



## **Future of Hillsborough**

# **Comprehensive Plan for Unincorporated Hillsborough County Florida**

## **COASTAL MANAGEMENT**

**As Amended by the Hillsborough County Board of County Commissioners June 5, 2008 (Ordinance 08-13)**

**Department of Community Affairs Notice of Intent to Find Comprehensive Plan Amendments in Compliance published August 4, 2008 {DCA PA No. 08-1ER-NOI-2901- (A)-(I)}**

August 26, 2008 Effective Date



# Hillsborough County Coastal Management

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# Hillsborough County Coastal Management

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# Hillsborough County Coastal Management

## LIST OF COMPREHENSIVE PLAN AMENDMENTS

<b>Comprehensive Plan Amendment No. and Element Amendment Description</b>	<b>BOCC Ordinance No., Adoption Date, DCA Notice of Intent Publication Date (if applicable), &amp; Effective Date</b>
<b>CPA 09-06 - Text Amendment to the Coastal Management Element and the Transportation Element-</b> Incorporates the Tampa Port Authority Master Plan, adopted by the Tampa Port Authority Board on July 17, 2008.	<b>BOCC Ordinance No. 09-54. Adopted by the BOCC 6/18/09. Notice of Intent Publication Date 8/10/09. Effective Date 8/31/09</b>

## **I. EXECUTIVE SUMMARY**

Historically, local comprehensive coastal planning in Florida has largely been pre-empted by site-specific state and local land development and regulatory decisions. This piece-meal, site-by-site approach to coastal development, in concert with the often vague and generalized coastal protection concepts outlined in state and local planning documents, did not generally provide communities with a comprehensive coastal management strategy. Hillsborough County's approach to coastal management has been similar to that taken throughout the State. In fact, because Hillsborough County is not located on the Gulf of Mexico and lacks the sandy beaches of the Gulf, past development and land use decisions in coastal areas have not taken full advantage of the unique coastal resources. Subsequently, many residents and visitors alike do not consider Hillsborough County a coastal area.

In realization that Florida's coastal areas need long range comprehensive planning and conservation in order to preserve their truly unique character, the 1985 Florida Legislature adopted revisions to Chapter 163 and required each local government identified as a coastal city or county to include a coastal management element in its updated comprehensive plan. The specific language adopted by the 1985 Legislature provides clear policy direction:

..it is the intent of the Legislature that local government comprehensive plans restrict development activities where such activities would damage or destroy coastal resources and that such plans protect human life and limit public expenditures in areas that are subject to destruction by natural disaster (s.s. 163.3178-1).

### **A. PURPOSE OF AND NEED FOR THE COASTAL MANAGEMENT ELEMENT**

The Coastal Management Element was prepared pursuant to the mandate of Chapter 163, Florida Statutes, as amended by the Local Government Comprehensive Planning and Land Development Regulation Act of 1985. This Act requires the development of a comprehensive plan by each local government in the State of Florida. Chapter 163 is further defined by Rule 9J-5, Florida Administrative Code, which establishes the minimum criteria for this element and for each element of the comprehensive plan. Specifically, the Coastal Management Element is intended to meet the requirement of Chapter 9J-5.02, Florida Administrative Code.

The purpose of this Coastal Management Element is to provide a plan and policy direction for development activities in the coastal planning area. This plan and policy direction includes restrictions on development activities where such activities would damage or destroy coastal resources, protection of human life, and limitations on public expenditures in areas subject to destruction by natural disaster. The objectives of this element are to ensure that development in the coastal area does not prohibit public accessibility to the coast, that human life is not endangered, that adequate public hurricane shelter space is available to coastal inhabitants, that levels of service on coastal Hillsborough County Coastal Management

evacuation routes do not deteriorate, such that safe and timely evacuation is adversely impacted, that water-dependent and water-related land uses are given priority, that public expenditures do not encourage growth in coastal high hazard areas, and that public decisions will include consideration of coastal hazards in each land use and public infrastructure decision-making process.

## **B. DEFINITION OF COASTAL PLANNING AREA**

The coastal planning area includes the coastal waters and adjacent shorelines that are strongly influenced by one another. The coastal planning area extends inland from the shoreline only to the extent necessary to control shorelands, the uses of which have a direct and significant impact on the coastal waters. The coastal planning area consists of two parts: the coastal high hazard area (CHHA) and the remaining land area with an evacuation designation.

For mapping purposes, the coastal planning area is that area proposed for evacuation on the most current evacuation map.

## **C. ELEMENT ORGANIZATION**

The Coastal Management Element is comprised of three integral parts including the Inventory and Analysis; Goals, Objectives and Policies; and the Plan Implementation sections. The Inventory and Analysis section presents historic and current conditions upon which to base the recommended planning and management strategies. The Goals, Objectives and Policies section presents the recommended planning guidelines, programs and other operative provisions which are intended to drive private and governmental decisions regarding natural resources. Finally, the Plan Implementation section recommends strategies for implementing the goals, objectives and policies of the Coastal Management Element.

## IV. COASTAL MANAGEMENT ELEMENT BACKGROUND REPORT

### A. 9J-5012(2)a Existing Land Use in the Coastal Planning Area

Land uses in Hillsborough County's coastal planning area, as shown on Existing Land Use, illustrates the difficult issues faced by the jurisdiction. There is intense competition between incompatible uses such as residential and industrial, which must be balanced with environmental constraints on a limited shoreline. The 125,167 acres in the coastal planning area includes an array of land uses generalized on Table 1. The primary land use issue within Hillsborough County's coastal planning area is balancing public access demand with the demands of water dependent and water related uses. Historically, the coastal area included a mixture of residential, commercial and industrial land uses. This mixture of land uses has developed over time into a definable—pattern in which development land uses must fit. Also, the remaining natural shoreline system must be preserved or renourished so that future generations can study and understand this system and benefit from the recreational and aesthetic enjoyment this complex system provides.

#### Existing Land Use

Existing land uses within the coastal planning area are illustrated on the Existing Land Use) in eight categories. These land uses include: residential, commercial, industrial, public facilities, natural, agricultural, vacant and mining.

**Residential:** An analysis of the existing land uses indicates that the residential land use (single and multi family) is 20% or 25,502 acres of the total existing land uses within the county's coastal planning area. Primary concentrations of residential uses occurs in the Town and County, generally described as the land mass south of Gunn Highway, south to Tampa Bay, Palm River/Clair Mel located south of the Palm River and west of I-275, Riverview/Gibsonton located along the Alafia River, and the Ruskin Wimauma area in the very southern portion of the county.

Many of the areas are often either on low, floodprone uplands, or on land made as the result of dredge and fill operations. Concentrations of this type of development are especially prevalent in the areas of Town and County, Clair Mel City, Apollo Beach, and Bahia Beach. Problems that are common to these areas are periodic flooding, cumulative adverse impacts to wetlands, soil erosion, non-functioning septic systems, and reduced public access to the shoreline.

Although additional development is anticipated, areawide planning process requirements will mitigate the impacts to public facilities and concentrate growth in defined limits.

**Commercial:** Commercial development in the unincorporated County's coastal planning area is not extensive, encompassing only 6,539 acres or 5% of the Hillsborough County Coastal Management

total coastal planning area. Most commercial uses are neighborhood in scale, and do not serve as an attraction for future development in the coastal zone. The Hillsborough Avenue/Memorial Highway area is experiencing extensive commercial development activity, primarily because of the continued residential development in Town n' Country and the area's proximity to Pinellas County. Commerce has not served as an attraction to development; rather, it has followed the demand created in that area by residential development.

**Community Facilities:** Approximately 30% or 37208 acres of the land uses within the coastal planning area are devoted to public/semi-public uses within the broad category of community facilities. General uses include facilities such as electrical power generating and transmission facilities, wastewater treatment and disposal facilities, governmental complexes, schools, churches, recreation and open space lands, streets and rights-of-way. In terms of acreage, the largest single land user within this category are electrical generating and transmission facilities followed by recreation and open space lands both of which are primarily water dependent land uses. Recreational and open space uses include both passive pursuit of nature and active forms of recreation, such as fishing and boating. Natural parks, such as Upper Tampa Bay Park on S.R. 580, feature primarily the former type of activity. Boating and fishing are pursued wherever the Bay meets the land. For a list of public parks refer to the Recreation and Open Space Element. Refer to the Public Access section of this element for detailed information on public boat ramps and a listing of public access points.

**TABLE 1 EXISTING LAND USE FOR HILLSBOROUGH COUNTY COASTAL PLANNING AREA - 2005**

<b>Generalized Land Use Classification</b>	<b>Acres</b>	<b>%</b>
RESIDENTIAL Single Family Detached Duplex/Multi-Family/Mobile Home	31,827	25
COMMERCIAL	3,932	3
COMMUNITY FACILITIES Educational Public Utilities Public Right of Way	49,449	38
INDUSTRIAL	6,353	5
RECREATION/NATURAL	2,896	2
AGRICULTURAL	15,095	12
MINING	1,034	.8

VACANT	13,108	10
WATER	5,133	4
Unknown	787	.6
<b>TOTAL</b>	<b>129,614</b>	<b>100%</b>

Source: Hillsborough County City-County Planning Commission, 2005.

**Agricultural:** Agricultural and vacant lands occupy a significant portion of the County's coastal planning area, but urban growth is steadily displacing these land uses forcing agricultural activities to move to more inland parts of the County. As noted in Table 1, agricultural lands account for 12% of the predominant agricultural uses in terms of total acreage are general agriculture, row crops and fenced pasture land.

**Industrial:** Much of the County's heavy industrial development is located in the coastal planning area, primarily due to the maritime history of the Hillsborough County, and its subsequent development in port-related activities. This heavy industry accounts for approximately 6353 acres or 5% of all industrial activity within the coastal planning area. The balance of the industrial uses take the form of light industrial and warehouse and distribution uses and are generally located inland from the waters of Tampa Bay. The Port of Tampa's historic evolution is detailed within the City of Tampa's Coastal Management Element; however, the Port's activities have spread from the inaugural Port Tampa area, on the southwest shore of the Interbay peninsula in Tampa, along the east shore of Hillsborough Bay. Heavy industrial land use designations on the land use map trace the Port's development.

**Natural Areas:** Natural areas are more particularly defined as water, woodlands and wetlands which possess significant environmentally sensitive habitat. As noted on the existing land use table, these natural or environmentally sensitive areas account for approximately 2896 acres or 2% of the coastal planning area within unincorporated Hillsborough County. These natural areas provide vital shoreline habitat and protect already developed areas from storm surge. It is anticipated that future development in natural areas will generally occur on the vacant parcels in urban areas as opposed to the displacement of woodlands and wetlands which is consistent with the County's continuing policy to achieve infilling of development. The development of the existing shoreline, where most of the recreational lands occur within the coastal zone, must be of sensitive design. The impacts of recreation use must be controlled to preserve the integrity and future viability of the natural systems.

The Future Land Use element identifies these areas to be of significant environmental importance to be set aside for primarily conservation purposes. Except for very limited compatible residential or educational use, all development is prohibited.

A detailed discussion of these natural areas is provided in a subsequent section of this element as well as within the Conservation and Aquifer Recharge Element.

**Mining:** Of all the primary land uses within the coastal planning area, mining represents the least in real coverage. In 2005, active mines, reclaimed mines and mined out areas not reclaimed accounted for 1034 acres or .8% of the total acreage within the coastal zone. However, mining becomes a significant competing land use issue due to the short and long term impacts upon both the physical and visual environment. Both active and mined out areas of shell and dolomite pits exist within the coastal zone in South County. Most recent mining has occurred at the Leisey Shell pit. The mined out pits have been used by amateur archaeologists as dig sites and have yielded several archaeological discoveries. This resource is evaluated further in the Impacts on Historic and Archaeological Resources section of this element.

### **Shoreline Conflicts**

When evaluating shoreline land uses it is important to identify existing conflicts between competing shoreline uses and related coastal features. Recognizing that there is limited space and carrying capacity within the coastal planning area to accommodate future development, a mechanism must be available to resolve these apparent conflicts and direct future development into areas most suitable to accommodate such development. As a result, Florida's comprehensive planning legislation specifically addresses the need for local governments to identify such conflicts within the local comprehensive plan and provide for conflict resolution.

"Shoreline conflict" shall refer to any land use activity that causes a reduced or diminished quality of life for residents and property owners within or immediately adjacent to the established coastal area.

Shoreline conflicts could include land uses or actions that:

1. measurably degrade the natural or man-made environment;
2. contribute to the use of land or water resources in an inappropriate manner;
3. result in the reduction of economic growth and vitality;
4. adversely affect the roadway network within the coastal area inhibiting the expeditious and safe evacuation of the coastal area;
5. significantly disrupt long term desired land use patterns; or

6. require the expenditure of public funds for extension of public services and maintenance within the coastal area.

One of the primary conflicts between the natural processes inherent to the shoreline and man's desire to develop along the shoreline is the problem of beach and shore erosion. While the conflict is experienced to a lesser degree in Hillsborough County because the County's coastal area is not directly exposed to the wind and wave action of the Gulf of Mexico, certain areas have experienced erosion (e.g. E. G. Simmons Park). Hillsborough County's Future Land Use Element recognizes that much of the County's shoreline remains in a naturally vegetated state and acknowledges the presence of many existing shoreline uses which are either water-related or water-dependent. Similarly, most areas designated as vacant, public, natural or agricultural on the existing land use map are reflected as either Natural Preservation, Residential, or Public Quasi Public on the Future Land Use Map, thereby minimizing future conflicts.

Low elevation and the absence of topographic relief characterize much of the County's coastal planning area, also resulting in conflicts in achieving drainage and requisite building heights relative to established FEMA flood elevations. Examples of this conflict are most pronounced in the areas of Bahia Beach, Apollo Beach and lands abutting Old Tampa Bay north of the Courtney Campbell Causeway.

Many of the County's coastal ecosystems have been disturbed or replaced as a result of massive filling of land or from the impacts of urban land use activities. Perhaps the greatest impact to marine habitat results from urban stormwater run-off which discharges directly into Tampa Bay and into the rivers and tributaries within the coastal area. This issue is dealt with in greater detail elsewhere in this element and in the Conservation and Aquifer Recharge Element.

Because of the desire to utilize the County's shorelines for recreation, commercial, residential and port-related industrial activities, the transportation system necessary to accommodate coastal activities becomes a key component of the coastal area, and can be a source of conflict. The existing transportation system is adequate to accommodate traffic generated within the coastal area. Of critical importance is the need to maintain adequate levels of service on designated hurricane evacuation routes and to balance the need for future residential development with the ability of the roadway system to operate without serious conflicts with abutting land uses.

Finally, economic factors must be considered as they pertain to the ability of certain land uses to generate income consistent with development costs and underlying land values. The coastal area, especially those areas which are commercial or tourist related (e. g. Apollo Beach, Bahia Beach, public parks, marinas, etc.) must not deteriorate to the extent that a conflict arises with respect to abutting or nearby properties, thereby adversely affecting the economic vitality of the coastal area. As suitable sites for commercial/tourist uses continue to diminish, the need to ensure the economic vitality of existing

uses becomes more critical. Therefore, economic conflicts between existing land uses must also be viewed from a perspective of improving and redeveloping existing coastal uses, where appropriate.

### **Water-Dependent and Water-Related Uses**

**Shoreline Access:** As previously mentioned, shoreline access problems result from demand by incompatible or competing land uses for coastal locations. The coastal planning area is limited and has historically been the first area to be developed. As demand for land grows, shoreline property is the first to appreciate in value due both to its unique characteristics and to its relative scarcity. For this reason, and to minimize conflicts, coastal planning area land uses must be prioritized with regard to the necessity of shore access. Those activities that require deepwater access, such as port facilities, or large amounts of salt water (electrical generating facilities or aquaculture projects) should be assured that the coastal land they need will not be usurped by a land use that could be accommodated at an inland location.

Chapter 9J-5, Florida Administrative Code, requires that coastal counties identify and evaluate "water-dependent" and "water-related" uses within the comprehensive plan. These uses are specifically defined as follows:

Water-Dependent Uses - activities which can be carried out only on, in or adjacent to water areas because the use requires access to the water body for: waterborne transportation including ports or marinas; recreation; electrical generating facilities; or water supply.

Water-Related Uses - activities which are not directly dependent upon access to a water body but which provide goods and services that are directly associated with water-dependent or waterway uses.

Water-Independent Uses - activities including, but not limited to, intense urban residential, industrial and commercial uses which could function just as well inland as in a coastal location.

The primary water-dependent and water-related uses, excluding the existing public access facilities depicted on the Existing Water Dependent/ Water Related Uses Map as Light Industrial, Heavy Industrial and Heavy Commercial. It is interesting to note that for an urban county in a tourist-oriented region, very little acreage is utilized for commercial tourist uses. The majority of land use activity within the coastal area is neither water-dependent nor water-related, and could function just as well inland. However, like most counties in Florida, it is the amenities of and proximity to the coastline and rivers that have traditionally encouraged development within the coastal area, and with the continued growth projected for the County these lands will see increased development pressures.

A partial inventory of major public access facilities has been prepared, and depicted on the Shoreline Public Access Facilities Map.

## **Economic Base of Coastal Area**

In the coastal planning area of Hillsborough County, the major sectors of the economic base include services, retail trade and wholesale trade. Within the service sector, the most significant components or subsectors are business services and medical and health services. The retail trade sector is dominated by automotive dealers, service stations and furniture and home furnishings, while the wholesale trade is dominated by durable goods, such as material equipment and supplies, and lumber and construction material. The second tier of economic sectors, in terms of contribution to the economic base of the coastal planning area, includes finance/insurance/real estate, manufacturing and construction. The balance of the economic base of the coastal zone is comprised of smaller, less significant sectors including transportation/communication/utilities, agriculture and fishing, mining and government services.

**Electric and Wastewater Services:** Electric and wastewater services represent adjunct components of the economic base of the coastal zone area.

The Big Bend Station electric power plant is located roughly ten miles south of the City of Tampa in unincorporated Hillsborough County. The plant is situated along the eastern shore of Tampa Bay in the coastal area of the County. The siting of the power station along the Tampa Bay shoreline is advantageous from a cost perspective. The Bay serves as a source of cooling water needed to operate the plant. In theory, the reduced cost alternative afforded by the Tampa Bay siting of the Big Bend Station translates into reduced costs of electric power services supplied to local residents and businesses in Hillsborough County.

Tampa Bay is currently used as a receiving body for treated wastewater and effluent discharge. This method of wastewater and effluent disposal is cost effective from an economic perspective. For example, in northwest Hillsborough County, the Hillsborough Northwest 201 Facilities Plan for wastewater treatment calls for disposal of wastewater and effluent by land application from the River Oaks wastewater treatment facility. This method of treatment was estimated to cost \$38.8 million. However, to date, the County has opted to expand the existing wastewater treatment system serving the area which would allow for the continued discharge of treated wastewater and effluent into the estuarine system of Tampa Bay up to a capacity of ten million gallons per day (10 mgd). The estimated cost of this expansion plan, including interim irrigation relocation, pump station, force main construction and flow equalization, is \$24.9 million. This cost represents a savings of approximately \$14 million from the land application disposal method referenced in the 201 Facilities Plan for the area. More recently, this effluent discharge has been greatly reduced by the expansion of the County's Reclaimed Water Program.

**Impacts of the Future Land Use Plan on the Economic Base:** The impact of implementation of the future land use plan for Hillsborough County should

affect most, if not all, components of the coastal planning area's economic base.

The implementation of the future land use plan may limit the growth of industrial, business, professional and personal services, as well as wholesale and retail trade, in the County's coastal zone. Potential negative impacts on the economic base of the County's coastal zone could be felt in the loss of land uses such as motor freight transportation; warehousing and light manufacturing, including light machinery, communication, and electronic equipment; and other miscellaneous research and development (R&D) and high-tech industrial sectors. The primary contributor to the potential loss in these sectors is the large amount of development potential for these types of industries and services within the I-75 Corridor.

Most of the growth among favorably impacted components of the economic base should occur in the southern and eastern sub-areas of Hillsborough County's coastal zone, including the area between I-75 on the east and Tampa Bay on the west. The area within the northwest section of the County, generally described as the lands south of the proposed Linebaugh Extension and Old Tampa Bay to the County line, is showing a trend from agricultural lands to low to medium density residential and support commercial development.

The growing desire for people to live and recreate along the coast will increase the demand for coastal access. Sensitive design and engineering of restricted recreational development along the abundant natural shoreline and tidally-influenced tributaries of Hillsborough County will enable the growing population to access these areas. Through understanding of and education about the value of these systems, the general population's environmental awareness may lead to a higher quality of life for existing and future residents of Hillsborough County.

## 9J-5.012(2)(b)

**Wetland Habitat:** Three major types of vegetative wetland communities occur within the Tampa Bay estuarine system, including seagrass beds, salt marshes, and mangrove forests. The critical roles that estuarine wetlands play with regard to shoreline stabilization, pollutant assimilation and fisheries production has been discussed above and cannot be underestimated. (See Natural Resources Map).

Seagrasses: Between 1996 and 1999 (years that included a strong El Niño rainfall event), seagrass coverage decreased by 839 Hectares(ha), followed by recovery and expansion of 883 ha between 1999 and 2004. Bay-wide, seagrass coverage in Tampa Bay in 2004 was the highest observed since 1950, but still 5,512 ha lower than 1950 coverage.

The catastrophic loss of seagrasses in Tampa Bay has been attributed to numerous causes, including propeller damage from boats, dredging, and water quality degradation. While the first two causes have undoubtedly resulted in significant direct destruction, the third is probably the most important factor affecting the health of seagrasses in Tampa Bay. Recent studies indicate that increasing nutrient enrichment, or eutrophication, of estuarine waters from sewage treatment plant effluent and stormwater runoff is responsible for the production of phytoplankton blooms in the water column and excessive epiphytic growth of macroalgae on the leaves of seagrasses. These nuisance species decrease the amount of light available to seagrasses for growth and reproduction (Lewis et al., 1985). In addition to eutrophication, widespread temporary increases in water column turbidity due to large scale harbor and channel deepening projects have also reduced the light available to seagrasses, thus resulting in significant seagrass destruction.

**Emergent Wetlands:** There are approximately 17,800 acres of emergent wetlands bordering Tampa Bay. Small fish, shrimp, and crab feed on the nutrient rich detritus formed from decaying mangrove leaves. The sturdy roots of the mangrove tree anchor the shoreline, while the mangrove canopies serve as roosts and nests for a variety of wintering and native birds.

In Hillsborough County alone, approximately 3,000 acres of salt marsh and 1,500 acres of mangrove forest were destroyed between 1820 and 1978. Furthermore, it has been estimated that as much as 44% of the original emergent wetlands in Tampa Bay have been lost to development and other causes (Lewis et al., 1979). Unlike seagrasses, anthropogenic impacts on salt marshes and mangrove forests are almost exclusively attributable to the direct effects of dredging and filling, where suitable intertidal substrate has simply been eliminated. With the exception of the effects of oil spills, the survival and proliferation of emergent tidal wetlands are not particularly dependent upon water quality. Recent estimates of wetland habitat in Tampa Bay indicate that about 18,000 acres of mangrove forests and saltmarsh remain.(Janicki et al., 1995). Thousands of acres of this habitat may be damaged from invasion by exotic plants, such as the Australian Pine and Brazillian Pepper, that choke out native habitat.

**Riverine Forests and Adjacent Wetlands:**

The acreage of freshwater wetlands of Hillsborough County has declined significantly since historical times. Losses would be expected to reduce the ability of these systems to filter upland runoff, allowing more turbid water to reach the Bay. Particulate organic matter inputs to the Bay from litter fall in adjacent wetland and terrestrial habitats would also be expected to decline, and nutrient inputs would probably increase as filtration capacity declined. In addition, many of these streams have been channelized, and even if the wetlands are structurally intact, hydraulic exchange with the adjacent water body, and thus wetland functions, may be impaired.

**Living Marine Resources:** Tampa Bay was once the State's most productive and diverse estuarine system. Inventories performed in the late 1960's have shown that the recorded diversity and abundance of marine life in Tampa Bay is not exceeded by any other estuary between the Chesapeake Bay and the Laguna Madre of Texas.

The richness of Tampa Bay's marine life has been attributed to the geographic position of the estuary between temperate and subtropical waters. As a result of the Bay's location, winter water temperatures rarely fall to levels which could kill tropical organisms, and summer water temperatures are moderate enough to be tolerated by many of the temperate species. Another contributing factor to the diversity and abundance of Tampa Bay marine life is that salinity is typically in the range of 25-35 ppt over most of the estuary, without the wide fluctuations and significant vertical stratification that characterize many other estuaries. As a result of the stability of the salinity regime, many oceanic species can coexist with typical estuarine species.

The productivity of Tampa Bay in terms of commercially valuable fisheries has, however, declined dramatically in recent decades due to man's influence on the Bay. The harvest of these species is a particularly visible and important part of the value of the Bay as perceived by most citizens.

Shellfish: Five economically important shellfish species occur in Tampa Bay including, in order of commercial value, the following: bait shrimp, stone crab, blue crab oysters and quahog clams. The bay scallop once flourished in Tampa Bay but since the early 1950's it has been virtually eliminated from the estuary due to degraded water quality conditions.

Currently, only four areas are approved or conditionally approved for shellfishing in Tampa Bay. Due to poor water quality conditions (e.g. high bacterial counts), these areas are now virtually all restricted to Lower Tampa Bay, where better flushing conditions prevail. The Cockroach Bay Aquatic Preserve area, although conditionally approved, has been closed periodically due to coliform contamination from nearby septic systems and has been recommended for permanent closure.

The oyster industry in Tampa Bay, especially Hillsborough Bay, once thrived, with annual oyster meat yields exceeding 500,000 pounds in 1900. Harvests of

oysters from the Bay were second only to those of the still productive Apalachicola Bay for most of the 19th Century. However, between the turn of the century and 1970, the oyster industry in Tampa Bay was essentially eliminated due to water quality problems. Other shellfish species have been similarly affected by development around the Bay, and only bait shrimp and stone crabs remain as economically viable fisheries in Tampa Bay.

Fishes: The Tampa Bay estuary and contiguous coastal waters serve as home, feeding ground, and/or nursery for more than 270 species of resident and migrant fish. Approximately 80 fish species are found in at least one life stage within the Tampa Bay estuary, with about 25 of these species considered to be economically important. Of special concern are spotted seatrout, red drum and snook which constitute the bulk of the recreational finfish landings in Tampa Bay. Available statistics indicate that these species, all of which spend most of their lives in estuaries, are declining in numbers both locally and statewide. Accordingly, the Florida Department of Environmental Protection has recently placed greater restrictions on the commercial and recreational harvest of these species. As stated above, vegetated tidal wetlands, especially seagrass beds, play a critical role as nursery habitat for larval and juvenile fishes. It is felt that the significant decline in both seagrasses and emergent wetlands has had a corresponding adverse impact on fishery stocks; however, long term quantitative studies on fishery stocks in Tampa Bay are not available to confirm this. Data on commercial finfish landings in Tampa Bay indicate a general downward trend occurring after 1965.

Reptiles: Only two species of marine reptiles are common in Tampa Bay, the diamondback terrapin) and the mangrove water snake ). Both are common in localized areas but have not been well studied. However, because of the reduction of intertidal habitat and adjacent upland areas due to coastal development, these species may be threatened. Loggerhead turtle) are occasionally observed in the Bay on the gulf side of Egmont Key.

Birds: Seabirds and wading birds are a very visible and important component of the animal life of Tampa Bay. 83 species of birds are associated with marine habitats in the Bay. Many of these not only use certain Bay habitats for nesting and raising young, but also wade in the shallows or dive in deeper waters to feed on fish and invertebrates.

The total breeding population of colonial birds in Tampa Bay is estimated to be 75,000 pairs, of which two-thirds are laughing gulls. The laughing gull population is estimated to be one-third of the entire bird breeding population in the southeast United States. The brown pelican population of 2,700-3,000 breeding pairs represents nearly a third of the entire Florida population of such birds.

McKay Bay, located in northeast Tampa Bay, is a particularly important feeding area and typically supports a winter population of almost 25,000 marine birds of at least 75 species. Almost 80% of these birds are of five species: lesser scaup, ruddy duck, dunlin, short-billed dowitcher, and western sandpiper.

Although some species which formerly nested in the Bay have recently returned (reddish egret in 1974, roseate spoonbill in 1975), recent population declines in many species are apparent. Red tides, parasite outbreaks, dredge and fill activities, pesticide use, and oil spills have all had a generally negative effect on bird abundance. Waterfowl surveys of the Bay have indicated a sharp decline in the wintering population of lesser scaup with a high of 105,900 in 1976 falling to a low of 8,400 in 1979. Major dredging in Hillsborough Bay has been implicated as a possible cause of the decline, since over 988 acres of open water habitat was lost during this period due to harbor deepening and spoil island creation.

Marine Mammals: Only two species of marine mammals are normally found within Tampa Bay, the bottlenose dolphin and the West Indian manatee. The bottlenose dolphin is a year-round resident, with a local population estimated at 100-200 individuals, generally found in small herds of 3-6 animals. Little research, beyond aerial surveys of local populations, has been done on this species in the Bay.

In the years preceeding 1980, a bay-wide survey over a period of one year found that the number of manatees varied seasonally, with a maximum of 55 being observed in the winter. Research continues to bolster evidence that Tampa Bay is an important year round or seasonal home to the manatee. The Tampa Bay Estuary Program reports that more than 200 of the Gulf Coasts 1800 mantees seek refuge in the winter at the warm water discharges surrounding the bay's power plants. The largest single aggregation was 42 individuals observed around the mouth of the Alafia River in February, 1980. The mouth of the Alafia River has been designated a State Manatee Sanctuary by the Florida Department of Environmental Protection, and is the only such area in Tampa Bay.

### **9J-5.012(2)(c)- Historic and Archaeological Resources**

The protection, preservation, and restoration of historic resources is an integral part of the federal Coastal Zone Management Act. The best available information is that provided by the Florida Master Site Files.

#### **Historically Significant Structures in the Coastal Planning Area:**

George H. Elsberry Farm House, 4 Mi. E. on S. R. 674, Wimauma  
Giants Motel, south US 41, Gibsonton  
Kep-Rite Tourist Court Office, 9839 US 41 Gibsonton  
L.L.Dickman House, 401 Tamiami Trail, Ruskin  
Lewis Good Gulf Service, Swilley Rd., and SR 39, Alafia  
Ruskin Vegetable Corporation Bldg., US 41 at Millermack, Ruskin  
Ruskin Women's Club, 508 Tamiami Trail, Ruskin  
Sun City Show House, 2824 Studio Blvd., Ruskin  
Symmes House, Millpoint Rd., Riverview  
U.S. Phosphoric Products Bldg., south US 41, Riverview  
W.B. Moody House, W. Hackney Dr., west of US 301 Riverview

W.I. Bradley Place, Riverview  
William House, 10605 Hackney Dr, Riverview  
Wimauma Church of the Nazarene, SR 674, Wimauma  
Providence Baptist Church, 5416 Providence Church Rd., Riverview  
James L. Hackney House, Section 17, Township 30S, Range 20 E.  
Riverview Cemetery, Providence Rd. and Hackney Dr., Riverview  
Joe Ebert House , Section 20, Township 28S, Range 20 E.

### **Sites of Local Significance for Unincorporated Hillsborough County**

102 College Avenue East, Ruskin; 402 College Ave. East, Ruskin; 601 4th Ave. SW, Ruskin; Dr. Beaudette House, Ruskin;  
Grubbs House, Gibsonton.

Hillsborough County does not contain a large number of built historic resources; rather, the predominant historic resources are archaeological sites. Because a significant portion of the unincorporated County's archaeological sites are located in the coastal zone, special consideration should be given to those resources. Hillsborough County adopted a landmark ordinance as part of its Land Development Regulations in March, 1992. The future requires continuing efforts to achieve the long-term goal of historic preservation.

### **Impacts of Future Land Use on Historic Preservation**

The County's historic resources are located within suburban and rural development areas which will accommodate their continued use. Future land Use designations have not created non conformity of structures.

Hillsborough County, in an attempt to manage its diverse growth has adopted an Urban Service Area. The Urban Service Area emphasizes three principles: the type of development; the location of development; and the services required for development. These three principles should be properly coordinated to promote a rational transition from urban to rural land uses within the County.

The Urban Service Area concept provides a three tiered infrastructure phasing system coordinated with the Comprehensive Plan land use categories and the County's Capital Improvements Program to provide urban service delivery. Urban services may include public water, wastewater, roadways, stormwater, fire and police protection, parks, and transit.

The Urban Service Area provides some order and reliability to the land development process, its implementation can have a positive impact on historic resources. The historic resources that are located in the designated Urban Service Area should make these structures attractive for continued use. Conversely, for those structures that are located outside the USA may not experience development pressures to be converted to subdivisions.

The Future Land Use Element also contains policy provisions which set up the framework for the preservation and reuse of historic structures within Hillsborough County, including those that lie within the coastal planning area.

## **9J-5.012(2)d- Estuarine Management**

### **Definition and Importance of the Tampa Bay Estuary**

The entire shoreline of Hillsborough County borders on the Tampa Bay estuary. Closely associated with the Tampa Bay estuary are the tidal freshwater habitats that occur immediately above the upper limits of salt water. These ecosystems are vitally important as nursery and spawning areas for many anadromous fisheries. Seaward from the estuary, measurable dilution of sea water by land drainage can be traced for considerable distances offshore. Moreover, considerable acreages of vegetated wetlands, including seagrass meadows, salt marshes and mangrove forests, occur along the shallower bottoms and peripheral fringes of the estuary. Together with the open water estuary, these important transition zones comprise the entire Tampa Bay estuarine system.

Because of their unique physical and chemical properties, estuaries are among the most biologically diverse and productive ecosystems in the world. Tidal wetland vegetation at the headwaters of estuaries trap silt and absorb excess nutrients resulting from land drainage, thus buffering the coastal ecosystem somewhat from upland sources of pollution. Tidal wetland vegetation also protects upland areas by stabilizing coastal sediments and preventing erosion from storm events.

The real importance of estuarine plant communities such as mangrove forests, salt marshes, and seagrass beds lies in the vital functions they perform in the aquatic ecosystem. First and foremost is their role in converting sunlight and nutrients into food usable by marine animals, thus forming the base of the aquatic food chain. Odum (1971) estimated that the richest coastal marshes produce 10 tons per acre of plant material per year, or more than six times the average amount of wheat produced per acre. Although relatively little of this plant material is eaten directly by higher animals, it is broken down into detritus by micro-organisms and consumed by small crustaceans and other animals which are, in turn, eaten by larger fishes and so on up the food web.

In addition to serving as a food source, estuarine wetland vegetation provides shelter and nursery areas for the young of many economically important species such as shrimp, seatrout, mullet and red drum (redfish). Although the majority of species do not spend their entire lives within estuaries, it is estimated that nearly 98 percent of the most economically important fisheries species taken along the Gulf of Mexico coast are directly dependent upon estuarine habitat during some portion of their life cycle.

Tampa Bay is Florida's largest open water estuary, with a total surface area of almost 400 square miles. The Tampa Bay estuarine system has been geographically subdivided into seven named subunits including: Old Tampa Bay, Hillsborough Bay, Middle Tampa Bay, Lower Tampa Bay, Boca Ciega Bay, Terra Ceia Bay, and the Manatee River.

The data inventory and analysis that follows primarily addresses estuarine conditions, impacts and trends in Hillsborough Bay, Old Tampa Bay and Middle Tampa Bay, the primary impact area of Hillsborough County. However, it is also recognized that the Tampa Bay estuarine system is a dynamic waterbody within which the cumulative impacts of numerous localized perturbations are often expressed on a Baywide scale, irrespective of political boundaries. Therefore, Baywide trends are discussed and summarized as appropriate.

### **Existing Conditions and Past Impacts**

**Water Quality:** In practical terms, water quality refers to the fitness of water for both human and natural uses and can be described by concentrations of specific parameters (such as bacteria) or by the relation of observed concentrations to state standards (e.g. allowable levels of bacteria). Several parameters are important from the standpoint of human uses of the Bay. The Environmental Protection Commission of Hillsborough County (EPC) has monitored numerous parameters throughout Tampa Bay every month since 1972. The EPC summarizes monitoring data in a series of annual reports in which a "general water quality index" for Tampa Bay is presented. Values of the index range from excellent (collectively low values) to undesirable (collectively high values), and are based on ranked averaged values for total coliform bacteria, turbidity, chlorophyll, total organic carbon and biochemical oxygen demand (BOD). Although the general water quality index is a useful comparative tool, it should not be used as an absolute measure of conditions in Tampa Bay. Each parameter must be considered individually to truly assess its role and influence on the Bay's water quality.

**TABLE 2 TAMPA BAY SUMMARY WATER QUALITY INDEX**

Year	Lowest WQI	Highest WQI	Number of Stations with WQI <70 Pts.	Number of Stations with WQI >90 Pts.
1998	58.2	89	8	0
1999	71.9	92	0	8
2000	71.4	23	0	0

Source: Environmental Protection Commission, 2000

General water quality in McKay and Hillsborough Bays has been undesirable since monitoring began. EPC attributes low water quality in Hillsborough Bay to the City of Tampa Hookers Point Wastewater Treatment Plant discharges and other industrial wastes. The influence of Hillsborough Bay upon Tampa Bay extends along the eastern shore to the area offshore from the Little Manatee River. This area has been reflected as fair to poor water quality in most years since 1978. General water quality in and near the Cockroach Bay Aquatic Preserve has been excellent or good, except for fair to poor ratings near the Little Manatee River, which is due to the seasonal influence of river discharge. In 2000 the EPC reported most of Tampa Bay having good water quality.

**Sediment Pollution:** The sediments of the Tampa Bay estuary are generally uniform in character. They are mostly composed of reworked terrace quartz and near shore sand and biogenic carbonate detritus. The mean size of the sediments increases from the upper to the lower reaches of the estuarine system. Organic sediments and clays are prominent, primarily in the upper portions of Hillsborough Bay and in other isolated portions of the Bay complex. Because of their greater binding capabilities, pollutants such as heavy metals are generally more concentrated in the fine-grained sediments of Hillsborough and Old Tampa Bays.

The Florida Department of Environmental Protection (FDEP) analyzed sediment quality in Hillsborough Bay during its comparative study of estuarine sediments in deepwater ports. In general, sediments in and around the port and urban areas of Hillsborough Bay contain elevated levels of metals, including cadmium, lead, zinc and mercury. Natural levels for chromium and copper are only slightly exceeded. The combined metals data indicate anthropogenic (man-induced) impacts most likely caused by urban stormwater runoff.

Organic carbon and nitrogen and total phosphate distributions in Hillsborough Bay sediments were determined in 1968 by the Florida Water Pollution Control Authority. Organic carbon and nitrogen concentrations were determined to be high at Hookers Point and south of Long Shoal, located east of the MacDill Air Force Base sewage treatment plant outfall in 1968. Studies performed by the

Florida Department of Environmental Regulation (McClelland, 1984) indicate that under certain conditions, the sediments of Hillsborough Bay and Old Tampa Bay have amongst the highest nutrient flux rates recorded. These data suggest that even with improved wastewater and stormwater treatment measures, there may always be a significant reservoir of nitrogen and phosphorous in Bay sediments to contribute to water quality problems in upper Tampa Bay.

**Point Source Pollution:** Stormwater, industrial operations and domestic wastewater treatment plants are major sources of pollutants discharged to the waters of Hillsborough County. The Environmental Protection Commission, in cooperation with the Florida Department of Environmental Protection uses a permit process as the primary tool for controlling water pollution from the industrial and domestic sources. Stormwater management is also addressed through a permitting process, this is administered by the Southwest Florida Water Management District.

Inventory and analysis of all point sources discharged into the Tampa Bay estuarine system revealed 59 sources along rivers or directly on the Bay (Moon, 1985). In 1980, these point sources contributed 190 billion gallons of water, carrying 2.35 and 3.58 million pounds of phosphorous and nitrogen, respectively, to the Bay. Among the four major rivers contributing to Tampa Bay, the Alafia River contributed 75% of all water discharged from permitted point sources. This volume is attributed to the extensive phosphate mining operations in Polk and Hillsborough Counties. Although this is a high volume, the greatest nutrient loads were discharged by municipal wastewater treatment plants discharging directly into Tampa Bay. Wastewater treatment plants accounted for 78% and 84% of the annual phosphorous and nitrogen loadings, respectively, in 1980.

In 1996, all sewage treatment plants discharging into Tampa Bay and its tributaries provide Advanced Wastewater Treatment, a process that can reduce nitrogen loading from effluent by as much as 90 percent. The retrofit of Tampa's Howard F. Curren facility at Hooker's Point, the areas largest plant, has been a catalyst in the bay's water quality recovery. On a Bay-wide scale, other factors involved in this reduction include alternative effluent disposal methods (e.g., spray irrigation, deep-well injection), municipal and industrial water reuse, upgrading of treatment capabilities, and phosphate land reclamation projects. While advances in wastewater treatment and increased regulation have helped reduce pollution, sewage treatment plants and industries discharging into the bay still contribute substantial pollutants to Tampa Bay. The Tampa Bay National Estuary Program reports that sewage treatment plants in the watershed contribute approximately 340 tons of the Bays total annual nitrogen loadings. Although all sewage treatment plants with surface discharge to the Bay or Bay tributaries now provide Advance Wastewater Treatment, roughly 36 billion gallons of effluence are still discharged to the Bay each year with Hillsborough Bay receiving the largest portion. In 1991, this sector received two thirds of the cumulative nitrogen load from domestic wastewater treatment plants discharging into the Bay.

Wastewater discharged from industrial facilities in the Tampa Bay watershed is responsible for about 8 percent of the total nitrogen loading. The largest categories of industrial sources are fertilizer manufacturing and shipping facilities. Despite progress in bay cleanup, nitrogen continues to be a key focus of concern for Tampa Bay. Excess amounts of this otherwise beneficial nutrient can pollute the bay by accelerating algae growth. Excess algae reduces light penetration to seagrasses and ultimately depletes the water of dissolved oxygen.

Industrial and municipal point sources are also pathways for toxic substances to enter the Bay. This contributes about 30 percent of the Bay's total loadings of arsenic, cadmium, chromium and copper, as well as low levels of other contaminants. Homeowners also contribute by discarding toxic cleaners, or solvents that local sewage treatment plants cannot remove completely.

**Non-Point Source Pollution:** Non-point source pollution encompasses those sources of water pollution which are diffuse in nature, and generally refers to urban stormwater runoff. Sources of urban stormwater pollution have been identified as trash and litter deposited on streets and parking lots; erosion of exposed ground due to construction, lawn and landscape maintenance; domestic pet litter; automobile emissions; and atmospheric pollution. Following a storm event, these non-point sources of pollution are concentrated by stormwater collection systems and transported to a point of discharge.

Stormwater runoff from the Tampa Bay watershed contributes about 62 percent of the bay's total annual nitrogen load. Runoff also conveys more than 60 percent of the annual loadings from each of the following metals: chromium, zinc, mercury, and lead. Many toxic contaminants enter the bay attached to fine grained particles in stormwater runoff. Consequently, total suspended solids also are regarded as pollutants. Solids suspended in the water are of concern because they reduce water clarity and sunlight available for seagrass growth.

More than half of the nitrogen in urban runoff comes from residential areas, the region's largest land use. By comparison, commercial/industrial sites account for about 7 percent of total nitrogen in urban runoff, although their per acre contribution is higher than that of residential uses. (Zarbock et.al. 1994). Runoff from intensive agricultural land uses contribute about 12 percent of total bay loadings along with pesticides. Agricultural runoff from pastures and range lands account for 17 percent of total bay nitrogen loadings, with forests and wetlands contributing 6 percent, and mining the remaining 6 percent.

**Per-Acre Nitrogen Loadings  
from Non-Point Sources**

	%	%	Yield
	Loading	Watershed	lbs/ac/yr
Residential	14	15.5	4.52
Commercial	7	6.4	5.26

Industrial/Institutional			
Mining	6	3.2	4.97
Range and Pasture	17	28.4	2.81
Intensive Agriculture	12	6.5	5.63
Undeveloped Land	6	39.93	1.15

Source: *Tampa Bay Estuary Program, 2003*

**Tributaries:** Freshwater discharges to an estuary are critical to the maintenance of good circulation and flushing, as well as the salinity gradient required by numerous estuarine-dependent fisheries. Four major rivers, the Hillsborough, Alafia, Little Manatee and Manatee, flow into Tampa Bay. Another, the Palm River, once drained lands between the Hillsborough and Alafia Rivers, but has been completely channelized and controlled since 1970 and is now called the Tampa Bypass Canal. All but the Manatee River occur in Hillsborough County. The Hillsborough and Manatee Rivers are impounded as municipal reservoirs. Some of the flow of the Little Manatee is withdrawn for power plant cooling water, but it is otherwise regarded to be the least disturbed river flowing to Tampa Bay. The Alafia has been affected by phosphate mining and processing and is impounded at places.

Numerous lesser tributaries and three major flood control channels also drain into Tampa Bay. Many unrated creeks and streams drain 879 square miles of coastal watershed between river basins; several of these have been channelized, filled, or modified beyond rehabilitation. Three restorable streams are Double Branch Creek in upper Old Tampa Bay, Bullfrog Creek south of the Alafia River, and Piney Point Creek near Port Manatee. Other tidal streams entering into rivers have not been modified as much as the urban streams.

**Circulation and Flushing:** Circulation refers to the paths taken by water currents and their constituents due to tidal forces, runoff, wind, and other effects. Flushing is the net retention or export of water or waterborne material after circulation has occurred over a given period of time. Both circulation and flushing in estuaries are largely determined by the relationship of freshwater inflow to tidal volume. In Tampa Bay, freshwater inflow from rivers, sewage plant effluent and rainwater runoff contribute some localized flushing. This however, is exceeded by the tidal volume by a factor of 500 or more, making it a comparatively sluggish estuary with regard to both circulation and flushing.

The Environmental Protection Commission reports that a complete tidal cycle for Tampa Bay requires 14 and a half days in which a cycle of two high and two low tides predominates.

**Eutrophication:** Eutrophication is defined as the process of increasing dissolved nutrient concentrations (nitrogen and phosphorous) to a point where nutrient enrichment produces certain characteristic responses in a water body. These responses include algal blooms, noxious odors, decreases in water clarity, declines in dissolved oxygen, and periodic fish kills.

Studies performed by the Department of Environmental Protection, the U. S. Geological Survey, and the City of Tampa concluded that urban runoff from streets, parking lots and lawns could contribute up to 25% of the biochemical oxygen demand, 35% of the suspended solids, and 15% of the nitrogen loading to Hillsborough Bay. These studies further suggested that stormwater runoff is a major source of nutrient enrichment to the entire Tampa Bay estuarine system.

The control of nutrient loadings from stormwater runoff will most likely be a more intractable problem. The State stormwater rule (Chapter 17-25, F. A. C.) currently requires that newly-constructed drainage facilities provide water quality treatment of runoff prior to discharge. However, little can be done to reduce current loading rates, as retrofitting of stormwater treatment facilities is most likely economically prohibitive. Retrofitting will probably only occur on a piecemeal basis as redevelopment occurs in previously urbanized areas.

**Dredge and Fill:** It has been estimated that the original surface area of the Tampa Bay estuarine system has been reduced by 3.6%, or 13.15 square miles, due primarily to the filling of shallow tidal wetlands for development. Of this acreage, about 11% was for the construction of causeways, 15% each for residential and commercial (power plants) development, and 60% for port development including channels, filled sites, and dredged material disposal sites. This development resulted in the filling or excavation of 44% of the Bay's marsh and mangrove habitat, and contributed, through direct destination or increased water turbidity, to the loss of 81% of the Bay's seagrasses.

Because of scientific documentation of the value of tidal wetlands as wildlife and fisheries habitat in the early 1970's, the type of large-scale dredge and fill projects which were routinely permitted by regulatory agencies in the 1950's and 1960's are no longer permitted, and any proposed project undergoes close scrutiny.

**Freshwater Flows to the Bay:** More than 60 years of marine research has shown conclusively that low-salinity estuarine water, combined with the physical protection and energy sources supplied by marine plants, constitutes the primary nursery habitat for most of the commercially and recreationally important fish and shellfish species in the Gulf of Mexico. In addition, freshwater flows into estuaries are critical to maintaining normal circulation and flushing patterns.

With the population of the Tampa Bay area growing rapidly, public demand for increased diversion of freshwater is expected to grow. It is critical that future plans to divert additional flows of freshwater away from the Bay receive careful biological study.

**Fisheries:** The health of Tampa Bay's fisheries is important to the economic and recreational value of the Bay. Thus, it is important that the enhancement and restoration of fishery stocks be identified as a key measurable objective for all future estuarine management efforts.

Available commercial landings data and anecdotal evidence strongly indicate that both finfish and shellfish stocks have declined significantly in Tampa Bay since the early 1950's. The loss of wetland habitat (especially seagrasses) and degraded water quality are cited most often as the cause for these declines, although excessive commercial fishing pressure has also been identified as a contributing factor. More recently, the diversion of freshwater and the resulting alteration of critical low-salinity nursery areas has been cited as a potential problem for many estuarine-dependent fisheries.

The future of Tampa Bay's fisheries under the projected growth scenario will be primarily dependent upon the success of measures taken to control nutrient enrichment of the Bay, restore habitat and provide adequate freshwater flows

### **Coastal Redevelopment Needs and Potential**

Because Hillsborough County's coastal shoreline is a limited natural and economic resource, it is in the public interest to ensure the maximum beneficial and efficient use of coastal lands.

Because of the relative youth and viability of the existing development within Hillsborough County's coastal shoreline, there is not a major need for extensive areawide redevelopment efforts. In localized areas, however, there is a need for redevelopment of individual properties or small land areas. Shell mining located within the southern sectors of the County's coastal zone is a temporary enterprise, affording the opportunity for redevelopment/reclamation of the sites. The issue of immediate concern is the reclamation of existing mined-out areas. One possibility may be to require the creation of functional water bodies in former mine areas and the utilization of them as recreational areas and/or residential developments capitalizing on the amenity potential of the water bodies.

In the Port Sutton and Port Redwing areas of the County there is a need for intensive redevelopment of individual structures and small land areas. Since many of the derelict structures are in private ownership and management, incentives to encourage private investment and redevelopment may be needed, thus lessening the need for new water-dependent and water-related facilities in pristine, undeveloped areas, where the adverse fiscal and environmental impacts will be most greatly felt. The need for maximum efficiency of coastal land use is obviously crucial to effective long range coastal planning and natural resource/amenity conservation.

### **Intergovernmental Coordination**

**Existing Regulatory Programs:** Currently, management of the Tampa Bay estuarine system and adjacent coastal waters is fragmented amongst a multitude of federal, State and regional regulatory agencies, as well as seventeen local governments bordering the Bay. Management is accomplished through the implementation of various monitoring, permitting and regulatory programs. However, under the existing management framework, jurisdictions

are often overlapping, interests are often conflicting, and no one agency has overview authority for the Bay, or manages it as a holistic natural resource.

The major agencies currently involved in the management of estuarine wetland habitat in the Tampa Bay region include the following:

#### Federal

- U.S. Army Corps of Engineers (USACE)
- U.S. Fish and Wildlife Service (USFWS)
- U.S. Environmental Protection Agency (EPA)
- U.S. Department of Commerce (NOAA)
- National Marine Fisheries Service (NMFS)

#### State

- Florida Department of Environmental Protection (formerly the Florida Department of Environmental Regulation [FDER] and the Florida Department of Natural Resources [FDNR]; merged in July, 1993)
- Florida Fish and Wildlife Conservation Commission (FWC)
- Florida Department of Community Affairs (FDCA)

#### Regional and Local

- Southwest Florida Water Management District (SWFWMD)
- Tampa Bay Regional Planning Council (TBRPC)
- Tampa Port Authority (TPA)
- Environmental Protection Commission of Hillsborough County (EPC)
- Counties and Municipalities

Federal: The U. S. Army Corps of Engineers (USACE) has a broad range of regulatory and permitting authority for dredge and fill projects within estuarine waters. Jurisdiction and regulatory functions are based on Section 10 of the Rivers and Harbor Act of 1899 and Section 404 of the Clean Water Act of 1977. During the permitting process, the USACE solicits recommendations on the permissibility of projects from the U. S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), and the Environmental Protection Agency (EPA).

The USFWS reviews and provides recommendations on the impact of projects on fish and wildlife habitat, pursuant to authority granted by the Fish and Wildlife Coordination Act (FWCA), Endangered Species Act, and the Marine Mammal Protection Act. The NMFS, under the Magnuson Fisheries Conservation and Management Act and the FWCA, is responsible for habitat protection and fisheries management for estuarine and marine fishes. The NMFS advises the USACE concerning the impact of projects on fish and wildlife habitat under these Acts and provisions of the Endangered Species Act and the Marine Mammal Protection Act. Although the EPA has the responsibility for establishing and enforcing national water pollution control standards, through the Clean Water Act and the National Pollutant Discharge Elimination System, the USACE is the permitting agency for dredge and fill projects and can veto permits under the authority granted in Section 404(c) of the Clean Water Act.

The EPA provides comments to the USACE on the permissibility of projects with respect to water quality impacts.

In addition to providing comments on dredge and fill permit applications, the USFWS manages public use of three National Wildlife Refuges within the Tampa Bay Region, including Egmont Key, Passage Key, and the Pinellas Wildlife Refuge (six mangrove islands, including Tarpon Key in Boca Ciega Bay).

Within the U. S. Department of Commerce, the National Oceanic and Atmospheric Administration's Office of Coastal Zone Management (CZM) has a planning and review role in the coastal zone. Under the Coastal Zone Management Act, the CZM has the responsibility to preserve, protect, develop, and, where possible, restore and enhance the resources of the coastal zone. The CZM grants money to states with approved coastal zone management plans and has the responsibility for reviewing large projects for consistency with those plans.

**State:** Most of the regulatory and permitting authority for dredge and fill projects within estuarine waters of Florida is held by the Florida Department of Environmental Protection (FDEP). As part of the permit process, the FDEP solicits comments from affected parties and local governments. Comments are also received from either the Florida Fish and Wildlife Conservation Commission (FWC) concerning the effects of a project on fish and wildlife habitat and endangered or threatened species (as authorized by the Florida Endangered and Threatened Species Act of 1972).

The role of the FDEP in this process is also to administer and enforce regulations for use of submerged and tidal land belonging to the State, as authorized in Chapter 253, Florida Statutes, with administrative procedures in Florida Administrative Code, Rule 160-17. The FDEP comments on the use of State-owned submerged lands, but the title and administrative control is still held by the Board of Trustees of the Internal Improvement Trust Fund, currently represented by the Governor and Cabinet. Use of State-owned submerged land is typically not granted if the comments are unfavorable.

As part of the responsibility for the regulation and management of fish and wildlife habitat in marine and estuarine waters, FDEP manages the four Aquatic Preserves in the Tampa Bay region, including the Cockroach Bay Aquatic Preserve, the Pinellas County Aquatic Preserve, the Boca Ciega Bay Aquatic Preserve and the Terra Ceia Aquatic Preserve. Aquatic preserve designation limits the extent of dredging, filling and construction in the preserve, in accordance with Section 258.42, Florida Statutes. Basically, beyond "reasonable ingress or egress by riparian owners," only projects clearly in the "public interest" can be permitted in an aquatic preserve.

The FDEP is also responsible for acquisition of lands for preservation as wildlife habitat and recreational areas. An example is the Bower Tract, a 627 acre tract in northern Old Tampa Bay, which has been purchased under the Conservation and Recreation Land Program (CARL). In addition, FDEP

administers funds collected from gill net license fees in Hillsborough, Manatee, Pinellas and Pasco Counties for the sole purpose of performing estuarine fisheries habitat research and restoration.

The FDEP is also responsible for protection of water quality. The FDEP, through broad regulatory and enforcement powers defined by the Clean Water Act, has the permitting and enforcement responsibility to protect and improve water quality. The Florida Department of Community Affairs (FDCA) has a limited planning role in the Tampa Bay region, primarily through the Development of Regional Impact (DRI) process. FDCA is also responsible for designating Areas of Critical State Concern (ACSC), of which the Green Swamp in Polk County is the only one locally.

**Regional and Local:** The Environmental Protection Commission, in cooperation with the Florida Department of Environmental Protection, uses a permit process as the primary tool for controlling water pollution from industrial and domestic sources. Both the FDEP and the Southwest Florida Water Management District (SWFWMD) regulate the flow of surface water into Tampa Bay and coastal estuaries. The FDEP has delegated its authority for implementing stormwater regulations to the Southwest Florida Water Management District. The SWFWMD controls groundwater levels by issuing and monitoring Consumptive Use Permits (CUPs), and controlling discharges from upland canals. In addition, the SWFWMD permits construction within, and uses of, the waters of canal systems within their district, and sets minimum flow levels for coastal rivers and tributaries.

The Tampa Bay Regional Planning Council (TBRPC) has the leading natural resource planning role in the Tampa Bay region. Pursuant to the provisions of the Clean Water Act, TBRPC was delegated the responsibility for preparing the Areawide Water Quality Plan (AWQP) and numerous related studies, including a Reservoir Protection Plan and a Groundwater Protection Plan. In 1984, the Florida Legislature established the Tampa Bay Management Study Commission, which was given a one-year mandate to develop a management plan for Tampa Bay. The Commission, which was to be housed within and staffed by TBRPC, completed its final report, entitled *The Future of Tampa Bay* (TBRPC, 1984), and submitted it to the Legislature in 1985. In addition to numerous special planning studies, the TBRPC also performs technical reviews, coordinates all agency comments, and issues recommended Development Order conditions for Developments of Regional Impact within the region.

The Tampa Port Authority (TPA) has permitting authority and jurisdiction pursuant to Chapter 84-447, Florida Statutes, Special Acts of 1984. The prime mandate of the TPA is to promote and manage the navigable waters of Tampa Bay for port development. TPA sponsored the Tampa Harbor Deepening Project. Jurisdictional waters include all tidal waters of Hillsborough County, Lake Thonotosassa, Lake Keystone, the Alafia River, the Hillsborough River and the Little Manatee River. Involvement in dredge and fill projects includes assessments of the engineering, hydrographic, and biological aspects of various dredge and fill and construction projects by the TPA Environmental Affairs

Department. In addition, TPA performs limited research and sponsors habitat restoration projects.

Most local government organizations in the Tampa Bay area have the opportunity to review and comment on applications during state and federal permitting processes. The TBRPC and county governments surrounding Tampa Bay (Hillsborough, Pinellas, and Manatee) comment on the permissibility of applications to the federal, State and local permitting agencies according to their local regulations. Hillsborough County receives money from the TPA permit fees to pay for review of applications by the Environmental Protection Commission and The Planning Commission. The FDEP has delegated some responsibilities for water quality programs to county agencies, and most of the local governments have developed ordinances or policies aimed at controlling the impact of development on water quality. Manatee and Hillsborough Counties have conducted routine monitoring studies within Tampa Bay and its tributaries. Local governments have a limited role or jurisdiction over habitat management. At this level, the emphasis has primarily been on County managed-parks, including: Upper Tampa Bay Park (Hillsborough County), E. G. Simmons Park (Hillsborough County), and Fort DeSoto Park (Pinellas County). The Environmental Protection Commission of Hillsborough County, however, issues a separate permit for dredge and fill projects in both tidal and isolated wetlands.

Most of the municipal governments in the Tampa Bay region require construction permits for structures in the coastal area. The local permit process typically does not include an extensive environmental assessment, and municipal governments generally do not have adequate staff to comprehensively review federal and State applications on an ongoing basis.

In summary, responsibility for the management of coastal and estuarine resources in the Tampa Bay Region is fragmented along legal and political lines, and no ecosystem-level management exists at this time. Although numerous permits must be obtained before a proposed project can proceed, there is no overall plan to ensure consistency between agencies in the issuance of permits, nor are the overall cumulative impacts of several projects considered during the review process.

### **The Surface Water Improvement and Management (SWIM) Program**

With the passage of the Surface Water Improvement and Management (SWIM) Act of 1987, the Southwest Florida Water Management District was mandated the responsibility for improving, maintaining, restoring and protecting Tampa Bay and its tributaries. As required under the Act, SWFWMD must identify surface water bodies in the Tampa Bay drainage basin for conservation and restoration and develop work programs to manage those activities. The programs are to be funded by the Legislature and staffed by SWFWMD.

On August 1, 1988, the SWFWMD published the Surface Water Improvement and Management Program for Tampa Bay. In this plan, five priority issues

have been identified as critical to the management, restoration and preservation of the Bay, including:

- Water quality improvement;
- Habitat protection and restoration;
- Fisheries and shellfish management;
- Development and use of the Bay; and
- Legal framework for comprehensive management.

### **Coordination Potential- The Future:**

The Tampa Bay Estuary Program was established in 1991 to assist the community in developing a comprehensive plan to restore and protect Tampa Bay. The Program receives local administrative support from the Tampa Bay Regional Planning Council.

The landmark agreement establishing the Tampa Bay Program brought together Hillsborough, Pinellas and Manatee counties; the cities of Tampa, St. Petersburg and Clearwater; the Southwest Florida Water Management District; the Environmental Protection Commission of Hillsborough County; Florida Department of Environmental Protection; and the U.S. Environmental Protection Agency in a partnership committed to action.

The missions of the Estuary Program are: to set reasonable, achievable goals for the estuary's recovery; to coordinate the many new and ongoing bay management initiatives, from small-scale efforts that focus on individual segments of the bay to broad-based programs that address the estuary as a whole; and to determine how best to implement these programs in the future to avoid costly and ineffective duplication of efforts.

Additional roles of the Tampa Bay Program include evaluation potential options and costs of bay management strategies on a site-specific basis, and developing scientific and economic models to help bay managers attain the goals of the management plan.

The Tampa Bay National Estuary Program has also published "Charting the Course for Tampa Bay" which is the basis for the "Comprehensive Conservation and Management Plan for Tampa Bay".

The Comprehensive Conservation and Management Plan for Tampa Bay contains action plans that address the following areas:

- Water and Sediment Quality
- Bay Habitat
- Fish and Wildlife
- Dredging and Dredged Material Management
- Spill Prevention and Response

### **9J-5.012(2)e- Natural Disaster Planning**

Hillsborough County is susceptible to a wide variety of natural disasters. In response to that susceptibility, Hillsborough County has prepared a Comprehensive Emergency Management Plan (CEMP), in cooperation with the incorporated cities, the Tampa Bay Regional Planning Council and the State of Florida Division of Emergency Management. The CEMP establishes: the procedures for disseminating warnings and reporting the severity and magnitude of any disaster; operational procedures for governments' and disaster organizations' response to disasters; a framework for expeditious, effective and coordinated employment of resources; procedures for requesting State and federal assistance; and a description of recovery and mitigation operations.

The Tampa Bay region, including Hillsborough County, has been identified by the National Weather Service as one of the most hurricane-vulnerable areas of the United States, with the potential for large scale loss of life. For purposes of this document, natural disaster planning will focus on a hurricane event.

The County's vulnerability to a hurricane is a result of several factors, including its location on Tampa Bay and the large number of people living in low-lying coastal areas and in mobile homes. The choice of individuals to live in coastal areas and/or mobile homes increases their susceptibility and vulnerability to the effects of the storm surge and high winds of hurricanes.

A hurricane is a regional phenomenon in terms of the geographic area affected by the hazards of a hurricane making landfall or closely approaching the coast of Florida. Just as a hurricane knows no political or jurisdictional boundaries, natural disaster planning must be carried out across jurisdictional boundaries and coordinated among local, State, and federal agencies.

Evacuation Zone Population\*

Evac. Zone	Population 2004	Population 2015	Population 2025
A	88593	108489	122721
B	152653	183880	207651
C	221302	266570	302809
D	283217	338912	384838
E	318126	380260	432516

\*This does not include Group Quarter (e.g. Nursing Homes, Military Barracks, School dormitories, long term hospital facilities, etc.)

Source; Hillsborough County City-County Planning Commission, 2005.

### **Hazard Vulnerability Analysis**

Hazard vulnerability is the likelihood of a particular area to experience a natural disaster. For purposes of this discussion, a natural disaster is limited to a hurricane. The hazard vulnerability analysis includes information and data to identify the geographical area, the population, and the public facilities susceptible to the impacts of a 100-year or Category 3 hurricane event.

The hurricane vulnerability zone is defined as the area requiring evacuation in a Category 3 storm event. A Category 3 hurricane has winds of 111 to 130 miles per hour and storm surge 13 to 18 feet above normal. The hurricane

vulnerability zone is shown graphically, on the TBRPC Storm Tide Analysis and the designated evacuation areas are shown on the Hillsborough County Hurricane Guide. The Hurricane Guide also shows evacuation routes and designated shelters.

In addition to identifying the vulnerability zone, the coastal high hazard area (CHHA) must be defined. The CHHA is defined as the area defined in the most current regional hurricane evacuation study as requiring evacuation during a category one hurricane. The CHHA is graphically represented on attached maps.

**Evacuation**

Evacuation is required in the event of a hurricane. Consequently, an analysis of the number of persons requiring evacuation, the number of public shelter spaces available, the number of public shelter spaces required, and evacuation route transportation constraints is required.

The number of persons requiring evacuation is calculated as “population-at-risk.” This is the total population within the Hurricane Evacuation Zones. It is important to note that this will not likely be the number of people who actually evacuate, because many who live in evacuation zones choose not to evacuate. In addition, some who are not in an evacuation zone will choose to evacuate (“Shadow Evacuation”). It is also important to note that the “population-at-risk” is not the population that will require public shelter space, as many will evacuate to other locations such as hotels and the homes of friends and family.

**POPULATION-AT-RISK  
HILLSBOROUGH COUNTY  
2006**

	<b>EVACUATION LEVEL</b>				
<b>Level</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
	<b>148,338</b>	<b>230,748</b>	<b>292,052</b>	<b>350,934</b>	<b>411,280</b>

**Source: Tampa Bay Region Hurricane Evacuation Study 2006, Tampa Bay Regional Planning Council; November, 2006.**

**POPULATION-AT-RISK  
HILLSBOROUGH COUNTY  
2011**

	<b>EVACUATION LEVEL</b>				
<b>Level</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
	<b>166,682</b>	<b>256,156</b>	<b>322,563</b>	<b>386,507</b>	<b>452,373</b>

**Source: Tampa Bay Region Hurricane Evacuation Study 2006, Tampa Bay Regional Planning Council; September, 2006.**

The population figures included in this document are Countywide totals, including unincorporated Hillsborough County and the three municipalities: Tampa, Plant City, and Temple Terrace.

**Evacuees Seeking Public Shelter:** In the hurricane evacuation planning process, an indication of shelter destinations sought by potential evacuees is useful for determining adequate public shelter capacity based on expected demand, as well as aiding in the computation of evacuation times. Population analyses and behavioral surveys indicate that ultimate evacuee destinations include a variety of choices: 1) friend's or relative's homes, 2) hotel/motels, 3) public shelters, or 4) out of the region.

**Hurricane Public Shelter Availability:** The Annual County Hurricane Guide identifies public shelters available for each hurricane season. The County, with state assistance, is attempting to add shelter space to address deficits. Hillsborough County, in coordination with the State, will need to address the existing shelter deficit for major storms and the possibility of future deficits based on a county-wide projected annual population growth of 1.5%.

<i><b>Shelter Demand Hillsborough County 2006</b></i>										
Evacuation Level	<b>A</b>		<b>B</b>		<b>C</b>		<b>D</b>		<b>E</b>	
Seasonal Fluctuation	Low	High	Low	High	Low	High	Low	High	Low	High
Capacity = 55,282	16,532	16,884	38,260	38,610	51,247	51,602	65,806	66,156	73,941	74,289

**Source:** Tampa Bay Regional Hurricane Evacuation Study 2006, Tampa Bay Regional Planning Council; November 2006.

To determine the shelter demand the following assumptions were made: 15% of the surge-vulnerable population-at-risk plus 40% of the mobile home residents (50% occupancy) plus 25% of the shadow evacuation population (10-25% participation rate).

<b>Shelter Demand</b>										
<b>Hillsborough County</b>										
<b>2011</b>										
Evacuation Level	<b>A</b>		<b>B</b>		<b>C</b>		<b>D</b>		<b>E</b>	
Seasonal Fluctuation	Low	High	Low	High	Low	High	Low	High	Low	High
Capacity = 75,000	18,561	18,924	42,487	42,848	56,646	57,012	72,586	72,954	81,463	81,833

**Source: Tampa Bay Regional Hurricane Evacuation Study 2006, Tampa Bay Regional Planning Council; November 2006.**

It is important to note the table is for all of Hillsborough County. It is not broken down for individual jurisdictions.

Conclusion: For Year 2006 there is an estimated shelter space deficit for evacuation level D and E. The County recognizes that there is a need to increase the amount of shelter capacity available. One of the measures to increase shelter capacities is to retrofit existing public schools to make them more wind-resistant. State funding is being provided for this purpose. In addition, newer schools with more wind-resistant characteristics will be added as shelters by the County as they come on line. Objectives and policies of this element support the expansion of shelter space to accommodate estimated shelter demand.

### **Transportation Constraints**

The Tampa Bay Regional Planning Council (TBRPC) has prepared transportation models to determine the best available evacuation routes for Tampa/Hillsborough County residents and visitors. These models identify several factors that contribute to determining the optimum evacuation route. These factors include areas-at-risk, public shelter location, inter-jurisdictional traffic impacts, and expected behavioral responses of the population at risk.

One of the most important factors in hurricane preparedness is the understanding of “evacuation time” which is defined as the amount of time prior to projected landfall that an evacuation order must be given in order to allow the completion of a safe evacuation. Evacuation time has two components: clearance time and pre-landfall hazards time.

Clearance time is composed of three contributing portions of time resulting from the response and relocation process: 1) mobilization time, or how long it would take a household to begin evacuation; 2) travel time, a function of the specific distances of the collective evacuation trips and attainable speeds; and 3) queuing delay time, or the time delay that occurs when the total volume of vehicles assigned to a roadway link exceeds that link’s capacity. Clearance times are used to allow the evacuation to be completed prior to the arrival of tropical storm force winds.

CLEARANCE TIMES (IN-COUNTY MOVEMENTS) HILLSBOROUGH COUNTY (HOURS)										
2006										
EVACUATION LEVEL										
	Level A		Level B		Level C		Level D		Level E	
Season	Light	Heavy	Light	Heavy	Light	Heavy	Light	Heavy	Light	Heavy
Low	16.5	19.25	18.5	21.75	19.25	21.75	20.5	23	23	25.75
High	18.5	21.5	20.5	24	21	24	22.25	25.25	25	28

The clearance times (19.25-24 hours “in-county movements”, Category 3) for Hillsborough County are generally quite large, which means that typical hurricane watch and warning time frames will not allow all desired evacuation movements to take place. Specifically, this means that some evacuees who want to leave the region will have to take refuge locally.

### **9J-5.012(2)e-Special Needs Population**

A hurricane evacuation requires not only the evacuation of able-bodied, vehicle-owning residents but also a population consisting of elderly, handicapped, disabled, or individuals lacking personal transportation. Recognizing this special need, the Hillsborough County Office of Emergency Management has provided such residents the opportunity to register with the County regarding their special needs. Residents are encouraged to register with the County so that during an evacuation they can be safely evacuated.

There are typically approximately 5000 people with special needs on the registration list. Of these, approximately 2500 would have to evacuate for a Category 3 hurricane. The total special needs sheltering capacity is 2500. This capacity is considered sufficient to take care of those registrants who would actually seek public shelter (a lesser number than registered would actually use public shelters) plus unregistered “walk-ins” to the shelters.

In addition to special evacuation needs of individuals living in private residences in vulnerable areas, certain hospitals and nursing homes are vulnerable to hurricane storm surge. Two hospitals, Tampa General and MacDill Air Force Base Hospital are subject to storm surge in a Category 1 storm event, and Kindred South Hospital and Town & Country Hospital are in a Category 2 storm surge zone. There are three nursing homes in the Category 2 storm surge zone and one in the Category 3 storm surge zone. Patients of hospitals and nursing homes which must evacuate will be transferred to like type facilities out of the evacuation zones. If any of these facilities have resource shortfalls to conduct evacuations, Hillsborough County Emergency Management Department will coordinate whatever resources are necessary.

Associated with special evacuation needs is the availability of public transportation in the event of a hurricane. Hillsborough County will utilize buses and vans from the School Board, Hartline, social service agencies and public and private ambulance services to meet the needs of the special evacuation population. The County has also established a system of bus routes to evacuate residents who need transportation to public shelter.

Additional information regarding emergency transportation is included in the Comprehensive Emergency Management Plan (CEMP).

### **9J-5.012(2)e-Hazard Mitigation**

Recognizing that Hillsborough County is vulnerable to a hurricane storm event, government is responsible for ensuring that human life is protected and property damage is minimized in flood-prone and coastal high hazard areas; that land use and development patterns are consistent with the vulnerable nature of the coastal high hazard and inland flood-prone areas; and that natural systems and vegetation that serve to reduce the impacts of severe weather are protected and preserved. In order to accomplish these ends, Hillsborough County must consider available options to reduce or limit exposure in the coastal high hazard area; develop guidelines/procedures for development in the coastal high hazard area; propose alternatives to reduce clearance times or reduce deficit public shelter space; and develop methods to redirect population concentrations away from the coastal high hazard area.

One step in this process is the *Local Mitigation Strategy: Risk and Vulnerability Assessment, 1998-1999*. This report, a cooperative effort between unincorporated Hillsborough County, the Cities of Tampa, Plant City and Temple Terrace, was funded through a grant from the Florida Department of Community Affairs and the U.S. Department of Energy. This report serves as the basis for subsequent study to reduce the potential losses from disasters such as hurricanes in the future.

Hillsborough County has adopted a flood management ordinance that is more restrictive than the model developed by the Southwest Florida Water Management District; the County's building code complies with Section 161.56 (1), Florida Statutes. In addition to these regulations, Hillsborough County has also adopted a sign ordinance which controls the maximum size of signs. In general, the County's Land Development Code exceeds minimum standards for flood protection as illustrated under 44 CFR. The adoption of this ordinance, accompanied by the policies proposed in this element, should reduce the cost of debris clearance in the event of future hurricanes. Policies proposed in this element to reduce or limit exposure in the CHHA include:

- Mitigating the impacts of development on evacuation routes and/or public shelter space.
- Notifying residents in the hurricane vulnerability zone regarding need to evacuate, evacuation routes, and public shelter locations.
- Removal of trees susceptible to high wind damage from evacuation routes. Replacement with trees less susceptible to high winds.
- Projects in the CHHA shall be subject to site plan controlled zoning.
- Certain proposed uses (e.g. heavy industrial, schools, and mobile home parks) shall be reviewed on a case-by-case basis to determine appropriateness.
- Water-dependent and water-related uses shall be given priority.
- Lower DRI thresholds, in all categories, to discourage large-scale developments in the CHHA.

- Performance standards shall be developed for the CHHA.

The Hurricane Refuge Alternative Study prepared by the Tampa Bay Regional Planning Council assesses the feasibility of vertical evacuation with respect to structural/technical, operational, legal, and perceptual issues. As discussed previously, if vertical evacuation is to be considered as a viable alternative, even on a limited basis, an in-depth analysis of each building and location must be done. Decision-makers must act on the basis of some form of risk/benefit analysis. The risk/benefit analysis will produce the level of risk that is socially acceptable to the individual or governing body, depending upon the extent to which the benefits will outweigh the risks.

In addition to vertical evacuation, for which the benefits of reducing shelter space deficits is uncertain, an additional means to reduce shelter space requirements is to require mobile home parks to build a structure suitable for evacuation in the event of a hurricane. Over 76,000 mobile home residents are required to evacuate in any given storm event. Plan policies address new mobile home parks; however, consideration should be given to requiring existing parks to add shelters.

### **Post-Disaster Redevelopment**

Hillsborough County has an estimated 293,925 individuals (40% of total population) vulnerable to the effects of a worst case hurricane scenario. Therefore, a plan for how to deal with not only the mechanics of redevelopment (how much it costs to repair or replace damage or destroyed structures; what development standards should the redevelopment be required to meet; the post-disaster timetable; etc.) but also the more esoteric issue of whether redevelopment should occur at all, must be prepared.

Hillsborough County's hurricane structural damage projections, as conducted by the Tampa Bay Regional Planning Council in *Tampa Bay Region Hurricane Loss and Contingency Planning Study, 1983*, are set forth as guidance for preliminary hurricane damage assessments. While hurricane damage scenario boundaries referenced in the above report have altered somewhat from existing configurations, the structural loss assessments are still informative for evaluating the possible levels of property damages under varying hurricane intensities in the County.

A high concentration of structural loss has been projected for the coastal high hazard area during a Scenario A (Category 1) hurricane, thereby reflecting the vulnerability of those zones to both overland storm surge and high winds; the remaining zones are only vulnerable to winds in a Category 1 storm. The total projected structural damage for this minimal hurricane scenario in Hillsborough County is approximately \$292 million. A medium strength hurricane (Scenario C) is projected to destroy approximately \$904 million worth of property, two-thirds of which is single-family residential structure damage. The very low probability hurricane Scenario E damage is projected to exceed \$3 billion in structural losses.

Although federal assistance is available to state and local governments in the event that a storm results in a Presidential disaster declaration, a precondition to receiving federal disaster assistance is that state and local governments agree to bear 25% of the total costs to repair or restore the impacted areas to pre-disaster conditions. The availability of this 25% match could be a critical issue depending upon the intensity of the storm.

In accordance with Chapter 129, Florida Statutes, Hillsborough County maintains a reserve for contingency fund that does not exceed 10% of the annual budget, the maximum permitted by law. Funds to meet the 25% match would be drawn from this account in the event of a disaster. The reserve for contingency fund would also be used in the unlikely event that a Presidential disaster declaration is not made. Moreover, if the funds in that account are not adequate to repair or replace public facilities, a reallocation of budgeted funds would occur. In the worst case scenario, when funding sources are depleted, the County would borrow the funds through a tax revenue anticipation note.

An issue closely related to fund availability is: should the infrastructure or facility be repaired or replaced, or should the facility or infrastructure be relocated outside of the coastal high hazard area? A decision-making framework needs to be established by the County in order to determine if the infrastructure or facilities should be relocated, have structural modifications or be replaced. After Hurricane Elena, the Florida Department of Community Affairs, as lead agency, conducted three (3) case studies to evaluate the effectiveness of existing and new State programs in reducing storm damage along the coast. The case studies focused on the feasibility of eliminating, relocating, or structurally modifying public infrastructure which suffered storm damage, and to implement such determinations where feasible. The decision-making format included the following analyses:

- Costs
- Environmental Impacts
- Mitigative Impacts
- Growth Management Consistency
- Impacts on the Public
- Timeliness
- Legal Issues
- Availability of Funds
- Is the infrastructure necessary?

It is a recommendation of this element that the above decision-making format be utilized and/or modified by Hillsborough County. For a detailed description of the decision-making model, refer to *Post-Disaster Hazard Mitigation Plan for the State of Florida, in response to Hurricane Elena and Hurricane Kate, June 1986*.

Once a decision that redevelopment will occur has been made, the standard at which redevelopment will occur must be determined. New construction in the coastal high hazard area must meet more stringent construction standards than did older development. Hillsborough County participates in the National

Flood Insurance Program (NFIP), which requires that communities adopt minimum ordinances and regulations which address hazard mitigation and elevation requirements designed to minimize flood damage associated with hurricanes or other natural disasters. The problem, however, is that damaged structures can be extensively improved without the improved portion being required to meet the minimum standards. Plan policy addresses the redevelopment of damaged structures in the coastal high hazard area.

In 1991, the County initiated a Post Disaster Redevelopment Task Force, which produced a Post Disaster Redevelopment Ordinance, adopted by the Board of County Commissioners in 1993. In 1995 the County, through a grant from the Florida Department of Community Affairs and in conjunction with the Tampa Bay Regional Planning Council, developed the “Model Local government Disaster Mitigation and Redevelopment Regulations” study.

**Public Acquisition:** The primary State land acquisition programs are the Conservation and Recreation Lands (CARL), Land Acquisition Trust Fund (LATF), and Save Our Coast (SOC) programs; however, none of the existing acquisition programs are specifically directed toward post-disaster acquisition. Federal acquisition falls under Section 1362 of the National Flood Insurance Act of 1968, which states that property damaged by a storm or flood event can be purchased with federal money and donated to the local government. However, the local governments in Florida have not utilized Section 1362 acquisition funds, primarily because of an inability to meet the strict eligibility requirements. Hillsborough County does accept the dedication of land in lieu of impact fees; however, the dedication is not restricted to coastal areas.

## **9J-5.012(2)f- Beach and Dune Systems**

### **Existing Conditions**

Beaches and dunes are built through the constant resuspension and deposition of weathered beach material (sand) along the turbulent land-sea interface known as the littoral zone. Beach and dune systems generally constitute the land masses associated with coastal barrier islands, and are thus a product of a high-energy wave environment.

Hillsborough County's one natural coastal barrier island on the Gulf of Mexico is Egmont Key, located at the mouth of Tampa Bay. This 300-acre island is the only coastal dune/strand vegetation in the County, and is an ecological showcase for the barrier island type environment. Egmont Key has been designated as a wildlife refuge by act of Congress (PL 93-341). As part of the National Wildlife Refuge System, Egmont Key is under federal jurisdiction (U. S. Coast Guard and U. S. Fish and Wildlife Service) which discourages any intensive recreational use.

The remainder of the Hillsborough County shoreline occurs along the low-energy waters of the Tampa Bay estuary. Although sandy beach formations can naturally develop along the more windward shorelines of bays and estuaries, their formation in Tampa Bay is relatively minor and limited due to

the Bay's shallow depth. Consequently, no natural estuarine beaches of significance occur in Hillsborough County. There are, however, five major man-made and maintained sandy beaches in Hillsborough County and the City of Tampa, including three public and two private beaches.

The southern-most public beach in the unincorporated County is at E. G. Simmons Park, north of Ruskin. Apollo Beach, north of Ruskin, is the largest private beach in the unincorporated County. Bahia Beach, north of the mouth of the Little Manatee River, is a spoil deposition beach with an associated motel and residential area.

In addition to the beach areas above, several small and large dredged spoil islands in lower Hillsborough Bay and Old Tampa Bay are exposed to significant wave action and have thus developed beachfronts, which are used extensively by boaters as anchorages and for picnicking. However, none of these islands are currently maintained as either public or private recreational areas.

### **Areas Subject to Erosion/Accretion**

As stated above, most of the sandy beach areas in Hillsborough County face low-energy wave regimes typical of estuaries. Therefore, rapid erosion of beach and dune systems is not a significant problem in the County.

Some of the man-made beach areas in the County are, however, subject to localized erosion problems. E. G. Simmons Park beach is subject to significant wave action, especially during winter months, when passing storm fronts approach from the northwest. In addition, the two prominent dredge spoil disposal islands, 2-D and 3-D, located in lower Hillsborough Bay have experienced considerable erosion along their western shorelines, due primarily to wave energy generated from passing ship traffic. There are no areas of significant sand accretion in Hillsborough County tidal waters.

### **Beach and Dune Protective Measures**

Beach and dune systems are naturally in a state of dynamic equilibrium. The stability of these systems is often critically dependent upon the associated vegetative communities, which trap and bind sand particles with their root network. In addition, the stability of natural beach and dune systems is maintained by a constant source of sand, which is transported to and from the system by longshore currents. Although man-made structures (e.g. groins, jetties and breakwaters) may provide effective localized erosion protection and accretion, they often do so by disrupting the natural longshore flow of sand, thus causing reactive erosion problems downstream.

Man-made estuarine beaches, due to their low-energy environment, often do not have a natural source of sand to supplement erosion losses. Therefore, without either vegetative or structural stabilization, they are often subject to slow, regular erosion. Where feasible, beach and dune systems should be stabilized by enhancing natural vegetative communities.

Establishing new vegetative communities or supplementing existing growth may be feasible for several Hillsborough County beaches. Dune plantings would most likely benefit Apollo Beach, E. G. Simmons Park and possibly Bahia Beach. Egmont Key, although currently possessing stable dune vegetation, would benefit from additional plantings, especially around areas of heaviest recreational use.

The erosion problems occurring on dredge spoil islands, especially 2-D and 3-D, have been analyzed by the Tampa Port Authority. Due to the slope and composition of the beachfront, as well as the adjacent deep water, it has been concluded that rock and/or concrete rip-rap would provide the most effective erosion control.

### **9J-5.012(2)g-Public Access**

Public access includes boat ramps, fishing piers, beaches, and regional, district, neighborhood, and special parks.

Public access to the coastal area, either through publicly-owned property or dedicated private easements, is an issue that is becoming increasingly sensitive as the pressure to develop coastal areas intensifies. Because 94 percent of the County's coastal area is in private ownership, those areas in public holdings should not be lost through sale, vacation or transfer. Moreover, existing public access locations should be enhanced to more completely take advantage of the limited resource.

See the Public Access Map for an inventory of existing public access facilities including beach areas, fishing piers, boat ramps, and parks. This inventory has been coordinated with the Recreation and Open Space Element. The Recreation and Open Space Element should be referred to for more detailed information with respect to parks and recreation facilities.

Unincorporated Hillsborough County has only one public beach area, E. G. Simmons Park; the remainder of the coastal shoreline areas contain mangroves, making those areas inaccessible to the public. Any development, whether public or private, shall be done in accordance with applicable environmental regulations.

Beach utilization and access problems are most acute in the growing coastal urban areas along Tampa Bay, where competition for use of coastal areas is greatest. A potential area of concern is the coastal area fronting on Hillsborough Bay; fortunately, growth pressures in this area are not as acute as those on other portions of Tampa Bay, and the County can have some control over future development.

As population increases, so does the demand for public access, while at the same time, the amount of available waterfront land for public use decreases. Since the amount of coastal shoreline suitable for public access is limited in unincorporated Hillsborough County and the provision of recreational facilities

is a County-wide concern, not merely restricted to the individual units of government, Hillsborough County should continue to coordinate with the Cities of Tampa, Temple Terrace and Plant City to provide adequate public access in the coastal area for all County residents.

### **9J-5.012(2)h-Coastal Public Infrastructure**

Public infrastructure located in the coastal planning area is subject to hazards and damage that inland facilities do not experience. The following inventory and analysis summarizes the existing and projected infrastructure located within the coastal planning area and includes: roadways, bridges and causeways; sanitary sewer facilities; potable water facilities; and shoreline protection structures. In addition, although it is a for-profit utility, electric generating facilities and substations are inventoried and the potential loss of service analyzed.

**Roadways, Bridges, and Causeways:** Generally, level of service (LOS) "D" is used by Hillsborough County as the acceptable traffic operation standard. LOS D represents high-density, but stable flow with speed selection and maneuverability severely restricted; substantial delays and significant decreases in operating speed resulting from small increases in flow.

All evacuation routes located in the CHHA are currently operating at an acceptable LOS. However, based on the MPO 2025 Cost Affordable Long Range Transportation Plan (LRTP), parts of US Hwy 41 (Cockroach Bay Rd to 19<sup>th</sup> Ave NE and Apollo Beach Blvd to Riverview Drive) and Hillsborough Avenue / SR 580 (Double Branch Road to Memorial Hwy) will fall to an unacceptable LOS.

Further, planned improvements on parts of US Hwy 41 (Riverview Drive to Madison Ave) and Causeway Blvd (Maritime Blvd to 50<sup>th</sup> Street) identified in the LRTP presumably prevent these roadways from falling to unacceptable levels of service by the year 2025.

In addition, the bridge approaches at U. S. 41/Alafia River and U. S. 41/Little Manatee River have been identified as critical evacuation route points that are susceptible to flooding.

**Wastewater Treatment Facilities:** Unincorporated Hillsborough County does not have any wastewater treatment facilities located in the coastal planning area. However, the City of Tampa's Hookers Point Advanced Wastewater Treatment Plant, serving both County (approximately 12 percent of capacity is to unincorporated County) and City residents, is located in the CHHA. Hookers Point is projected for potential service disruption of two (2) days for a minimal hurricane scenario (Category 1) to fifteen (15) days for a medium scenario (Category 3).

**Potable Water Facilities:** Unincorporated Hillsborough County has three (3) potable water facilities located in the coastal high hazard area. All three facilities are located in the Apollo Beach area: a pump station and two (2) elevated storage tanks. None of these potable water facilities are projected to

experience service disruption from structural damage under a Category 1 storm; however, under a Category 2 storm, the pump station and the Gibsonton elevated storage tank are projected for a five (5) and twelve (12) day service disruption, respectively.

**Electrical Utility Facilities:** Unincorporated Hillsborough County has two (2) electrical plants (Gannon and Big Bend) and several substations located within the coastal planning area. All of these facilities are owned and operated by Tampa Electric Company (TECO). Of these facilities, only the Gannon Plant is projected for service disruption (2 days) in the event of a Category 1 storm. In a Category 2 storm the Big Bend Plant and 15 of the County's total 114 substations are projected to experience disruption of up to 5 days. Moreover, in a Category 3 storm all three electrical plants (Hookers Point, Gannon and Big Bend) and 18 substations would experience service disruption, most for up to fifteen (15) days.

**Shoreline Protection Structures:** Seawalls are the primary man-made coastal protection structures in the County. The remainder of the shoreline in the coastal planning area is comprised of beaches and naturally-vegetated areas. To date, a comprehensive inventory of seawalls has not been completed for the County. Routine maintenance and redevelopment are accorded to both private interests and the County. It is recommended that repairs and reconstruction of any seawalls should be consistent with the standards required under Chapter 61B-33, Rules and Procedures for Coastal Construction and Excavation (FDEP, Division of Beaches and Shores).

## VII. Support Document Summaries

*Hillsborough County Local Mitigation Strategy (LMS), 1999*

Environmental Protection Commission, *Surface Water Quality 1998-2000*.

Tampa Bay National Estuary Program, *Charting the Course for Tampa Bay (draft)*, January, 1996.

TBRPC, *Tampa Bay Region Hurricane Evacuation Study, 2000*.

*Hillsborough County Comprehensive Emergency Management Plan, 2001*

This publication, conveys the County's comprehensive emergency plan and identifies the county's emergency management operations.

## **I. EXECUTIVE SUMMARY**

Historically, local comprehensive coastal planning in Florida has largely been pre-empted by site-specific state and local land development and regulatory decisions. This piece-meal, site-by-site approach to coastal development, in concert with the often vague and generalized coastal protection concepts outlined in state and local planning documents, did not generally provide communities with a comprehensive coastal management strategy. Hillsborough County's approach to coastal management has been similar to that taken throughout the State. In fact, because Hillsborough County is not located on the Gulf of Mexico and lacks the sandy beaches of the Gulf, past development and land use decisions in coastal areas have not taken full advantage of the unique coastal resources. Subsequently, many residents and visitors alike do not consider Hillsborough County a coastal area.

In realization that Florida's coastal areas need long range comprehensive planning and conservation in order to preserve their truly unique character, the 1985 Florida Legislature adopted revisions to Chapter 163 and required each local government identified as a coastal city or county to include a coastal management element in its updated comprehensive plan. The specific language adopted by the 1985 Legislature provides clear policy direction:

..it is the intent of the Legislature that local government comprehensive plans restrict development activities where such activities would damage or destroy coastal resources and that such plans protect human life and limit public expenditures in areas that are subject to destruction by natural disaster (s.s. 163.3178-1).

### **A. PURPOSE OF AND NEED FOR THE COASTAL MANAGEMENT ELEMENT**

The Coastal Management Element was prepared pursuant to the mandate of Chapter 163, Florida Statutes, as amended by the Local Government Comprehensive Planning and Land Development Regulation Act of 1985. This Act requires the development of a comprehensive plan by each local government in the State of Florida. Chapter 163 is further defined by Rule 9J-5, Florida Administrative Code, which establishes the minimum criteria for this element and for each element of the comprehensive plan. Specifically, the Coastal Management Element is intended to meet the requirement of Chapter 9J-5.02, Florida Administrative Code.

The purpose of this Coastal Management Element is to provide a plan and policy direction for development activities in the coastal planning area. This plan and policy direction includes restrictions on development activities where such activities would damage or destroy coastal resources, protection of human life, and limitations on public expenditures in areas subject to destruction by natural disaster. The objectives of this element are to ensure that development in the coastal area does not prohibit public accessibility to the coast, that human life is not endangered, that adequate public hurricane shelter space is available to coastal inhabitants, that levels of service on coastal

evacuation routes do not deteriorate, such that safe and timely evacuation is adversely impacted, that water-dependent and water-related land uses are given priority, that public expenditures do not encourage growth in coastal high hazard areas, and that public decisions will include consideration of coastal hazards in each land use and public infrastructure decision-making process.

## **B. DEFINITION OF COASTAL PLANNING AREA**

The coastal planning area includes the coastal waters and adjacent shorelines that are strongly influenced by one another. The coastal planning area extends inland from the shoreline only to the extent necessary to control shorelands, the uses of which have a direct and significant impact on the coastal waters. The coastal planning area consists of two parts: the coastal high hazard area (CHHA) and the remaining land area with an evacuation designation.

For mapping purposes, the coastal planning area is that area proposed for evacuation on the most current evacuation map.

## **C. ELEMENT ORGANIZATION**

The Coastal Management Element is comprised of three integral parts including the Inventory and Analysis; Goals, Objectives and Policies; and the Plan Implementation sections. The Inventory and Analysis section presents historic and current conditions upon which to base the recommended planning and management strategies. The Goals, Objectives and Policies section presents the recommended planning guidelines, programs and other operative provisions which are intended to drive private and governmental decisions regarding natural resources. Finally, the Plan Implementation section recommends strategies for implementing the goals, objectives and policies of the Coastal Management Element.

## II. DEFINITIONS

**Advanced Wastewater Treatment** - As defined in Chapter 403.086, Florida Statutes, or as amended in the future.

**Adverse Impact (upon a natural resource)** - Direct contamination, alteration or destruction, or that which contributes to the contamination, alteration or destruction of a natural resource, or portion thereof, to the degree that its environmental benefits are, or will be, eliminated, reduced, or impaired.

**Aquatic Preserve** - Submerged lands owned or leased by the State of Florida as identified in Chapter 258, Florida Statutes, that have been set aside in an essentially natural or existing condition for the benefit of future generations.

**Beach** - The zone of unconsolidated material that extends landward from the mean low water line to the place where there is marked change in material or physiographic form, or to the line of permanent vegetation, usually the effective limit of storm waves. "Beach", as used in the Coastal Management and Port Element (CME) requirements, is limited to oceanic and estuarine shorelines.

**Best Management Practice (BMP)** - Method or combination of methods determined after problem assessment, examination of alternative practices, and appropriate public participation, to be the most effective and practicable means of reducing or preventing non-point source pollution to levels compatible with water quality goals. These measures could include both structural (e.g., sediment/debris basins, wetland impoundment of agricultural runoff, etc.) and non-structural (e.g., street vacuuming, deferred grazing systems, etc.) approaches to abatement of non-point source pollution, and would vary on a regional and local basis depending on the nature of the problems, climate, physical characteristics, land use, soil types and conditions and other factors.

**Class II Waters** - Shellfish propagation or harvesting water as classified and specified in Chapter 17-3, Florida Administrative Code.

**Coastal Planning Area** - Those portions of Hillsborough County that lie within the Hurricane Vulnerability Zone (All Evacuation Zones). This area shall also include water and submerged lands of oceanic water bodies or estuarine water bodies; shorelines adjacent to such water bodies; coastal barriers; living marine resources; marine wetlands; water-dependent or water-related facilities on oceanic or estuarine waters, public access facilities to oceanic beaches or estuarine shorelines; and all lands adjacent to such occurrences where development activities would impact the integrity of the above-mentioned land or water body.

**Coastal High Hazard Area** - The area below the elevation of the category 1 storm surge line as established by the Tampa Bay Regional Planning Council utilizing the Sea, Lake and Overland Surges from Hurricanes (SLOSH) computerized storm surge model.

**Conservation Areas** - Environmentally sensitive areas that include the following:

- Natural shorelines (other than those included in preservation areas);
- Class III Waters;
- Freshwater marshes and wet prairies;
- Hardwood swamps;
- Cypress swamps;
- Significant wildlife habitat.

**Conservation Uses** - Activities within land areas designated for the purpose of conserving or protecting natural resources or environmental quality and includes areas designated for such purposes as natural flood control, protection of quality or quantity of groundwater or surface water, floodplain management, fisheries management, or protection of natural vegetative communities or wildlife habitats.

**Development** - The construction, reconstruction, conversion, structural alteration, relocation or enlargement of any structure; any mining, excavation, landfill or land disturbance, and any nonagricultural use or extension of the use of land. Includes redevelopment.

**Drainage Basin** - The area defined by topographic boundaries that contributes stormwater to a drainage system, estuarine waters, or oceanic waters, including all areas artificially added to the basin.

**Dredge and Fill** - The process of excavation or deposition of ground materials by any means, in local, State or regional jurisdictional waters (including wetlands), or the excavation or deposition of ground materials so as to create an artificial waterway which is to be connected to jurisdictional waters or wetlands (excluding stormwater treatment facilities).

**Environmentally Sensitive Areas** - Lands that, by virtue of some qualifying environmental characteristic (e.g. wildlife habitat) are regulated by either the Florida Department of Environmental Protection (FDEP), the Southwest Florida Water Management District (SWFWMD), or any other governmental agency empowered by law for such regulation. These include Conservation and Preservation Areas as defined in the Conservation and Aquifer Recharge Element (CARE) and the Coastal Management and Port Element (CME).

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

**Historic Resources** - All areas, districts or sites containing properties listed on the Florida Master Site File, the National Register or Historic Places, or designated by a local government as historically, architecturally, or archaeologically significant.

**Hurricane Evacuation Clearance** - The amount of time specified in the Tampa Bay Regional Planning Council (TBRPC) Hurricane Evacuation Study and reflected in the County Comprehensive Emergency Management Plan for the safe evacuation of hurricane vulnerable areas.

**Hurricane Evacuation Routes** - The routes designated by County emergency management officials that have been identified with standardized state-wide directional signs by the Florida Department of Transportation (FDOT), or are identified in the regional hurricane evacuation study for the movement of persons to safety in the event of a hurricane.

**Hurricane Shelter** - A structure designed or approved by local emergency management officials as a place for shelter during a hurricane event.

**Hurricane Shelter Space** - At a minimum, an area of twenty square feet per person located within a hurricane shelter.

**Hurricane Vulnerability Zone** - The areas delineated by a regional hurricane evacuation study as requiring evacuation in the event of a 100-year or category five hurricane event.

**Local Comprehensive Emergency Management Plan (CEMP)** - The plan developed by Hillsborough County according to the provisions of Rule 9G-6, Florida Administrative Code, under the authority provided in Section 252.35, Florida Statutes.

**Level of Service (LOS)** - An indicator of extent or degree of service which is, or will be, provided by a facility. Level of Service standards, as used in this comprehensive plan, are targets or objectives with which compliance is required. Levels of Service are established using one or more infrastructure standards and may also include use of one or more performance standards.

**Manatee Protection Plan** - Guidelines for the protection of the West Indian Manatee formulated by the Florida Department of Environmental Protection (FDEP).

**Marina** - An establishment with a waterfront location for the dockage of watercraft in wet slips, and/or for the refueling of watercraft used primarily for recreation, and providing minor repair services for such craft. A marina may include on-shore accessory service uses, including food service establishment, laundry or sanitary facilities, sundries store and other customary accessory facilities such as boat livery.

**Marine Habitat** - Areas where living marine resources naturally occur, such as mangroves, seagrass beds, algal beds, salt marshes, transitional wetlands, marine wetlands, rocky shore communities, hard bottom communities, oyster beds or flats, mud flats, coral reefs, worm reefs, artificial reefs, offshore flats, coral reefs, worm reefs, artificial reefs, offshore springs, nearshore mineral deposits and offshore sand deposits.

**Marine Estuarine Wetlands** - Areas with a water regime determined primarily by tides and where the dominant vegetation is salt tolerant plant species, including those species listed in Chapter 62-4.02, Florida Administrative Code, "Submerged Marine Species."

**Mitigation** - The abatement or diminution of adverse environmental impacts through corrective action after the impacts have occurred (e. g. compensation, restoration, replacement of ecological value and function, etc.), or through an avoidance or minimizing of impacts prior to occurrence.

**Natural Plant Communities** - Naturally occurring stands of native plant associations exhibiting minimal signs of anthropogenic disturbance. Specific community types can be identified by characteristic dominant plant species composition. Community types found in Hillsborough County include pine flatwoods, dry prairie, sand pine scrub, sandhill, xeric hammock, mesic hammock, hardwood swamp, cypress swamp, freshwater marsh, wet prairie, coastal marsh, mangrove swamp, coastal strand and marine grassbeds. Descriptions of these community types are provided in the Inventory and Analysis section of the Conservation and Aquifer Recharge Element (CARE).

**Natural Preserve** - Areas designated for conservation purposes and operated by contractual agreement with, or managed by a federal, state, regional or local government or non-profit agency, such as: national parks, state parks, County parks, lands purchased under the Save Our Coast, Conservation and Recreation Lands, Save Our Rivers, or Environmental Lands Acquisition and Protection Programs (ELAPP), sanctuaries, preserves, monuments, archaeological sites, historic sites, wildlife management areas, national seashores and Outstanding Florida Waters.

Natural Shorelines - Coastal areas which have not been physically altered through hardening or bulkheading (other than those included in preservation areas), Class III Waters, Freshwater marshes and wet prairies , Sand pine scrub, Hardwood swaps, Cypress swamps, and Significant wildlife habitat.

**Natural Streamcourses** - Perennial streams which have not been physically altered through, bulkheading, or hardening.

**Non-point Source Pollution** - Water pollution that is not point source pollution, as defined herein.

**Outstanding Florida Waters (OFWs)** - Surface waters which have been deemed to be worthy of special protection as identified in Section 17-3.041, Florida Administrative Code.

**Overriding Public Interest** - Actions required by local, state, or federal government, necessary for the promotion of public safety, health or general welfare.

**Performance Standard** - A target or objective which defines or qualifies the desired or required state of operation.

**Point Source Discharge** - Release of degraded water through a discernible, confined or discrete conveyance, including but not limited to pipes, ditches, channels, tunnels, conduits or wells. This term does not include return flows from irrigated agriculture.

**Point Source Pollution** - Water pollution which has as its source a discernible, confined or discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal enclosure.

**Pollution** - The presence in the outdoor atmosphere, ground or water, of any substances, contaminants, noise or man-made or man-induced alteration of the chemical, physical, biological, or radiological integrity of air or water, in quantities or at levels which are or may be potentially harmful or injurious to human health or welfare, animal or plant life, or property, or which does or may unreasonably interfere with the enjoyment of life or property.

**Port Facility** - Harbor or shipping improvements used predominantly for commercial purposes, including channels, turning basins, jetties, breakwaters, landings, wharves, docks, markets, structures, buildings, piers, storage facilities, plazas, anchorages, utilities, bridges, tunnels, roads, causeways and all other property or facilities necessary or useful in connection with commercial shipping.

**Preservation Areas** - Environmentally sensitive areas that include the following:

- Aquatic preserves;
- Essential wildlife habitat;
- Class I and II Waters;
- Marine grassbeds;
- Coastal strand;
- Coastal marshes;
- Mangrove swamps ; and
- State wilderness areas.

**Primary Tributaries** - Water bodies shown on the most recent U. S. Geological Survey (USGS) quadrangle sheets as having perennial flow which eventually drain into any permanent open water body.

**Public Access** - The ability of the public to physically reach, enter or use recreation sites including beaches and shores.

**Receiving Waters** - The surface water body into which point source discharge enters after appropriate water quality treatment.

**Regional Wastewater Treatment Plants** - Large wastewater treatment plants (generally 5 MGD or greater capacity) with the permitted capacity for significant future expansion and higher levels of treatment (AWT).

**Resource Protection Areas** - Land or water bodies that are ecologically or economically significant natural resources for which special protective measures have been, or need to be established. Resource Protection Areas include the following:

- Hillsborough River 100-year floodplain and major tributaries;
- Alafia River 100-year floodplain and major tributaries;
- Little Manatee River 100-year floodplain and major tributaries;
- Tampa Bay and associated tidal wetlands;
- Cockroach Bay Aquatic Preserve;
- Lake Thonotosassa;
- Significant and essential wildlife habitat;
- Areas of high aquifer recharge/contamination potential;
- Public potable water wellfields and their cones of influence; and
- Areas of major phosphate deposits.

**Saffir/Simpson Hurricane Scale** - Describes the degree of hazard and damage potential generally associated with the full range of hurricane intensities. The following describes the five categories of storms accepted for the Gulf and Atlantic coasts.

**Category 1** - Winds of 74 to 95 miles per hour. Damage primarily to shrubbery, trees, foliage and un-anchored mobile homes. No real damage to other structures. Some damage to poorly constructed signs. Storm surge 6 to 8 feet above normal. Low-lying coastal roads inundated, minor pier damage, some small craft in exposed anchorage torn from moorings.

**Category 2** - Winds of 96 to 100 miles per hour. Considerable wind damage to shrubbery and tree foliage, some trees blown down. Major damage to exposed mobile homes. Extensive damage to poorly constructed signs. Some damage to roofing materials of buildings; some window and door damage. No major damage to inland buildings. Considerable damage to piers, marinas and small craft in unprotected anchorage. Storm surge 9 to 11 feet above normal, damage and flooding as described in Category 1.

**Category 3** - Winds of 111 to 130 miles per hour. Foliage torn from trees, large trees blown down. Practically all poorly constructed signs blown down. Some damage to roofing material of buildings; some window and door damage. Some structural damage to small buildings. Mobile homes destroyed. Storm surge 12 to 18 feet above normal. Serious flooding along the coast, with larger structures being damaged and small structures destroyed by waves and floating debris.

**Category 4** - Winds of 131 to 155 miles per hour. Shrubs and trees blown down. All signs blown down. Extensive damage to roofing materials, windows and doors. Complete failure of roofs on many small residences. Complete destruction of mobile homes. Storm surge 18 to 22 feet above normal. Major damage to lower floors of structures near the coast due to flooding, waves and floating debris.

**Category 5** - Winds greater than 155 miles per hour. Shrubs and trees blown down, considerable damage to roofs of buildings; all signs down. Very severe and extensive damage to windows and doors. Some complete building failures. Small buildings overturned or blown away. Complete destruction of mobile homes. Storm surge greater than 22 feet above normal. Major damage to lower floors of all structures less than 15 feet above sea level within 500 yards of shore.

**Saltwater Intrusion** - Inward or upward movement of saline water within a surface or groundwater aquifer system.

**Shellfish Harvesting Area** - Coastal waters classified by the Florida Department of Environmental Protection (FDEP) for the harvesting of shellfish. Classifications are based on bacteriological and sanitary surveys that define levels of bacteriological pollution and document all possible sources of pollution, both actual and potential. Waters are classified as follows pursuant to Section 16-B28.009, Florida Administrative Code:

**Approved** - Normally open to shellfish harvesting; may be temporarily closed under extraordinary circumstances (e.g., red tides, hurricanes, sewage spills).

**Conditionally Approved** - Periodically closed to shellfish harvesting based on predictable pollution events.

**Published** - Shellfish harvesting is not permitted due to actual or potential pollution.

**Unclassified** - Shellfish harvesting is not permitted pending bacteriological and sanitary surveys.

**Shoreline** - Interface of land and water in oceanic and estuarine conditions which follows the general configuration of the mean high water line (tidal water) and the ordinary high water mark (fresh water).

**State Water Quality Standards** - Numerical and narrative standards that limit the amount of pollutants that are allowed in Waters of the State, as defined by Chapter 17-3, Florida Administrative Code.

**Stormwater Runoff** - That portion of precipitation that is not passed into the soil by infiltration, evaporated into the atmosphere, or entrapped by small surface depressions and vegetation, and that flows over the land surface during, and for a short duration following, any rainfall.

**Stormwater Treatment Facility** - A structural best management practice (BMP) designed to reduce pollutant loadings to receiving waters by physically reducing the volume of stormwater discharge. Structural BMPs include, but are not limited to, detention ponds, retention systems, open bottom inlets, undercut ditches, and swales.

**Water-Dependent Uses** - Activities that can be carried out only on, in or adjacent to water areas because the use requires access to the water body for: waterborne transportation including ports or marinas; recreation; electrical generating facilities; or water supply.

Water Enhanced - Activities that may derive economic or aesthetic benefit by its proximity to a water body.

**Water-Independent Uses** - Activity including, but not limited to, intense urban residential, industrial and commercial uses that could function just as well inland as in a coastal location.

**Water-Related Uses** - Activities that are not directly dependent upon access to a water body but that provide goods and services that are directly associated with water-dependent or waterway uses.

**Wetlands** - Lands that are transitional between terrestrial (upland) and aquatic (open water) systems where the water table is usually at or near the surface, or where the land is covered by shallow water, and such lands are predominantly characterized by hydrophytic vegetation. The presence of hydric soils as determined by the U. S. Soil Conservation Service (SCS), and other indicators of regular or periodic inundation, shall be used as evidence of the presence of a wetland area. The existence and extent of these shall be determined by the jurisdictional limits defined by Chapter 62-340, Florida Administrative Code, and implemented by the Florida Department of Environmental Protection (FDEP), or as defined within Chapter 40D-4 Florida Administrative Code and implemented by the Southwest Florida Water Management District (SWFWMD), or as defined within the Wetlands Rule, Ch. 1-11 and implemented by the Environmental Protection Commission of Hillsborough County (EPC).

### **III. GOALS, OBJECTIVES, AND POLICIES**

**Goal 1:** Hillsborough County shall preserve, protect, restore, and appropriately manage the natural resources of the coastal area to maintain or enhance environmental quality for present and future generations. To this end, Hillsborough County shall restrict development that would damage or destroy the natural resources of the coastal area.

#### **Coastal Resources Protection And Management**

##### **Estuarine Management**

**Issue:** The entire shoreline of Hillsborough County borders on the Tampa Bay estuary. Tampa Bay is the largest open water estuary in Florida with over 1.6 million people living in the three counties bordering its shores. Tampa Bay was once one of the nation's most biologically productive and diverse estuaries. However, piecemeal urbanization around and within the Bay over the last 150 years has resulted in wide-spread environmental degradation. Over the past 30 years, numerous studies have documented the deterioration of water quality and habitat values of the estuary. Studies have indicated that 44 percent of the original 25,000 acres of mangrove forests and salt marshes have been destroyed, and 81 percent of the original 76,500 acres of seagrasses have disappeared. Recent estimates (2005) of wetland habitat in Tampa Bay indicate that there are about 20,000 acres of mangrove forests and saltmarsh. This habitat loss has resulted in declining populations of economically important fish and shellfish, including a complete collapse of such fisheries as those for scallops and oysters, and major declines for bait shrimp, spotted seatrout and redfish.

The environmental deterioration of Tampa Bay can be attributed to the cumulative effects of numerous perturbations, including: direct habitat destruction from dredging and filling and the hardening of shorelines for coastal development; degradation of water quality and eutrophication resulting from the discharge of municipal and industrial effluents and stormwater runoff; and the reduction of natural freshwater inputs due to the impoundment and withdrawals from rivers and streams.

A comprehensive, coordinated and holistic management approach is needed to ensure the protection and restoration of the environmental values of the Tampa Bay estuary. In an effort to develop a mechanism to bring about such management to Tampa Bay and other surface waters throughout the state, the 1987 Florida Legislature adopted the Surface Water Improvement and Management (SWIM) Act of 1987. This Act is implemented locally by the Southwest Florida Water Management District (SWFWMD), which has jurisdiction over Tampa Bay and Hillsborough County. Tampa Bay was named in both the Act and in Southwest Florida Water Management District's management plan as the number one priority for restoration and preservation within the District. Hillsborough County's Coastal Management and Port Element recognizes the spirit of cooperation and compliance with Southwest Florida Water Management District's Tampa Bay Surface Water Improvement and Management Plan.

As a result of local sponsorship by the Agency on Bay Management, Congress designated Tampa Bay eligible to participate in the National Estuary Program. Designation of the Tampa Bay Estuary Program (TBEP) authorized the U.S. Environmental Protection Agency (EPA) to begin a multi-year process that ultimately lead to development and implementation of a Comprehensive Conservation and Management Plan (CCMP) for Tampa Bay. The CCMP process involves working with all levels of government to identify problems and constraints, and opportunities and solutions, for the management of Tampa Bay as this area's most significant natural resource. The process is designed to coordinate the long-range growth management plans, permitting decisions, and expenditure of funds of all levels of government around the Bay, ultimately toward the maintenance and restoration of Tampa Bay's living resources to historic levels. The CCMP was adopted by all governments around the Bay and implemented by local governments and federal, state, regional, and local environmental planning and permitting agencies.

One of the most pristine and biologically productive areas remaining in Tampa Bay is the Cockroach Bay Aquatic Preserve, located in south Hillsborough County near Ruskin. The preserve includes submerged lands of the Little Manatee River from U.S. 301 down river and along Tampa Bay south to the Manatee County line. Cockroach Bay and Little Cockroach Bay are both included in the preserve. In 1987, the Governor and Cabinet approved the Cockroach Bay Aquatic Preserve Management Plan. Implemented by the Department of Natural Resources, this plan sets forth management guidelines for protecting the aquatic preserve in essentially its natural condition. Successful implementation of this plan depends upon the cooperation of Hillsborough County.

Objectives and Policies addressing Cockroach Bay Aquatic Preserve are contained in the "Special Uses" section of the Future Land Use Element of the *Plan*. Other objectives and policies addressing estuarine management are found in the Conservation and Aquifer Recharge, Potable Water, Stormwater Management and Sanitary Sewerage Elements.

**Objective 1:** The County shall continue to ensure that all discharges to natural surface water bodies in the Tampa Bay watershed shall comply with state water quality standards for their designated use.

**Policy 1.1:**

The County shall not support the reclassification of any surface waters of Tampa Bay within County boundaries to acknowledge lower water quality conditions that cannot be improved, unless necessary to protect the public health, safety or welfare. The County shall however, support the reclassification of surface waters of Tampa Bay to accommodate higher standards, where it can be demonstrated that improved water quality conditions will prevail in the future.

**Policy 1.2:**

The County shall require that the surface water discharge from all domestic wastewater treatment plants discharging effluent into Tampa Bay or its tributaries meet advanced wastewater treatment standards, or, if specific

alternative criteria developed by the Surface Water Improvement and Management Program can only be met by removing a surface water discharge, such a program shall be implemented where economically feasible and in accordance with Policy 1.4 below.

**Policy 1.3:**

To reduce the need for interim wastewater treatment plants, the County shall plan for the construction of regional wastewater treatment facilities to serve areas designated for urban densities on the Future Land Use Plan Map.

**Policy 1.4:**

The County shall continue to develop and use environmentally-acceptable effluent disposal alternatives to surface water discharge into Tampa Bay and its tributaries, including but not limited to reuse for irrigation and industrial purposes.

**Policy 1.5:**

The County shall cooperate with the appropriate regulatory agencies in requiring that developments identified as sources of water pollution establish and implement water quality management plans that eliminate or improve discharges into Tampa Bay (e.g., municipal and industrial point sources).

**Policy 1.6:**

Where economically feasible, the County shall provide improved domestic wastewater treatment service to coastal areas where persistent water quality problems are clearly attributable to poorly functioning septic treatment systems.

**Policy 1.7:**

The County shall cooperate with the regulatory agencies responsible for developing a nutrient monitoring and control program for those land uses located adjacent to Tampa Bay and its tributaries that are likely to contribute significant nutrient loadings. At a minimum, the program shall require the implementation of Best Management Practices (BMPs) for controlling nutrient loadings, including retrofitting if needed, to meet specific alternative criteria as established by the Surface Water Improvement Management (SWIM) Program.

**Policy 1.8:**

The County shall continue to participate in a public education program aimed at residential homeowners that addresses the impacts of improperly managed lawn litter and fertilizer/herbicide/pesticide applications on the surface water quality of Tampa Bay.

**Policy 1.9:**

The County shall require that existing developments planned for expansion, modification or replacement in the coastal area provide or support stormwater treatment improvements within the affected drainage basin where treatment facilities are lacking. Where economically and

environmentally feasible, the County shall require retrofitting of stormwater treatment facilities in urbanized coastal areas lacking such facilities.

**Policy 1.10:**

Where economically and environmentally feasible and consistent with the Surface Water Improvement and Management (SWIM) Plan for Tampa Bay, the County shall consider the dredging and removal of polluted estuarine sediments, clean filling deep-dredged areas, and other means of improving adjacent estuarine water quality.

**Policy 1.11:**

Hillsborough County shall develop, update and implement its approved Action Plans, and any amendments thereof, pursuant to the Tampa Bay Estuary Program (TBEP) inter-local agreement dated February 1998, and consistent with the applicable goals of the Comprehensive Conservation and Management Plan (CCMP) for Tampa Bay.

**Objective 2:** There shall continue to be no net loss of ecological value of wetlands authorized in the coastal area of Hillsborough County. The County shall continue to seek to achieve a measurable annual increase in restored tidal wetland acreage through the continued restoration of degraded natural wetlands until all economically and environmentally feasible tidal wetland restoration is accomplished.

**Policy 2.1:**

The County shall, through the land use planning and development review processes, and in cooperation with the Environmental Protection Commission, continue to conserve and protect tidal wetlands from detrimental physical and hydrological alteration and prohibit unmitigated encroachment into tidal wetlands.

**Policy 2.2:**

Channelization or hardening of natural coastal shorelines and tidal creeks shall be prohibited except in cases of overriding public interest.

**Policy 2.3:**

Where the maintenance and or alteration of existing hardened shoreline is allowed, the County may require mitigation of environmental impacts. Such mitigation may include, but is not restricted to, the installation of rip-rap.

**Policy 2.4:**

The County shall continue to request the appropriate regulatory agencies to implement Policy 2.2 in cases where its implementation would be more stringent than enforcement of these agencies' regulations.

**Policy 2.5:**

The County shall support development of a unified and coordinated wetland compensatory mitigation and restoration program by federal, state and local environmental regulatory agencies that will not weaken local regulatory authority, will ensure replacement of ecological value and function, and will

require restoration of tidal wetlands, where environmentally and economically feasible.

**Policy 2.6:**

The County shall cooperate with the Southwest Florida Water Management District to ensure that the minimum freshwater flows needed to support natural optimal diversity and productivity in estuarine areas are scientifically determined and maintained.

**Policy 2.7:**

The County shall prohibit unmitigated development activities on submerged lands containing significant seagrass habitat, and shall seek to restore seagrass coverage.

**Policy 2.8:**

The County shall require land developments located adjacent to coastal wetlands to preserve those portions of native upland plant communities necessary to provide an effective buffer for coastal wetlands.

**Policy 2.9:**

The County shall cooperate with the Tampa Port Authority (TPA) to restrict dredge and fill operations within the coastal area to activities that facilitate the continued use of existing channels, activities associated with appropriate water-dependent uses, water-related uses, and uses pursuant to the Port Master Plan, and activities that correct environmental problems. The County shall support and recommend the following: TPA policy actions:

- Prohibit the dredging or spoiling of bay bottom containing significant seagrass habitat, except in cases of overriding public interest. Habitat restoration/creation, if shown to be intrinsically worthwhile and not primarily justified as a means of spoil disposal, and environmentally-acceptable maintenance dredging of existing channels shall be encouraged.
- Establish a procedure for coordinating the long-term plans of the Tampa Port Authority and other governmental agencies for disposal and management of dredged material so as to minimize adverse environmental and social impacts while maintaining a viable maritime industry in the region. This plan should encompass a period of not less than 25 years, giving equal consideration to all disposal alternatives.
- Maximize the useful life of existing dredged material disposal areas through improvements to and protection of containment structures.
- Maximize the beneficial use of appropriate dredged material for beach nourishment and identified habitat needs in a manner that balances the impacts to affected natural and human communities with compensatory mitigation.
- Protect unique and irreplaceable natural resources from the adverse effects of dredging and spoil disposal.
- Utilize, where practicable, innovative and more efficient spoil disposal methods that reduce environmental impacts and financial costs of spoil disposal.

- Develop an environmentally-acceptable system for offshore disposal of non-toxic dredge spoil material, so as to relieve pressures for inshore filling for reasons other than habitat creation, and to minimize the economic burden of purchasing upland disposal sites.
- Maximize the use of dredged material disposal areas for wildlife habitat while maintaining their utility as disposal areas.
- Minimize the economic burden on the region's maritime industry objectives without compromising environmental and social objectives.

**Policy 2.10:**

The County shall actively pursue alternative means of financing estuarine water quality improvements and coastal wetland restoration strategies including, but not limited to, increased federal and state grant applications, increased permit and impact fees, and special local taxes.

**Objective 3:** The County shall continue to maintain, and enhance where environmentally and economically feasible, the abundance and diversity of living marine resources in Tampa Bay through (a) the application of varying setbacks from environmentally sensitive areas, (b) cooperation with the Hillsborough Environmental Protection Commission, Port Authority and other entities having jurisdiction over such resources and (c) continued participation and lobbying for programs which implement the intent of this overall objective area.

**Policy 3.1:**

The County shall require that land developments projects within the coastal area that discharge into receiving waters flowing into a "Conditionally Approved" or "Approved" Department of Environmental Protection Shellfish Harvesting Area demonstrate non-degradation of water quality for all applicable discharges.

**Policy 3.2:**

The County shall request the Florida Fish and Wildlife Conservation Commission to restrict commercial fishing activities in areas where marine fishery stocks or habitat have been or are expected to be excessively depleted, or where conflicts with recreational fishing interests warrant such action.

**Policy 3.3:**

The County shall cooperate with and assist the Florida Department of Environmental Protection and the U.S. Fish and Wildlife Service in the implementation of protective and recovery programs for the West Indian manatee, and other listed marine species.

**Objective 4:** The County shall cooperate with the appropriate regulatory and management agencies to implement comprehensive and coordinated management plans for Tampa Bay.

**Policy 4.1:**

The County shall cooperate with and assist the Southwest Florida Water Management District and the Agency on Bay Management in the implementation of the Surface Water Improvement and Management (SWIM)

Plan for Tampa Bay, and shall cooperate with the Tampa Bay Estuary Program (TBEP) in order to improve the biological health of Tampa Bay.

## **Beaches and Dunes**

**Issue:** With the exception of Egmont Key, which is under federal ownership and management, no barrier island beaches or natural dune systems occur in Hillsborough County. In its natural state, the low energy shoreline of the Tampa Bay estuary is generally characterized by coastal marshes and mangrove swamps. Only in a few locations do natural sandy beaches occur along Tampa Bay, and these typically do not support major dune systems. To provide public recreational access to the Bay, man-made beaches have been created in various locations. Due to the relatively low wave energy occurring in Tampa Bay, erosion of sandy beaches has generally not been a problem. However, where improperly located or designed, some man-made beaches have exhibited erosional losses. Improved design and natural stabilization of man-made estuarine beaches is needed.

**Objective 5:** The County shall stabilize those man-made beaches prone to erosional problems and shall only support development of man-made estuarine beaches in environmentally-acceptable locations.

### **Policy 5.1:**

The County shall use only those beach stabilization techniques recommended by the Florida Department of Environmental Protection.

### **Policy 5.2:**

The County shall oppose, through the development review process, the destruction or degradation of natural inter-tidal and sub-tidal vegetative communities to develop new man-made estuarine beaches.

## **Land Use And Public Access**

### **Land Use**

**Issue:** Hillsborough County is a coastal county and is expanding rapidly in both population and economic base. Naturally, this growth increases development pressure along the coastline. Land uses dependent upon access to the water should be given priority in order to meet demands for water-dependent and water-related uses and also to meet the demands of the public for access to waterfront areas. Proximity to the coast is an amenity, while at the same time development is vulnerable to natural disasters not experienced by inland areas. The objective when approving future development within the coastal high hazard area should be to ensure that adequate public hurricane shelter capacity is available to accommodate present and future population densities, and to ensure that adequate clearance times and evacuation routes are provided to evacuate resident and seasonal populations in a timely and orderly manner. Land use planning in the coastal area must also provide for the orderly development and use of the Port of Tampa. By their nature, applications for development of most marinas will require permits from the Tampa Port Authority (TPA) for the use of

sovereign lands. The TPA operates in accordance with its enabling act (Chapter 84-447, Laws of Florida), its sovereign Lands Management Rule and other guidelines.

**Objective 6:** Residential land uses within the coastal high hazard area shall be limited to those areas which are planned to accommodate such development through the provision of adequate public facilities and services. Such development must meet storm velocity standards and be provided with adequate hurricane evacuation capability.

**Policy 6.1:**

The Coastal High Hazard Area is the area below the elevation of the category 1 storm surge line as established by the Tampa Bay Regional Planning Council utilizing the Sea, Lake and Overland Surges from Hurricanes (SLOSH) computerized storm surge model. Where this definition and any graphic representation of this area are not consistent, the definition shall govern.

**Policy 6.2:**

New development within the coastal high hazard area shall continue to be subject to the applicable site plan review process. As a component of the review process, the property owner shall provide adequate data to assess the impacts of the proposed development upon existing infrastructure within the coastal high hazard area, as well as level of service standards established for shelter capacity and clearance times.

**Policy 6.3:**

New development and substantial expansions of existing uses within the coastal high hazard area, other than government-owned or leased facilities, shall be approved through a planned unit development rezoning process for the following:

1. Commercial or industrial development on more than five acres of land; and
2. Residential subdivision development requiring platting.

For those developments within both the coastal high hazard area and the I-75 Corridor, the more restrictive requirements shall apply.

**Policy 6.4:**

The County shall delineate the coastal high hazard area on zoning maps.

**Policy 6.5:**

The County shall require, through the subdivision regulations, that all new construction of utility lines in the coastal high hazard area be placed underground. This requirement shall be subject to all other restrictions in this section.

**Policy 6.6:**

The use of septic tanks for new development shall be prohibited in the coastal high hazard area. Regulatory review procedures and criteria for determining exceptions to this policy in cases of undue hardship shall continue to be applied to determine hardship exceptions.

**Policy 6.7:**

Limit new development in the coastal high hazard area to uses that are vested, water enhanced, water related, water dependent, or further the port consistent with the Port Authority Master Plan and limit public expenditure.

**Objective 7:** Water-dependent and water-related uses will be directed into suitable areas of the County that meet or exceed applicable criteria established in this element and the Land Development Code and are compatible with the Future Land Use Element.

**Policy 7.1:**

The County shall give priority to locating water-dependent and water-related uses within the coastal planning areas designed for industrial development on the Future Land Use Map. Water-dependent and water-related uses that are not industrial in nature may also be considered in other areas of the coastal planning area.

**Policy 7.2:**

The County shall amend the Land Development Code to include guidelines and criteria for siting water-dependent and water-related land uses. Performance standards (e.g., shoreline treatment and appearance, scenic easements) shall be considered in the preparation of the Code amendment.

**Policy 7.3:**

Prior to the adoption of the guidelines and criteria required above, the following guidelines shall be applied in order to minimize any potential siting conflicts between water-dependent/water-related uses and those uses that are neither water-dependent nor related.

1. The proposed use shall not degrade the natural and/or man-made environment except as provided for in applicable development regulations;
2. The proposed use shall not contribute to the use of land or water resources in an inappropriate manner;
3. The proposed use shall not result in the reduction of economic growth or vitality of the surrounding area;
4. The proposed use shall not adversely affect the roadway network within the coastal area, inhibiting the expeditious and safe evacuation of the coastal area; and
5. The proposed use shall not disrupt long-term desired land use patterns.

**Policy 7.4:**

Existing development inconsistent with the continued viability of water-related or water-dependent uses shall be eliminated as the opportunity arises. Conflicting uses shall not be redeveloped.

**Policy 7.5:**

Water-related land uses requiring dredging and filling that would result in a significant adverse impact to the long-term hydrological or biological integrity of wetlands or the natural shoreline shall not be permitted.

**Policy 7.6:**

No new sites shall be permitted for heavy industrial uses along the shoreline of the coastal area unless such uses are water-dependent or water-related, or unless an overriding public interest is demonstrated.

**Policy 7.7:**

Existing public and private marina sites shall be encouraged to expand prior to siting new marina facilities within the County.

**Policy 7.8:**

The following criteria shall serve as the County’s marina siting guidelines:

**A. Support Services (Utilities/Public Facilities)**

- 1. Adequate Uplands/Access:** Marinas shall demonstrate that they have sufficient upland area to accommodate all needed utilities and marina support facilities with minimal environmental impacts. Only facilities providing parking areas that minimize stormwater runoff and mitigate pollution shall be permitted.
- 2. Adequate Traffic Capacity:** Applicants shall demonstrate that the adjacent area and on-site roadways have the capacity to accommodate the projected number of users.
- 3. Sewage Capacity:** All new marinas shall provide adequate capacity to handle sewage in accordance with state standards, either by means of on-site pump-out and treatment facilities or connection to a treatment plant. Applicants shall document the availability and capacity of the above sewage facilities to handle the anticipated volume of wastes. All marinas with fueling facilities should provide pump-out facilities at each fuel dock. Marinas which serve live-aboards or overnight transient traffic shall provide shower, restroom and sewage treatment facilities at the dock. Facilities of 50 slips or more shall provide permanent pump-out facilities.
- 4. Spill Containment:** All applicants shall provide documentation of their capability to respond rapidly and effectively to contain any spills of petroleum or other hazardous materials within the boundaries of leased area.

**B. Resource Constraints (Environmental Considerations)**

- 1. Sensitive Areas:** In the following sensitive areas, the applicant shall be required to demonstrate that a marina is clearly in the public interest and in accordance with all pertinent rules of appropriate regulatory agencies before approval to build is granted:
  - Aquatic Preserves;
  - Outstanding Florida Waters;
  - Class I Waters;

- Class II Waters;
  - Marine or Estuarine Sanctuaries;
  - Manatee Sanctuaries or Critical Manatee Habitats;
  - Areas approved or conditionally approved by Florida Department of Environmental Protection for shellfish harvesting;
  - Other highly productive or unique habitats as determined by Florida Department of Environmental Protection, based on vegetation or wildlife species, and
  - Areas designated as particularly sensitive to oil spills.
- 2. Hurricane Evacuation and Protection:** Applicants shall document sufficient capacity to provide maximum practicable protection of the contents of the proposed premises from damages caused by wind and wave forces resulting from hurricanes. Structures shall comply with all applicable coastal construction codes. Applicants shall demonstrate the ability to evacuate people by area roadways (by documenting traffic capacities).
  - 3. Water Quality:** A specific condition of development approval for any new, renewed, or expanded docking facility for 50 or more boats shall require that the facility operator maintain water quality standards as provided by Chapter 403, F.S. To assure compliance, the operator shall maintain a water quality monitoring program approved by the Environmental Protection Commission of Hillsborough County and the Tampa Port Authority. Water quality data shall be periodically reviewed by those agencies. If it can be determined that the docking facility and/or the riparian uplands are causing water quality violations, the marina operator or owner shall be given written notice to correct the problem within 120 days; then, on failure to do so, approval for the docking facility shall be subject to cancellation by the County with resultant removal of the facility. The County shall request the cooperation of the Tampa Port Authority in enforcement of these provisions through its regulatory and submerged land programs.
  - 4. Water Depth:** Only those docking facilities in locations having adequate water depths to accommodate the proposed boat use shall be permitted. A minimum water depth of 4-feet mean low water shall be required. Greater depths shall be required for those facilities designed for or capable of accommodating boats having greater than a 3-foot draft. These depth requirements shall also apply to the area between the proposed facility and any natural or other navigation channel, inlet or deep water. Where necessary, marking of navigational channels may be required.
  - 5. Access/Dredging:** Preference shall be given to docking facilities that require minimal or no dredging or filling to provide access by canal, channel or road. This restriction applies to widening or deepening any existing canal or channel, but not to regular maintenance dredging and filling to meet depth standards of existing canals or channels. Preference shall be given to marina sites adjacent to naturally maintained channels.
  - 6. Environmental Restoration:** In reviewing applications for new docking facilities, or for renewal of existing leased facilities, an effort shall be made to identify ways to improve, mitigate or restore adverse

environmental impacts caused by previous activities. This may include shallowing dredged areas, restoring wetlands or submerged vegetation or making navigable channels. Such mitigation or restoration could be required as a condition of approval for new, renewed or expanded facilities.

- 7. Cultural Resource Protection:** Facilities must demonstrate no adverse impact on archaeological or historic properties.
- 8. Access Markers:** Immediate access (ingress and egress) points shall be delineated by channel markers, indicating speed limits and any other applicable regulations.
- 9. Erosion Prevention:** On sites with historically erosion-prone shorelines, applicants shall ensure that appropriate shoreline protection measures (as determined by the Port Authority and the Florida Department of Environmental Protection will be taken.

**Policy 7.9:**

Existing ports and marinas shall be targeted for concentrations of marine-related land uses.

**Policy 7.10:**

Fueling facilities associated with marinas and ports shall be designed to contain land-side spills and shall be equipped to contain spills in the water as prescribed by federal and state environmental protection agencies.

**Policy 7.11:**

The County shall ensure the orderly development, redevelopment, maintenance and use of the Port District by effectively addressing with the Tampa Port Authority coordination and conflict resolution of issues affecting Port development, redevelopment, maintenance and use, as well as regulatory and County service activities issues affecting the Port, through multiple mechanisms including, but not limited to, the following:

- Regular meetings between County and Tampa Port Authority staff;
- Coordination of hazard response programs of the Tampa Port Authority with the County;
- Coordination of hurricane evacuation procedures between the Tampa Port Authority and the County;
- Coordination with the Tampa Port Authority to ensure that the future development, redevelopment and maintenance of the Port and Port-related facilities are consistent with the goals, objectives and policies of the Port of Tampa Master Plan;
- Review of permit applications for dredge and fill activities by the Hillsborough County City-County Planning Commission and the Environmental Protection Commission of Hillsborough County;
- Coordination of sovereign lands management issues, particularly dredged materials disposal and management.

**Public Access**

**Issue:** Hillsborough County has 33 square miles of coastal area. –However, although the County has acquired significant acreage along the coast, much-of this property is in private ownership or has not yet been developed to accommodate public access. Although the public, through the State’s sovereignty rights, owns virtually all lands seaward of the mean high water line, private property fronting these resources prevents their use by the public resulting in additional burdens on existing public facilities. Because there is a limited supply of public facilities, those that exist must provide public access to the fullest extent possible. As the County’s population grows, the demand on existing facilities will increase and the need for additional public facilities will increase.

**Objective 8:** Public access to the shoreline shall continue to be provided, maintained and improved consistent with public need and protection of the natural environment.

**Policy 8.1:**

The County shall retain ownership rights to any property providing or having the potential to provide public access to coastal areas (e.g., dead-end streets and undeveloped dedicated rights-of-way).

**Policy 8.2:**

The County shall ensure that any public accessway established through private lands seaward of the mean high tide or water line by prescription, prescriptive easement, or any other legal means shall not be diminished or rendered unusable. If a developer or property owner improves, consolidates, or relocates such public accessways, then the accessways subsequently provided shall meet the following conditions:

- a. The accessways shall be of substantially similar quality and convenience to the public;
- b. Accessways shall be approved by Hillsborough County; and
- c. Accessways shall be consistent with this Element.

**Policy 8.3:**

The County shall ensure adequate environmentally-sound coastal access.

**Policy 8.4:**

The County shall consider, during the development review process, requiring the dedication of public access easements for multi-family and non-residential private development in shoreline areas.

**Policy 8.5:**

The County, in cooperation with appropriate agencies, will maintain access to coastal facilities for all Hillsborough County residents regardless of physical, mental, or economic hardship.

**Policy 8.6:**

The County shall require public access to any private beach that is re-nourished at public expense.

**Policy 8.7:**

The County shall use cooperative use agreements to negotiate public access with non-profit, quasi-public, or private entities.

**Historic Resources**

**Issue:** Preservation of the past provides an important link to the future. Paleontologic and historic resources are defined as all areas, districts or sites containing properties listed on the Florida Master Site File, the National Register of Historic Places, or designated by a local government as historically, architecturally, paleontologically or archaeologically significant. Historic resources must be preserved throughout Hillsborough County, including the coastal area. Hillsborough County adopted a local historic preservation ordinance in 1992. Consequently, historic resource management efforts are now more clearly defined. In addition to this element, the future land use element and other applicable elements address the issue

**Objective 9:** Historic resources shall be protected, preserved or utilized in a manner which protects and preserves their continued existence. Once a site has been scientifically excavated, then development may proceed without preserving the site.

**Policy 9.1:**

The County shall continue to enforce an ordinance to protect historical and archaeological sites.

**Policy 9.2:**

As an alternative to preserving on-site known historic or archaeological resources, the property owner may allow excavation of the site by the Division of Historic Resources or their approved alternate prior to development of historic resources.

**Policy 9.3:**

Upon adoption of the ordinance referenced in Policy 9.1, priority for survey and inventory of historic resources shall be given to the coastal area.

**Policy 9.4:**

Known historic or archaeological sites shall be shown on site plans submitted for building permits and rezonings.

**Policy 9.5:**

Historic and archaeological sites shall be incorporated into required setbacks, buffer strips, or open spaces up to the maximum area required by development regulations. The County shall establish variances for non-safety-related setback requirements and site planning requirements in order to accommodate historic structures or sites within a proposed development.

**Policy 9.6:**

The County shall research methods to provide incentives for property owners to preserve, protect, or sensitively reuse historic resources. Such methods

may include density transfer bonuses, use of the Environmental Lands Acquisition and Protection Program, and variances from certain minimum requirements (i.e. setbacks, open space, etc.).

**Policy 9.7:**

The County shall compile a registry of organizations, museums, and individuals who accept the donation of historic or archaeological sites and significant excavated materials. This registry shall be updated on a regular basis.

## **Emergency Preparedness**

### **Coastal High Hazard Area**

**Issue:** The coastal high hazard area (CHHA), is defined as the area seaward of the anticipated storm surge elevation in a category one hurricane. Development within the coastal high hazard area must be regulated and reviewed differently than even that within the hurricane vulnerability zone. The issue with respect to development in the coastal high hazard area is the protection of residents and the public expenditure of funds for areas that are subject to severe flooding from storm surge and rainfall and structure damage as a result of high winds. In addition to limiting development, the permitted development shall be designed to mitigate problems associated with stormwater runoff, wastewater treatment, and septic tanks.

**Objective 10:** Limit public expenditures for infrastructure and facilities in the coastal high hazard area.

**Policy 10.1:**

The County shall limit public infrastructure expenditures in the coastal high hazard area to:

- a. Restoration or enhancement of natural resources or public access;
- b. Flood-proofing existing potable water and sanitary sewerage facilities;
- c. The development or improvement of public roads and bridges that are on the Metropolitan Planning Organization's Long-Range Transportation Plan or that serve a crucial need by ameliorating the evacuation time of residents of the county;
- d. Reconstruction of seawalls that are essential to the protection of existing public facilities or infrastructure;
- e. A public facility of overriding public interest as determined by the Hillsborough County Board of County Commissioners;
- f. The retrofitting of stormwater management facilities for water quality enhancement of stormwater runoff; or
- g. Port and port-related facilities.

**Policy 10.2:**

Wastewater treatment facilities shall not be constructed within the coastal high hazard area unless the expenditure meets the criteria of **Policy 10.1**.

**Policy 10.3:**

Hillsborough County shall preserve and restore, as feasible, coastal ecosystems to maintain and enhance natural coastal barriers to storm events.

**Policy 10.4:**

All new buildings, structures, uses and substantial expansions of existing uses, for commercial or industrial development on more than five acres of land or residential subdivisions exceeding ten lots, within the Coastal High Hazard Area (CHHA), other than government owned or leased facilities, shall be approved through a planned unit development process.

**Policy 10.5:**

The use of septic tanks for new development shall be prohibited in the Coastal High Hazard Area, except in cases of excessive hardship where (1) no reasonable alternative exists, (2) a discharge from a septic tank will not adversely affect public health and will not degrade surface or ground water and (3) where the Health Department determines that soil conditions, water table elevation and setback provisions are adequate to meet state requirements.

**Policy 10.6:**

Hillsborough County shall pursue the use of advanced technologies, such as Light Detection and Ranging (LIDAR) for mapping, to accurately assess the threat of hazards such as storm surge and inland flooding.

**Hurricane Evacuation**

**Issue:** The Tampa Bay Region, which includes Hillsborough County, has been identified by the National Weather Service as one of the most hurricane-vulnerable areas of the United States, with the potential for large scale loss of life. Consequently, Hillsborough County must be prepared for the likelihood of storms and have in place a disaster preparedness program. The three major hazards produced by a hurricane are: storm surge, high winds, and rainfall. These potential hazards to lives and properties require the evacuation of certain portions of the County, depending upon the type of storm. Because evacuation relies on the transportation network and available public shelters for evacuating and housing evacuees, analysis of the vulnerability of evacuation routes, as well as the availability of adequate shelter, is necessary. The goal for hurricane evacuation is to minimize the loss of life primarily and, secondarily, to minimize property damage.

**Objective 11:** The County shall maintain adequate clearance times as identified in the most up-to-date Hurricane Study. Any proposed development shall not increase these clearance times.

**Policy 11.1:**

In order to prevent unnecessary evacuees from crowding roads and shelters, during the hurricane season, the County shall continue to notify households

of their need to evacuate at various threat levels. Hotels, motels and other similar facilities shall conspicuously post the need for evacuation, evacuation routes and shelter locations.

**Policy 11.2:**

The County shall continue to identify new shelter space to meet the demands of the projected population. The standard shall be 20 square feet per person.

**Policy 11.3:**

The County shall maintain capacity on all identified major evacuation routes maintained by the County so that the clearance times as identified in the most up-to-date Hurricane Study can be maintained.

**Policy 11.4:**

The development review process shall include the review of the development's effect on evacuation clearance times and the number of persons requiring public shelter. Developments shall be reviewed and impacts assessed based on the most recently available data. This requirement shall apply to those developments located in the vulnerability zone and those located along and impacting evacuation routes.

**Policy 11.5:**

The County shall continue to conduct an annual review of new development in the Coastal High Hazard Area, and coordinate with the City of Tampa to ensure compliance with the Comprehensive Emergency Management Plan (CEMP).

**Policy 11.6:**

The County shall continue to coordinate all emergency management activities, including evacuation orders, with all state, regional, and local response agencies, and with adjacent local governments, to effect a safe and efficient evacuation and return of County residents.

**Policy 11.7:**

Each new mobile home park shall include or designate a building or buildings for use as shelters for tenants during a hurricane. County development regulations shall be amended to include standards for shelter buildings.

**Policy 11.8:**

The County shall annually review shelters in an effort to provide shelter space for the worst case hurricane scenario.

**Policy 11.9:**

The County, in cooperation with the School District and Red Cross, shall continue to develop strategies to address the shelter space deficiency.

**Policy 11.10:**

New development, and redevelopment, is required to demonstrate available shelter space and evacuation clearance time capacity and/or fully mitigate its impact on these standards, as determined by Hillsborough County.

**Policy 11.11:**

Hillsborough County shall encourage developments/businesses to prepare and maintain disaster contingency plans.

**Policy 11.12:**

By 2009, Hillsborough County shall evaluate and update, as necessary, regulations associated with hazard mitigation in an effort to ensure all areas of the County at risk are adequately addressed.

**Policy 11.13**

Consistent with recommendations of the Governor's Coastal High Hazard Study Committee report of February 1, 2006, Hillsborough County shall pursue the notification to residents and businesses of their evacuation and flood zone through real estate transactions.

**Policy 11.14:**

Hillsborough County shall implement the Local Mitigation Strategy (LMS) Report, and hereby incorporates this report into the Comprehensive Plan by reference.

**Policy 11.15:**

Hillsborough County's Level of Service for out-of-county hurricane evacuation (Intra-State Movements) for a category 5 storm is 28 hours – consistent with the Tampa Bay Region, Hurricane Evacuation Study 2006, Tampa Bay Regional Planning Council, September 2006. No plan amendment within the Coastal High Hazard Area that increases density shall be approved that would exceed a 16 hour evacuation Level of Service for a category 5 storm unless the increase in density is mitigated pursuant to accepted techniques; whereby, the mitigation technique accepted will maintain the evacuation clearance time at, or less than, the 16 hour limit.

**Post-Disaster Redevelopment**

**Issue:** A high concentration of structural loss has been projected for the coastal high hazard area during hurricanes due to storm surges and high winds, and both the public and private sector would be subjected to major losses due to hurricane damage. Repairing or replacing damaged structures and infrastructure due to hurricanes will subject them to renewed damage during any repeat occurrence of a hurricane. Hospitals, nursing homes, assisted living facilities, and correctional facilities located in the coastal high hazard area would be subjected to higher risks during a natural disaster due to special needs evacuation. These uses are best located away from the coastal high hazard area so that evacuation would not be required. Because the coastal high hazard area is subjected to major hurricane damage, this area will require mitigating steps to restrict and eliminate inappropriate and unsafe development when the opportunity arises.

**Objective 12:** The County shall continue to implement a post-disaster redevelopment ordinance to reduce or eliminate the exposure of human life and public and private property to natural hazards.

**Policy 12.1:**

The County's Comprehensive Emergency Management Plan (CEMP) shall be referred to concerning post-disaster activities within the coastal high hazard area. The CEMP specifies the actions necessary for immediate response and clearance of debris in order to protect the public health and safety.

**Policy 12.2:**

The County shall continue to implement, review, and amend as needed its Post-Disaster Redevelopment Ordinance, addressing long-term development, repair, and redevelopment activities, and including measures to restrict and eliminate inappropriate and unsafe development in the coastal high hazard area through Plan designated uses, zoning, and density and intensity limitations.

**Policy 12.3:**

The County shall maintain an inventory and assessment of the value of all public facilities within the coastal high hazard area.

**Policy 12.4:**

Any structure or infrastructure within the coastal planning area that is damaged in excess of 50 percent of its most recent assessed value, shall be rebuilt in conformance with all current standards and requirements, including those enacted since the construction of the structure or infrastructure, except as otherwise stated in the Hillsborough County Post Disaster Redevelopment Ordinance (Ordinance 93-20).

**Policy 12.5:**

[Reserved]

**Public Infrastructure**

**Issue:** Recognizing that Hillsborough County is vulnerable to a hurricane, government is responsible to ensure that the minimum amount of property damage and loss of life is experienced as a result of a storm event. The provision of publicly funded infrastructure (e.g. roadways, pumping stations, wastewater treatment facilities) in the coastal area raises several questions: Does the provision of infrastructure encourage development of coastal areas? Should all citizens be required to bear the burden of increased public infrastructure cost in coastal areas? As development and redevelopment pressures continue in the coastal areas, these questions and others must be addressed. The federal and state governments have reduced subsidies for coastal development by limiting public expenditures in the coastal high hazard area and encourage the same at the local level.

**Objective 13:** The level of service standards, phasing of infrastructure, and areas of service within the coastal area shall be as established in the public facilities

elements, Transportation Element, Recreation and Open Space Element, and Capital Improvements Element of the Comprehensive Plan; and the County shall limit its public infrastructure expenditures in the coastal high hazard area.

**Policy 13.1:**

Interim wastewater treatment plants shall not be permitted in the coastal high hazard area except when County service will be available within five (5) years.

**Policy 13.2:**

The County shall insure that all regional, sub regional and private sewage treatment plants meet Advanced Wastewater Treatment (AWT) standards.

**Policy 13.3:**

The County shall study the impacts of septic tank usage in the coastal planning area on surface waters.

**Policy 13.4:**

The County shall not accept responsibility for maintaining new roadways nor take over maintenance for existing private roadways, in the coastal high hazard area unless said roadway is designated on the future Traffic Circulation Map.

**Policy 13.5:**

The County shall complete and maintain an inventory of existing infrastructure within the coastal high hazard area and develop a program to relocate or retrofit such facilities where feasible and as replacement becomes necessary.

**Policy 13.6:**

The County shall ensure that future development and redevelopment within the coastal high hazard area is consistent with coastal resource protection and will not increase clearance times along evacuation routes.

**Policy 13.7:**

Evacuation routes that are located in the coastal high hazard area and are subject to flooding shall be improved to the extent feasible to expedite the safe passage of evacuees in the event of mandatory evacuation.

**Policy 13.8:**

No new solid waste or hazardous waste management sites shall be approved for location in the coastal high hazard area.

**Port of Tampa Master Plan**

The Hillsborough County Port District is established and the Tampa Port Authority is created pursuant to Chapter 95-488, Laws of Florida, as amended. Under such laws, the exercise of powers established thereunder is declared to be of public necessity and is recognized as an essential government function. The Comprehensive Plan recognizes that the Tampa Port Authority acts in furtherance of the public interest. The Tampa Port Authority has prepared a Master Plan which has been incorporated as part of the Coastal Management

Element. The Master Plan includes certain objectives and policies to meet the Tampa Port Authority's legislative mandate. The Planning Commission found the Tampa Port Authority Master Plan to be consistent with the Hillsborough County Comprehensive Plan on May 12, 2008. Under the comprehensive plan the County encourages development and redevelopment of the port and infrastructure to serve the port in accordance with the Master Plan and other applicable laws and regulations in order to ensure the orderly development of the port.

The Master Plan as adopted by the Tampa Port Authority has been incorporated by reference into Hillsborough County's Comprehensive Plan per Chapter 9J-5, Florida Administrative Code. Refer to the Port Component of the Transportation Element for the Goals, Objectives and Policies that ensure consistency between the Plans of the County and the Tampa Port Authority.

**Objective 14:** Hillsborough County shall encourage development and redevelopment of the Port of Tampa, and infrastructure to serve the Port, in accordance with the Tampa Port Authority Master Plan and other applicable laws and regulations, shall encourage related maritime industries, and discourage the encroachment of incompatible land uses.

**Policy 14.1:**

Hillsborough County hereby incorporates by reference the Tampa Port Authority Master Plan adopted by the Tampa Port Authority Board of Commissioners, July 17, 2008. In the event of a conflict between the Tampa Port Authority Master Plan and the Comprehensive Plan, the Comprehensive Plan will prevail.

**Policy 14.2: Reserved**

**Policy 14.3: Reserved**

**Policy 14.4: Reserved**

**Policy 14.5: Reserved**

**Policy 14.6: Reserved**

**Policy 14.7:**

The Planning Commission staff shall transmit to the Tampa Port Authority a copy of all land use plan amendment applications within the Port Activity Center, or within 250 feet of said area, as identified in the Tampa Port Authority Master Plan.