected and no unmitigated human-related disturbance of the primary dune system shall occur.

Policy 4.1: The county shall continue to recognize the 1981 Florida Department of Natural Resources (FDNR) Coastal Construction Control Line (CCCL), as established by Chapter 161.053, F.S., and recorded on June 10, 1981 in Plat Book 10, Pages 93-93H, as being the county's line of regulatory prohibition, or Dune Stabilization Setback Line (DSSL). Construction encroachment, except for the following, shall be prohibited oceanward of the DSSL:

- federal, state and locally permitted erosion control stabilization and beach renourishment projects;
- the construction of dune cross-over structures and other minor structures;
- public navigational projects, markers or other control structures;
- maintenance and/or restoration of legal nonconforming structures not requiring greater than 50 percent construction, per Federal Emergency Management Agency (FEMA) regulations;
- use of emergency equipment and/or activities, such as removal of ordnance and debris, to protect life and/or loss of upland property;
- structural and non-structural stabilization techniques to protect coastal buildings from a 15 year or less storm event.

Policy 4.2: To ensure appropriate protection of the beach and dune system, the county shall review all proposed beach and dune projects in the unincorporated area of the county and within the City Limits of Vero Beach, and shall review and submit comments regarding permit applications of all appropriate federal, state and local agencies governing beach and dune management.

Policy 4.3: The county shall solicit cost-share funding for beach renourishment and shoreline stabilization from the U.S. Army Corps of Engineers and the Florida Department of Environmental Protection.

Policy 4.4: The county shall require dune cross-over structures for all new public and private development desiring beach access. The county shall not approve plans which do not include FDEP approved dune cross-over structures at beach access points.

Policy 4.5: By 2000, Indian River County shall devise a dune cross-over construction and maintenance plan to be implemented through the Parks and Recreation Division of the county. Criteria shall include:

- elevated structures at all designated public access points designed to minimize environmental impacts and withstand adverse climatic conditions;
- public structures a minimum of six (6) feet wide which utilize approach ramp facilities for the handicapped; and
- the planting of native plant species in conjunction with the construction of new dune cross-over structures to discourage encroachment onto the neighboring sensitive dune area.

Policy 4.6: Indian River County shall protect and preserve natural beach and dune systems by adopting the specific criteria for shoreline stabilization within the unincorporated portion of Indian River County and within the municipal limits of the City of Vero Beach, as outlined in Policy 10.5 of the Conservation Element.

Policy 4.7: The county shall continue to prohibit motorized vehicles on the beach/dune area, except for vehicles engaged in emergency activities, permitted government vehicles and permitted vehicles associated with approved construction, restoration and/or scientific projects.

Policy 4.8: The county shall enforce its beach and dune protection land development regulations by requiring mitigation or restoration of dune disturbances, and imposing fines as warranted in association with code violations.

Policy 4.9: County staff will attend meetings held by the Sebastian Inlet Tax District, and will participate in evaluating technical studies prepared by the District.

Policy 4.10: By 1999, the county will complete the three (3) year monitoring report for the experimental Pre-fabricated Erosion Protection (“PEP”) reef to determine its overall effectiveness of reducing shoreline erosion within the City of Vero Beach, and to determine the need for supplemental beach renourishment.

Policy 4.11: By 1999, the county shall study alternatives to funding shoreline stabilization activities, including establishment of a Beach Taxing District to fund shoreline stabilization for the areas of critical erosion identified in the 1998 update of the Cubit Beach Preservation Plan.

OBJECTIVE 5 Limiting Public Expenditures in the Coastal High-Hazard Area

Through 2004, there will be no expansion of infrastructure within the Coastal High Hazard Area (CHHA) other than that which is deemed necessary to maintain existing levels-of-service.

Policy 5.1: In accordance with rule 9J-5.003(17), F.A.C., the county hereby designates the "Coastal High-Hazard Area" (CHHA) as identified in the Treasure Coastal Regional Planning Council Hurricane Evacuation Study (1994). Figure 9.22 of this element is hereby adopted as the county’s CHHA designation map.

Policy 5.2: The county shall not subsidize public facilities within the CHHA, other than those which are deemed necessary to maintain existing level-of-service standards, and those which are directly related to public access and/or resource management. Furthermore, the county shall adopt Objective 2 and its associated policies of the Capital Improvements Element.

Policy 5.3: Following a storm event, the Public Works Department shall assess all county facilities damaged from storm activity in the CHHA, and shall make recommendations to reduce future expenditures and potential damage risks. In addition, the Public Works Department shall conduct a cost/benefit analysis to evaluate the relocation of storm damaged infrastructure or infrastructure which is repeatedly threatened by potential storm damage.

Policy 5.4: The county shall maintain, at a minimum, a Federal Emergency Management Agency (FEMA) Community Rating System (CRS) classification of “7” by continuing to enforce LDR Chapter 930 - Stormwater Management and Flood Protection, and by

evaluating structures for compliance with the FEMA's 50% Rule, as described in Policies 7.4 and 7.5 of this Element.

OBJECTIVE 6 Reduction of Hurricane Evacuation Times of Reduce Public Risk

Through 2020, Indian River County will maintain an estimated evacuation time of 12 hours or less for a Category III hurricane.

Policy 6.1: The county hereby designates the "Hurricane Vulnerability Zone" (HVZ) as the area described in the Treasure Coast Regional Planning Council's Hurricane Evacuation Study (1988 update) as the area of the county subject to being inundated by a Category III or greater hurricane. (Ref. Figure 9.23)

Policy 6.2: Consistent with Chapter 252, F.S., by 1998, the county will conduct a survey of existing schools, municipally-owned, and county-owned buildings to identify those building that are appropriately designed and located to serve as hurricane evacuation shelters. Once this survey is completed, the county will solicit state funding from the Florida Division of Emergency Management to decrease the deficit of "safe" shelter capacity by retrofitting existing primary shelter facilities.

Policy 6.3: By August 1999, The utilities department and public works department shall assist the Department of Emergency Services in assessing the vulnerability of public infrastructure within the CHHA. The Community Development Department shall assist the Department of Emergency Services in assessing the vulnerability of private residences and businesses within the CHHA, and by ensuring that all new developments incorporate hazard mitigation techniques, such as dedicating emergency accesses, as required by the Department of Emergency Services.

Policy 6.4: Indian River County shall continue to coordinate with the Treasure Coast Regional Planning Council (TCRPC), Brevard County and St. Lucie County concerning evacuation routes and populations involved to assess the impact of regional growth on local evacuation times.

Policy 6.5: To maintain current evacuation times, the county shall adopt Objective 11 of the Coastal Management Element and Objective 17 of the Future Land Use Element and their associated policies relating to no increase in the density of land use within the Coastal High Hazard Area (CHHA).

Policy 6.6: The county shall coordinate with the Florida East Coast Railroad (FECRR) and other concerned agencies to ensure that train movements will be stopped during hurricane evacuations.

Policy 6.7: The county shall prohibit the location of new adult congregate living facilities, nursing homes, and other similar medical facilities that serve the county's special needs population within the CHHA.

OBJECTIVE 7 Post-Disaster Recovery and Redevelopment

Consistent with the requirements of Chapter 163, F.S. and DCA Rule 9J-5, F.A.C., the county shall have a Local Mitigation Strategy (LMS), as an annex to the Indian River County Comprehensive Emergency Management Plan (CEMP). The LMS shall list and prioritize disaster mitigation projects.

Policy 7.1: Consistent with the CEMP, the county will perform an initial damage assessment, immediately following a natural disaster event, in order to determine the extent of damage and prioritize allocation of recovery resources. If the scope of damage exceeds the county's ability to recover, the county shall declare a local state of emergency, pursuant to Chapter 252, F.S. and County Ordinance# 91-18. Once a local state of emergency has been declared, the county will request assistance from the Florida Division of Emergency Management (FDEM).

Policy 7.2: The County shall continue to maintain its LMS, and to implement the short-term and long-term recommendations contained in the LMS.

Policy 7.3: Following a natural disaster, principal structures and uses located eastward of the County Dune Stabilization Setback Line (DSSL) which sustain greater than 50 percent of MAI (Member of Appraisal Institute) assessed current market value damage from a naturally occurring storm shall be required to relocate upland of their location and, when possible, westward of the DSSL. Prior to reconstruction, principal structures east of the 1987 State Coastal Construction Control Line (CCCL) exhibiting damage from a naturally occurring storm event, greater than 50 percent of MAI assessed market value, shall be required to obtain all applicable permits and comply with all applicable building codes concerning coastal construction.

Policy 7.4: Consistent with National Flood Insurance Program (NFIP) requirements, any structure predating 1989 FEMA Flood Insurance Rate Maps (FIRMs) and located within a flood hazard area that sustains "substantial damage" due to a natural disaster (i.e. repair costs that exceed 50% or more of the building's value) shall be required to be elevated a minimum of six (6) inches above the base flood elevation (BFE), as depicted on current FIRMs.

Policy 7.5: Consistent with NFIP requirements, any proposed "substantial improvement" (i.e. additions, renovations, or modifications that exceed 50% or more of the building's value) to a pre-FIRM structure located within a within a flood hazard area shall be

required to be elevated a minimum of six (6) inches above the BFE, as depicted on current FIRMs. The list contained in Annex IV of the CEMP will be used to determine the total value of “substantial improvement.”

Policy 7.6: The county shall continue to regulate development and manage natural resources within the Coastal Zone by:

- Continuing to enforce LDR Chapter 932 - Coastal Management, and LDR Chapter 402 - Coastal Construction Code;
- Preserving flood storage capacity in the 100 year floodplain, in accordance with the policies listed under Objective 5 of the Stormwater Management Sub-Element;
- Maintaining or reducing land use density allowances in the Coastal High Hazard Area (CHHA) in accordance with the policies under Objective 17 of the Future Land Use Element and Objective 11 of this element;
- Minimizing beach and dune disturbance in accordance with Coastal Management Element Policy 4.8 and County Code Chapter 932; and
- Reviewing, in coordination with the FDEP Bureau of Beaches and Coastal Systems, all emergency seawall permit applications within the unincorporated area of Indian River County and within the City Limits of Vero Beach.

OBJECTIVE 8 Public Access

By 2010, the number of public access points to natural resources within the coastal zone of Indian River County, including beaches, the St. Sebastian River, and the shoreline of the Indian River Lagoon, will be increased by a minimum of five public access points.

Policy 8.1: Indian River County will participate in the Indian River Lagoon “Blueways” Conservation and Recreation Lands (CARL) project to acquire the remaining undeveloped estuarine wetlands bordering the IRL by providing local funding assistance, and by providing “in-kind” services, such as identifying environmentally-sensitive parcels.

Policy 8.2: Indian River County shall accept donations of shoreline lands suitable to increase public coastal access, provided this acceptance is in the best interest of the county.

Policy 8.3: By 1998, the County will explore the feasibility of improving boat access to the Indian River Lagoon from the mainland in the southern section of the County.

Policy 8.4: The county shall prohibit the net loss of public access and facilities by:

- requiring any displaced or removed public access to be replaced at a minimum of a one-to-one (1:1) ratio;
- requiring private property owners to provide public access to beaches which are renourished or enhanced with public funds. This requirement may include provisions for the establishment, relocation or enhancement of public accesses provided that such established, relocated or enhanced accesses will not adversely impact existing residential neighborhoods or adversely impact existing natural resources; and
- providing public vehicular parking at more than 50 percent of all new public beach accesses.

Policy 8.5: The county shall complete improvements to the ocean side of Round Island Park by 1999.

Policy 8.6: The county will complete a management plan for the Cairns tract by 1999. Public access and passive recreation will be addressed in the management plan.

Policy 8.7: The county, in cooperation with the USFWS, will provide public access to the Pelican Island National Wildlife Refuge by 2000.

Policy 8.8: The county will increase passive recreational opportunities on lands acquired through the county's Environmental Lands Program as set forth in Objective 12 of the Conservation Element and the objectives and policies contained in the Recreation and Open Space Element.

OBJECTIVE 9 Historic Resources

Through 2020, there will be no significant impact to roads, sites or structures deemed historically or archaeologically significant in Indian River County.

Policy 9.1: Consistent with Policy 8.2 of the Future Land Use Element, the county shall continue to use incentives such as transfer of development rights, tax relief, mitigation, and public acquisition to protect and preserve historic and archaeological resources in the Coastal Zone.

Policy 9.2: The county shall pursue state and federal funding to acquire and/or to preserve cultural and historic sites recognized as important and/or significant.

Policy 9.3: The county shall provide developers with incentives, such as transfer of development rights, tax incentives and others, in return for preserving historic resources.

Policy 9.4: Developments which include historical resource sites shall be required to submit archaeological surveys prior to commencing construction activities. Developers shall be required to preserve these resources while maintaining a reasonable use of the land.

Policy 9.5: The county shall recognize and properly manage its historical resources by implementing Objective 8 of the Future Land Use Element.

Policy 9.6: By 2005, the county will develop management plans for the following scenic/historic roads: Fellsmere Grade, Quay Dock Road, Old Winter Beach Road, and Gifford Dock Road. (Ref. Policies 7.2 and 7.3 Recreation and Open Space Element).

OBJECTIVE 10 Infrastructure in the Coastal Zone

Through 2020, the level of service (LOS) for traffic circulation, recreational facilities, stormwater management, and potable water and sewer service in the coastal zone of Indian River County will be consistent with the LOS standards set forth in the concurrency section of the Capital Improvements Element.

Policy 10.1: By 2003, the county shall decommission all remaining wastewater treatment package plants in the Hurricane Vulnerability Zone.

Policy 10.2: Consistent with DCA Rule 9J-5.012(3)(c)(8), the county shall identify and assess all infrastructure located within the CHHA to determine its vulnerability. This vulnerability assessment will be based on data from FIRMs, The Arbiter of Storms (TAOS) computer model, and the Sea, Lake, and Overland Surges from Hurricanes (SLOSH) map. Any decision to abandon or relocate infrastructure outside the CHHA following a natural disaster will be based on a benefit-cost analysis of vulnerable infrastructure. This benefit-cost analysis will be included in the Local Mitigation Strategy, once completed.

Policy 10.3: The county shall coordinate with all state and federal agencies in the funding and implementation of beach stabilization projects.

Policy 10.4: Indian River County shall permit the utilization of local funds for shoreline stabilization and beach renourishment projects. Priority shall be given to those projects

which demonstrate the best benefit-cost ratio while having the least impact to the offshore reef, and the nearshore beach and dune ecological communities

Policy 10.5: The county shall not allow new underground storage tanks or septic facilities to be located oceanward of the county's Dune Stabilization Setback Line (DSSL).

Policy 10.6: The county shall maintain the standards, phasing and funding of infrastructure in the coastal zone, as set forth in the Transportation Element, and the Natural Groundwater Aquifer Recharge, Sanitary Sewer, Potable Water and Stormwater Management Sub-Elements of the Indian River County Comprehensive Plan.

OBJECTIVE 11 Limit Densities in the Coastal High Hazard Area (CHHA)

Through 2020, there will be no increase in the density of land use within the Coastal High Hazard Area.

Policy 11.1: Lands acquired by the county under its Environmental Lands Program shall include property located within the Hurricane Vulnerability Zone (HVZ). This land shall be used for either natural resource conservation, passive recreation or both.

Policy 11.2: Within the CHHA, the county will not make infrastructure improvements to accommodate development more intense than allowed by the comprehensive plan.

Policy 11.3: The county shall utilize all applicable state and federal regulations, and the appropriate objectives and policies of the Indian River County Comprehensive Plan, to limit public and private development in the CHHA.

OBJECTIVE 12 Boating Safety and Law Enforcement

Through 2010, the annual accident rate in Indian River County will be at or below the 1995 baseline rate of 131 accidents per 100,000 registered boaters. Furthermore, there will be no incidence of watercraft-related human fatalities.

Policy 12.1: By the end of 2005, the county shall request that the FWC adopt the following speed zone amendments for Indian River County:

Gifford Cut: Extend the "unregulated" speed zone north toward Channel Marker 127;

Wabasso Causeway: Establish a year-round slow speed zone within 300 feet of the western shoreline of Wabasso Island, continuing 300 feet north and south of Wabasso Causeway (C.R. 510); and

Create a 400-foot “Idle Speed” zone, within the ICW, centered under each bridge over the Indian River Lagoon; and

Eliminate the “Slow Speed” zone in the ICW north of the Barber Bridge (SR 60).

Policy 12.2: By the end of 2005, the County, in cooperation with the FWC, local law enforcement agencies, and local boaters’ interest organizations, will establish a Citizen’s Marine Patrol.

OBJECTIVE 13 Education/Public Awareness

By 2005, informational kiosks displaying manatee protection practices, safe boating practices, and the designated speed zones of the inland waters of the county will be installed at all public boat ramps in Indian River County.

Policy 13.1: By 2005, the County shall obtain funding from the FIND and the FWC to construct informational kiosks at boat ramps and other strategic locations, such as fishing piers.

Policy 13.2: The County, in cooperation with the FWC, USFWS, FIND, and the ELC, will distribute manatee awareness and boating safety materials to local boaters at the time of yearly boat registration and other appropriate locations such as marinas, bait and tackle shops, and public parks.

Policy 13.3: By 2005, the County shall initiate a monofilament line recycling program by placing marked collection receptacles at boat ramps, marinas, bridges, and strategic locations.

Policy 13.4: All existing and new boat facilities (public and private) shall be required to post manatee awareness signs.

Policy 13.5: By 2005, all rental vessels, including personal watercraft, in Indian River County shall be required to display stickers or plasticized cards with boating safety and manatee protection information.

OBJECTIVE 14 Manatee Protection Measures

Through 2005, the annual number of manatee mortalities in Indian River County shall be no more than five (5) excluding unusual events such as red tide or disease outbreaks. Of these annual mortalities, no more than one (1) mortality shall be watercraft-related.

Policy 14.1: The county, in cooperation with the City of Vero Beach Utilities

Department and the FWC Bureau of Protected Species Management will ensure that disruptions to outflow, and/or inadequate temperatures to sustain manatees during winter are minimized, and that all necessary precautions to minimize hazards at the power plant are initiated.

Policy 14.2: By 2005, the county shall obtain funding to retrofit stormwater outfalls in tidal waters to reduce the risk of entrapment and drowning of manatees. Any submerged or partially submerged pipes or culverts accessible to manatees during any tidal phase, larger than 8 inches in diameter but less than eight (8) feet in diameter, shall be grated with bars no more than eight (8) inches apart installed across the mouth of the outfall.