

## **6.0 COASTAL MANAGEMENT ELEMENT**

### **6.1 INTRODUCTION**

The City of Hallandale Beach is an urban environment predominated by a mixture of commercial and residential development. Intensive development has occurred because of the proximity to the Atlantic Ocean. Because of the high density of development, coastal management issues faced by the City in the future will emphasize maintenance, redevelopment or enhancement of existing urban environments rather than protection of natural systems. The Coastal Management Element has been developed to serve as a planning framework for guiding future coastal management decisions in the City of Hallandale Beach.

### **6.2 GOALS, OBJECTIVES, AND POLICIES**

#### **6.2.1 Introduction**

The City's goals, objectives, and policies were generally derived from the evaluation of existing and projected conditions within the coastal area.

**GOAL 1:** The City of Hallandale Beach shall restrict development activities that would damage or destroy coastal resources

**OBJECTIVE 1.1:** The City shall continue to protect and conserve remaining coastal wetlands, living marine resources, coastal barriers and wildlife habitat in conjunction with the Broward County Department of Environmental Protection (DEP).

- a. The City shall limit the specific and cumulative impacts of development or redevelopment upon wetlands, water quality, water quantity, wildlife habitat, living marine resources and the beach dune system through the review of developments in conjunction with County and state DEP. Any material to be excavated seaward of the coastal construction control line (CCCL) as part of construction adjacent to the CCCL shall remain in and be placed as fill onsite seaward of the CCCL. Any necessary fill material shall be free of construction debris, rocks or other foreign matter. Any such construction shall result in net beneficial impacts to the beach/dune areas, nesting sea turtles, their hatchlings, and their habitat.
- b. The City shall coordinate with DEP on the guidelines for local government implementation of sea turtle conservation programs developed in conjunction with the Florida Bureau of Marine Research.
- c. The City shall coordinate with DEP in order to contribute to the enhancement and restoration of local fisheries and hardbottom communities.

**POLICY 1.1.1:** The City shall review potential impacts of development plans on public facilities, services and evacuation plans for sites within the City's Coastal area boundaries.

**POLICY 1.1.2:** The City shall restrict construction or redevelopment in areas controlled by State Coastal Construction Control Lines (CCCL) pursuant to the authority granted in Section 161.053, Florida Statutes.

**POLICY 1.1.3:** The City shall require that developers use construction methods which will minimize adverse environmental impacts and reduce the flood risk.

**POLICY 1.1.4:** The City shall continue to require building construction elevations consistent with minimum federal flood insurance regulations.

**POLICY 1.1.5:** The City shall continue to require building construction techniques consistent with, or more stringent than, the flood-resistant construction requirements in the Florida Building Code and applicable flood plain management regulations set forth in Title 44 C.F.R. Part 60.

**POLICY 1.1.6:** The City shall identify and catalog all existing resource protection plans applicable to it. A designated City representative will make contact with each agency regulating resource protection and formulate strategies to coordinate resource protection efforts to eliminate overlap.

**OBJECTIVE 1.2:** The City shall implement regulations, as needed, through the Unified Land Development Code, to maintain or improve estuarine environmental quality consistent with all applicable state and local regulations.

**POLICY 1.2.1:** The City shall continue to require that all new or refitted stormwater collection systems comply with applicable State and County codes.

**POLICY 1.2.2:** The City shall continue to monitor and abide by all NPDES requirements to reduce pollution and improve water quality in all City's water bodies.

**POLICY 1.2.3:** The City shall continue to implement its canal maintenance dredging, as needed, to improve overall water quality and tidal flushing characteristics.

**POLICY 1.2.4:** The City shall continue to coordinate with representatives of all local coastal governments which are within at least two miles of the boundaries of the Hallandale Beach Coastal area, including Dania Beach, Hollywood, Aventura, Golden Beach, and Sunny Isles, to discuss plans and strategies and the implementation of specific programs to ensure (1) adequate sites for water-dependent uses, (2) prevent estuarine pollution, (3) control surface water runoff, (4) protect living marine resources, (5) reduce exposure to natural hazards, and (6) ensure public access to the Intracoastal Waterway and Atlantic beaches.

**POLICY 1.2.5:** The City shall continue to require that developers incorporate design elements which will benefit the natural and urban environments of Hallandale Beach.

**Policy 1.2.6:** The City shall promote the use of pervious pavement and native landscaping methods in order to reduce the deleterious effects of runoff on adjacent ecosystems and property owners through land development regulations and incentive programs.

**OBJECTIVE 1.3:** The City shall provide criteria for prioritizing shoreline uses in the following manner:

- a. Primary priority shall be afforded to water dependent uses including docking facilities, beach, beach easement accessways and residential small dock facilities.
- b. Secondary priority shall be directed to water related uses involving parking facilities for shoreline access and residential structures in conformity with all applicable codes.

**POLICY 1.3.1:** The City shall coordinate with the Broward County Department of Environmental Protection (DEP) in the siting of water dependent uses, including all marina siting activities.

**POLICY 1.3.2:** The City will ensure measurability through consistency with the Land Development Regulations. Development of these uses will occur through innovative design and siting criteria incorporated into the Land Development Regulations. Building permits shall be used to regulate these activities.

**OBJECTIVE 1.4:** The City shall coordinate with Broward County's DEP in protecting and enhancing dunes and coastal biological communities.

- a. Monitor and assist in the enforcement of State mandated construction standards which minimize the impacts of man-made structures on dunes.
- b. The City shall participate in the revegetating of the City beach with County DEP, as needed.

**POLICY 1.4.1:** The City shall participate in Federal, State and County Beach Renourishment Programs to replace beach sand deposits lost to erosion.

**OBJECTIVE 1.5:** Protect sites with historic or cultural value during site planning, development or redevelopment activities in accordance with procedures developed during implementation of policies of the Housing Element's goals, objectives, and policies.

**POLICY 1.5.1:** The City shall require that development or redevelopment plans

include an assessment of sites or structures of historical or cultural value. Development shall include sensitive reuse of historic resources as they are identified.

**GOAL 2:** The City of Hallandale Beach shall protect human health and safety in the coastal area.

**OBJECTIVE 2.1:** The City shall adopt the hurricane evacuation times developed by the South Florida Regional Planning Council listed in SFRPC's Regional Hurricane Evacuation Model Traffic Study.

All Scenarios

4-8 Hours

**POLICY 2.1.1:** The City shall participate with Broward County in the development of evacuation plans and strategies to provide adequate public transportation for residents during evacuation, with particular emphasis towards senior citizens and handicapped residents.

**POLICY 2.1.2:** The City shall request participation in the development of schedules for major construction and maintenance activities conducted by the State, County or Municipal transportation departments along primary evacuation routes. This is to avoid scheduling of major work during seasons of highest hurricane incidents which would hamper evacuation of the coastal area.

**POLICY 2.1.3:** The City will assist in the development and implementation of local public information programs to annually advise residents of high risk areas of evacuation routes and evacuation schedules.

**POLICY 2.1.4:** The City shall participate in regular reviews and revisions to Broward County's adopted Emergency Preparedness Plan.

**POLICY 2.1.5:** The City shall provide data regarding City evacuation facilities to the County to be used in the County's evacuation efforts for South Broward and North Miami-Dade County areas.

**POLICY 2.1.6:** The City shall require that proposed developments, which would result in a concentration of elderly and/or handicapped residents, provide plans and methods of evacuation as part of their development planning.

**POLICY 2.1.7:** The City shall require that development within the coastal area not impede traffic flow along the primary evacuation routes.

**POLICY 2.1.8:** The City shall follow the recommendations included in the hazard mitigation annex of the local peacetime emergency plan and applicable existing interagency hazard mitigation reports to reduce the exposure of human life and public and private property to natural hazards.

**OBJECTIVE 2.2:** The City shall direct populations away from High-Hazard Areas in concert with the established hazard mitigation strategies developed by Broward County.

**POLICY 2.2.1:** In the event of major destruction, the City shall enforce its present density standards. However, it may allow under certain conditions, densities which are no greater than those existing prior to the major destructive force.

**Policy 2.2.2:** The Coastal High-Hazard Area (CHHA) is defined by Chapter 163.3178(2)(h) F.S. as the area below the elevation of the category 1 storm surge line as established by Sea, Lake, and Overland Surges from Hurricanes (SLOSH) computerized storm surge model. Application of mitigation and the application of development and redevelopment policies, pursuant to S. 380.27(2), F.S. and any rules adopted thereunder, shall be at the discretion of the local government.

**Policy 2.2.3:** The City shall continue to participate in the National Flood Insurance Program Community Rating System administered by the Federal Emergency Management Agency (FEMA) to achieve flood insurance premium discounts for its residents.

**Policy 2.2.4:** New development and infrastructure in areas modeled to be within the CHHA and/or FEMA flood zones will be encouraged to use best practices to address sea-level rise.

**Policy 2.2.5:** The City shall incorporate Low-Impact Development (LID) techniques into all new public projects within FEMA flood zones and the CHHA when applicable, including infrastructure improvements proposed in the Basis of Design Report (2016). LID is defined as an ecologically-based stormwater management approach favoring soft engineering to manage rainfall on site through a vegetated treatment network (University of Arkansas Community Design Center, 2010).

**Objective 2.3:** The City shall develop additional strategies to identify and address issues related to climate adaptation in cooperation with Broward County, the Broward County Planning Council, the Southeast Florida Regional Climate Change Compact, and other applicable Federal, State, and local agencies.

**Policy 2.3.1:** Based on modeling of current and future sea-level rise, the City of Hallandale Beach shall continue to identify potential adverse impacts and map areas vulnerable to these impacts. This shall include the identification of existing, pending, and proposed development and infrastructure—including air conditioning units, water pumps, generators and any other ground-mounted electrical and mechanical equipment—that would be inappropriate or unsafe as a consequence of current and future flood hazard within the plan's long-range planning horizon.

**Policy 2.3.2:** The City shall develop an *Adaptation Action Area* designation for those low-lying coastal zones that are experiencing coastal flooding due to extreme high-

tides and storm surge and are vulnerable to the impacts of rising sea level, and consider policies within the Coastal Management Element to improve resilience to coastal flooding resulting from high-tide events, storm surge, flash floods, stormwater runoff, and related impacts of sea-level rise. Designating adaptation action areas should be done in coordination with Broward County, adjacent municipalities where applicable, Florida Department of Transportation, and other agencies that plan for or own, operate, and maintain public facilities/infrastructure within or crossing proposed adaptation action areas. Criteria for the adaptation action area may include, but need not be limited to, areas for which the land elevations are below, at, or near mean higher high water, which have a hydrologic connection to coastal waters, or which are designated as evacuation zones for storm surge.

**Policy 2.3.3:** The City shall continue to include development and redevelopment principles, strategies, and engineering solutions that reduce flood risk in coastal areas which results from high-tide events, storm surge, flash floods, stormwater runoff, and the related impacts of sea-level rise.

**Policy 2.3.4:** The City shall consider the effect of sea-level rise when repairing and improving its stormwater management system with the intent of increasing the useful lifespan of the system under projected sea-level rise. The City shall utilize the unified sea-level-rise projections established by the Southeast Florida Regional Climate Change Compact.

**GOAL 3:** The City shall discourage or limit development in areas subject to destruction by natural disasters.

**OBJECTIVE 3.1:** The City shall continue to monitor established limits on levels of service and areas of service for infrastructure systems to existing levels of service within the high hazard area. The City on an on-going basis shall continue to monitor coastal infrastructure to ensure that coastal infrastructure capacities are not expanded beyond existing capacities.

**POLICY 3.1.1:** The City shall not expand capacity of utilities or other infrastructure serving high-hazard areas beyond existing levels, but will only make improvements based on public safety, adaptation to sea-level rise, and maintenance needs.

**OBJECTIVE 3.2:** The City shall continue to coordinate with Broward County in the development of a post-disaster redevelopment plans and adopt such plans by reference within one hundred twenty (120) days after the County submits their plan, if deemed compatible with City plans. If not, mediation will be sought to settle disputes.

**POLICY 3.2.1:** The City shall establish priorities for shoreline land uses as part of the Post-disaster redevelopment plan.

**POLICY 3.2.2:** As part of the City's Post-Disaster Plan, the City will develop a plan for the replacement of infrastructure in the CHHA that integrates additional innovative climate adaptation and mitigation to the extent financially feasible.

**Policy 3.2.3:** The City shall prepare Post-Disaster Redevelopment Plans for the CHHA that identify strategies to reduce or eliminate the exposure of human life, public property, and private property to natural hazards by 2020.

**Policy 3.2.4:** The City shall begin retrofitting and/or relocating public facilities out of flood zones and the CHHA following damage or destruction from natural disasters, tidal flooding, and/or sea-level rise with the exception of water dependent uses such as beach access corridors.

**OBJECTIVE 3.3:** The City shall maintain the five existing public access walkways to the Beach between private developments and the accessibility to the beach at the two City-owned beach parks.

**POLICY 3.3.1:** The City will work with State, Federal and/or private business funding sources to provide matching funds or other incentives for coastal land acquisition for additional access corridors.

**POLICY 3.3.2:** The City will participate in monitoring bus routes in order to ensure adequate bus transit and bus stops for public access to beaches.

### **6.3 ENVIRONMENTAL SETTING**

The coastal area of Hallandale Beach is defined as the area within the City lying east of U.S. Highway 1 (Federal Highway). The area is bounded on the north by the City of Hollywood (Moffitt Street extended), on the south by the Miami-Dade County/Broward County line, and on the east by the Atlantic Ocean. Hallandale Beach planning districts which are located within the coastal area include the Northeast Planning District, the Diplomat/Three Islands Planning District, and the Golden Isles/A1A Planning District, and about half of the Gulfstream Planning District.

#### **6.3.1 Existing and Projected Conditions**

Along the coastal zone of Florida, the greatest potential for natural disaster is associated with hurricanes. The Broward County Hurricane Plan lists the following hazards anticipated to accompany hurricanes:

- \* Extremely strong winds
- \* Abnormally high tides and wind-driven waves
- \* High amounts of rainfall leading to flooding
- \* Storm surge effects

Preparation for and response to such hazards at the County and municipal level has been structured into five phases or stages.

1. Preparatory Stage: Year-round preparations include distribution of public

information, emergency personnel assignment and training, and interagency coordination.

2. Phase I (Watch Stage): Hurricane watch conditions indicate that a hurricane may strike within a 24- to 48-hour period. Pre-storm preparations will include review of hurricane plans, assignment of personnel to fill vacancies in emergency staff, placement of staff on standby, preparation to activate emergency operations centers (EOCs), testing of communications systems, fueling of vehicles, and increased use of public information channels to alert the public of the storm conditions.
3. Phase II (Warning Phase): A hurricane warning advisory is issued by the National Hurricane Center when a hurricane strike is anticipated within 24 hours. Phase II activities will include pre-storm mobilization of emergency staff, EOCs, communications systems, emergency equipment, etc. As appropriate, evacuation efforts will be initiated.
4. Phase III (Impact Phase): During this phase, emergency forces would conduct emergency operations, and begin assessment of damages and the need for assistance and resources for recovery operations. The level of activity would be determined by the severity of the storm.
5. Phase IV (Recovery Phase): This phase would include continued emergency operations, with emphasis on high-priority rescues, repair of vital public service systems and facilities, and provision for public health and safety. The objective is to return public services to normal operations as quickly as possible.

#### 6.3.1.1 Hurricane Evacuation Plans

Hurricane evacuation plans for the City of Hallandale Beach are coordinated with Broward County and the South Florida Regional Planning Council (SFRPC) and are currently identified in the SFRPC's Regional Hurricane Evacuation Model Traffic Study. In addition, the City of Hallandale Beach Emergency Procedures Manual identifies hurricane-related emergency planning and operations to be conducted by the City. Both plans assign task responsibilities and outline general procedures to be followed in the event of a hurricane. The City's emergency procedures are reviewed annually to reflect changes in personnel assignments and other factors impacting the capability to respond to hurricane conditions.

Concurrently, two evacuation scenarios exist for the Hallandale Beach area. Plan A provides for evacuations for a Category 1 or 2 storm having winds of 74 to 110 miles per hours. Under this plan, residents of the barrier island would be advised to evacuate. With Category 3 to 5 storm intensities (110 miles per hour to greater than 155 miles per hour), Plan B would be implemented to evacuate residents of all Hallandale Beach areas east of Federal Highway in addition to residents of the barrier island.

#### 6.3.1.2 Hurricane Vulnerability Zone



The hurricane vulnerability zone for Hallandale Beach includes areas within approximately 2 miles of the Atlantic Ocean that have been identified as within the zone likely to be flooded by a hurricane tide with a probability of occurrence about once in every 100 years. The area encompassed is approximately bounded on the west by Federal Highway.

(A) 58 percent of the population of the City of Hallandale Beach lived east of Federal Highway/US 1 in 2000.

(B) The exact number of persons requiring evacuation in the event of a hurricane is not known. If the percent of residents living east of Federal Highway has increased to 60 percent, a permanent population of around 20,500 persons could live in the hurricane vulnerability zone. Since the hurricane season runs from June through November, and the peak months for seasonal residents are December through April, seasonal residents are not likely to add to the affected population. In fact, because the proportion of seasonal residents is highest in the hurricane vulnerability zone. Therefore, the affected population could be somewhat less than the permanent population.

(C) In its Hazard Vulnerability Analysis (1984), the Broward County Emergency Preparedness Division noted that studies have shown a high degree of complacency among residents of high-risk areas, and that an estimated 25 percent of the residents of such areas would not evacuate prior to a hurricane. Thus, approximately 15,500 Hallandale Beach residents are estimated to participate in evacuation from the vulnerability areas.

Evacuation of residents from the adjacent communities along the southern end of Hollywood Beach and from Golden Beach will affect evacuation of residents from the intracoastal area of Hallandale Beach since a common evacuation route will be used (Hallandale Beach Boulevard).

### 6.3.1.3 Hurricane Shelters

According to the current Broward County Hurricane Evacuation Map, the primary shelter designated to receive evacuees from the Hallandale Beach coastal area is Watkins Elementary School in the Town of Pembroke Park (3520 SW 52<sup>nd</sup> Avenue), approximately 1.5 miles west of the City's western boundary. In addition, the County has a total of 12 Regional Hurricane Shelters for City residents to utilize.

Evacuation shelter locations may be reviewed periodically, and changes will be publicized in conjunction with the County.

As with evacuation, the exact number of persons who will need assistance in finding shelter from a hurricane is not known. However, it is reasonable to assume that a large number of residents will find shelter with friends or relatives. If only half of the residents in the evacuation zone (east of North Federal Highway/ US 1) were able to provide their

own shelter, approximately 10,000 people would need to be sent to the county shelters. In the event that additional shelter space was needed, other nearby schools (for example Hallandale Elementary School) would be likely sites for additional shelters.

#### 6.3.1.4 Evacuation Routes and Times

Broward County Hurricane Evacuation Map indicates two different hurricane evacuation plans: Plan A and B. Plan A is typically used for a Category 1-2 storm and includes all areas east of the Intracoastal Waterway. Plan B is typically used for a Category 3 or higher storm and includes areas east of Federal Highway / US 1. Under either Plan A or B, Hallandale Beach Boulevard will serve as the primary evacuation route for areas lying within the City of Hallandale Beach between the beach and the Intracoastal Waterway. It will bear the majority of evacuees from areas between Federal Highway and the Intracoastal Waterway if those areas are evacuated under Plan B. Hallandale Beach Boulevard will also serve as the primary evacuation route for some residents of Hollywood Beach and Golden Beach.

The amount of time needed to evacuate the Hallandale Beach vulnerability zone is identified in the SFRPC's Regional Hurricane Evacuation Model Traffic Study. Under all SFRPC evacuation scenarios, all evacuees can clear the area within 4-8 hours.

#### 6.3.1.5 Potential Constraints of Evacuation Routes

The drawbridge across the Intracoastal Waterway is the primary constraint on use of Hallandale Beach Boulevard for evacuation of residents from the barrier island. Evacuation planning assumes bridge integrity. This bridge provides the primary avenue of departure for the barrier island residents. If for some reason the Hallandale Beach Boulevard Bridge was unusable, residents could travel to several other nearby Intracoastal Waterway bridge crossings including the William Lehmann Causeway (SR 856) located about 1.5 miles south of the City Limits connecting SR A1A in Sunny Isles Beach to the mainland in the City of Aventura, at Hollywood Boulevard (SR 820) located about 2 miles north of the City Limits connecting SR A1A to the mainland, Sheridan Street (SR 822) located about 4 miles north of the City Limits and Dania Beach Boulevard located about 6 miles north of the City Limits.

Similarly, there are a limited number of routes out of the Three Islands and Golden Isles areas. Orderly evacuation will require uninterrupted traffic flow over the bridges that connect these communities with the rest of Hallandale Beach.

Traffic congestion along Hallandale Beach Boulevard may be anticipated because of the large number of people that will be moving out of the evacuation area. Traffic control points have been designated along the primary evacuation route. The City of Hallandale Beach Police Department has developed contingency plans to assist traffic flow in the event evacuation is ordered.

#### 6.3.1.6 Special Evacuation Needs

Some residents of the areas to be evacuated may not have or be capable of providing independent transportation because of age or health limitations. When an evacuation is ordered Broward County Transit (BCT) buses will pick up riders along SR A1A (Ocean Boulevard) at regular bus stops under Evacuation Plan A and along SR A1A and Federal Highway (US 1) at regular bus stops under Evacuation Plan B. BCT buses can also be flagged down within the evacuation zone and the buses will continue as weather permits. Broward County Transit Paratransit Service section coordinates transportation of persons with disabilities to and from shelters (pre-registration is required).

Bus transportation would provide a means of evacuation for some of those with special needs. Since many of the Hallandale Beach residents within the vulnerability zone are elderly, mass transit will be a particularly important means of resident evacuation from this area. After Hurricane Wilma in 2005, many lessons were learned that will enable emergency management response teams to better plan efforts. The City in conjunction with Broward County has established the Vulnerable Population Registration list to help assist those with special needs.

Due to the large number of elderly residents within the vulnerability zone, it is likely that many evacuees will have limited mobility. This may lengthen the amount of time needed to complete the evacuation. For this reason, Hallandale Beach will meet with Broward County's Emergency Management Agency to be sure that the County's plan recognizes the potential impacts of Hallandale Beach's demographic makeup. If changes to County plans need to be made, both the possibility of increasing the number of evacuation vehicles and the possibility of an earlier start of the evacuation will be considered.

#### 6.3.1.7 Impact of Future Land Use and Populations

The coastal zone of Hallandale Beach is almost completely developed. Because very little vacant land is available, the projected impact of future development and associated population expansion on hurricane evacuation plans should be relatively low.

The effects of future development and population growth may be minimized through periodic re-evaluation of anticipated evacuation loads, and update of the local evacuation plans.

#### 6.3.1.8 Measures to Maintain Evacuation Capability

Evacuation capability is limited by two primary factors: evacuation route integrity and the efficiency and capacity of the mass transit system in evacuee transport. Route integrity should be protected to the extent possible by scheduling of potentially disruptive construction operations to avoid the peak (August-September) hurricane season. Special care should be taken during planning of activities in the immediate vicinity of the Hallandale Beach Boulevard Bridge.

Evacuation capability for those with special transportation needs could be improved by expanding the available bus service. Increased bus service in advance of population growth could reduce the time presently anticipated to be necessary to accomplish evacuation.

If evacuation capacity is merely to be maintained, increased transportation capacity will still be necessary as population expansion occurs. This assumes proportional growth by the transit-dependent population segment. The County should regularly evaluate the need to increase mass transit capability.

As populations increase, improved or maintained evacuation capability will require provision of additional refuge facilities. The County should identify additional shelters for Hallandale Beach evacuees.

#### 6.3.1.9 Post Disaster Redevelopment Analysis

In its Hazard Vulnerability Analysis, the Broward County Emergency Preparedness Division (1984) stated that the entire county is vulnerable to hurricane wind damage and indicated that approximately 25 percent of the County's population resided in areas or dwellings considered to be within the coastal vulnerability zone.

The County's report presented a range of scenarios for vulnerability of buildings to hurricane winds of varying strengths. For Category 3-5 hurricanes (winds from 110 to over 155 miles per hour), wind-related damage would occur to 50-100 percent of all single unit residential buildings, to 40-80 percent of other residential buildings, and to approximately 30-67 percent of all nonresidential buildings. The potential for extensive storm-related damage is quite evident. Post-hurricane redevelopment needs similarly would be extensive.

The state legislation (Chapter 163.319(2)(m) F.S.) was changed to require analysis of private property rights in Coastal High Hazard Areas (CHHA) as a result of previously required development intensity decreases. Many older coastal buildings in the City were built at much higher densities than are currently permitted on the current Future Land Use Map. If a natural disaster were to occur and damage to buildings occurred, consideration is to be made if the development could be built back to existing densities, despite current lower density allowances. The City under certain conditions may allow densities which are no greater than those existing prior to a major destructive force. In such a situation, the City must consider and evaluate if any past reduction in land use density may impair the property rights of current residents when redevelopment occurs. Property rights of current residents must be balanced with public safety considerations.

Broward County's Charter provides for County wide planning authority over all of Broward County including the municipalities. The County adopted a Land Use Plan for all of Broward County in 1977 that reduced maximum permitted density from up to 100 units per acre to a maximum of 50 units per acre. The day of the adoption a significant

number of residential projects in Broward County and in particular Hallandale Beach became legal non-conforming uses as many of the residential projects were constructed at densities higher than 50 units to the acre. See the next section for a more detailed discussion on property rights in the Coastal High Hazard Area of the City.

#### 6.3.1.10 Coastal High-Hazard Analysis

Within the coastal high-hazard area (east of the Intracoastal Waterway), a variety of infrastructure elements could be damaged by a major hurricane. Key elements of the transportation system are the roadways. Ocean Drive (U.S. A1A), Hallandale Beach Boulevard, and adjacent roadways within the vulnerability zone are vulnerable to damage from storm surge or tidal flooding.

There are 12 bridges located in Hallandale Beach within a mile of the Atlantic Ocean. The Hallandale Beach Boulevard Bridge over the Intracoastal Waterway, the N.E. 9th Street and Three Islands Boulevard Bridges over DeSoto Waterway, and the Parkview Drive Bridge over Venetian Waterway are critical elements of the transportation infrastructure.

Additionally, there are 8 small bridges linking the Golden Isles residential communities with the rest of the City. Most of these small bridges are constructed at ground level making them susceptible to hurricane-related flooding. Potable water supply and sanitary sewer lines serving the waterfront communities accessed by these small bridges are suspended beneath the bridges. Utilities services within this area could be disrupted by hurricane-related flooding or tidal currents.

Two power transmission line crossings of the Intracoastal Waterway are present in the Hallandale Beach planning area. These lines, located at the Hallandale Beach Boulevard Bridge and at the southern margin of the City at the Intracoastal Waterway, are subaqueous crossings and therefore may escape major disruption. However, the shoreline areas where the lines enter and exit the water represent vulnerable points where the lines could suffer damage. Above-ground power distribution lines would likely be damaged by hurricane-force winds.

The beaches of Hallandale Beach will be directly impacted by hurricane-force winds and storm-related wave erosion. Beach impacts are likely to be significant, and storm damage to adjacent beachfront properties is anticipated. Post-hurricane beach renourishment may be necessary to restore existing facilities should significant erosion occur.

Some potential for developing less vulnerable infrastructure exists. For example, in new or redeveloped developments, consideration could be given to installation of power, cable television, and telephone lines below-ground to eliminate the potential for wind damage. Installation of such highly vulnerable systems below-ground could lower the risk of extended loss of public services because of hurricane damage.

The Coastal High-Hazard Area (CHHA) is defined by Chapter 163.3178 F.S. as the area below the elevation of the Category 1 storm surge line as established by a Sea, Lake, and Overland Surges from Hurricanes (SLOSH) computerized storm surge model. The SLOSH model for South Florida has not been finalized or adopted as of May 2009. Application of mitigation and the application of development and redevelopment policies, pursuant to s. 380.27(2), and any rules adopted thereunder, shall be at the discretion of local government.

Figure 6-1  
Coastal High Hazard Area

Chapter 163.319(2)(m) F.S. requires all local governments located in a Coastal High Hazard Area (CHHA) to perform an evaluation on any past reduction in land use density that may impair the property rights of current residents following a natural disaster. Property rights of current residents must be balanced with public safety considerations. Coastal High Hazard Area means the area subject to high velocity waters caused by but not limited to hurricane wave wash. The area is designated on the current FIRM map as zone V1--30, VE or V. The area within the City that is within the CHHA is east of the Intracoastal Waterway (see Figure 6-1) and consists of approximately 98 acres with approximately 7,526 units. This equates to an average density of approximately 76.66 units per acre. The current FLUM designation for the majority of the area is 25 units to the acre with a few parcels having a FLUM designation of up to 50 units per acre. Many individual parcels or properties exceed the maximum land use designation of 50 units to the acre. Table 6-1 shows a listing of all development currently within this area and an estimate of the development density.

If a natural disaster were to occur and damage to buildings in the CHHA occurred, consideration is to be made if the development could be built back to existing densities, despite current lower density allowances. The City under certain conditions may allow densities which are no greater than those existing prior to a major destructive force. In such a situation, the City must consider and evaluate if any past reduction in land use density may impair the property rights of current residents when redevelopment occurs. Property rights of current residents must be balanced with public safety considerations. The City has included Policy 2.2.1 in the Goal, Objectives and Policies section of this Element for consideration in a post natural disaster situation.



**Table 6-1  
City of Hallandale Beach  
Coastal High-Hazard Area Current Dwelling Units and Density**

Property Name Address	Number of Units	Acreage	Dwelling Units Per Acre
<b>West Side of Ocean Drive</b>			
Imperial Towers North 1801 South Ocean Drive	140	0.97 ac.	144 du/ac
Imperial Towers West 1817 South Ocean Drive	140	1.04 ac.	135 du/ac
Imperial Towers South 1825 South Ocean Drive	140	3.38 ac	41 du/ac
Plaza Towers North 1833 South Ocean Drive	204	2.3 ac.	89 du/ac
Plaza Towers South 1849 South Ocean Drive	210	2.13 ac.	99 du/ac
Prince George Condo 1865 South Ocean Drive	249	4.15 ac.	60 du/ac
The Islands – Bermuda 1889 South Ocean Drive	56	0.90 ac.	62 du/ac
The Islands – Jamaica 1891 South Ocean Drive	55	0.90 ac.	62 du/ac
The Islands – Martinique 1893 South Ocean Drive	116	1.68 ac.	69 du/ac
Chelsea Hall 1913 South Ocean Drive	154	2.90 ac.	53 du/ac
Ocean Marine Yacht Club 1945 South Ocean Drive	283	5.75 ac.	49 du/ac
The Hemispheres Bay N/S 1965 -85 South Ocean Drive	584	6.88 ac.	85 du/ac
Golden Bay Lodge 2001 South Ocean Drive	60	1.53 ac.	39 du/ac
Avent Garde Condo W/E 2017 - 2049 South Ocean Drive	279	4.13 ac.	68 du/ac
Ocean Plaza 2081 South Ocean Drive	134	1.37 ac.	25 du/ac
Ashleigh House Condo 3113 South Ocean Drive	90	1.84 ac.	49 du/ac
Ambassador North Co-op 3121 3127 South Ocean Drive	65	1.93 ac.	34 du/ac
Ambassador South Co-op 3129 3135 South Ocean Drive	75	2.03 ac.	37 du/ac
Clifton Condo 3161 South Ocean Drive	140	2.15 ac.	65 du/ac
Golden Bay Manor 3177 South Ocean Drive	87	2.21 ac.	39 du/ac
Golden View Condo 3181 3199 South Ocean Drive	96	2.06 ac.	47 du/ac
Golden Bay Towers Co-op 3209 South Ocean Drive	89	2.70 ac.	33 du/ac
<b>Total West Side</b>	<b>3,446</b>	<b>54.93 acres</b>	<b>62.73 du/ac</b>

**Table 6-1 (Continued)  
City of Hallandale Beach  
Coastal High-Hazard Area Current Dwelling Units and Density**

Property Name Address	Number of Units	Acreage	Dwelling Units Per Acre
<b>East Side of Ocean Drive</b>			
Beach Club Condos 1800-1850 South Ocean Drive	1230	9.0 ac.	136 du/ac
City Property	0	3.52 ac.	0.00 du/ac
La Mar Estates West 1880 1904 South Ocean Drive	444	3.58 ac.	124 du/ac
Malaga Towers 1920 South Ocean Drive	146	1.97 ac.	74 du/ac
Biltmore Mansions 1928 South Ocean Drive	22	1.22 ac.	18 du/ac
Tarominia Co-op 1936 South Ocean Drive	91	2.03 ac.	45 du/ac
The Hemispheres Ocean N/S 1950 1980 South Ocean Drive	667	5.81 ac.	117 du/ac
Regency House Beach Club 2000 South Ocean Drive	74	1.31 ac.	56 du/ac
Parker Plaza Estates Condo 2030 South Ocean Drive	522	3.49 ac.	150 du/ac
Ocean Drive Condo (Riviera) 2080 South Ocean Drive	232	5.00 ac.	46 du/ac
Sea Edge Co-op 2076 South Ocean Drive	90	1.20 ac.	75 du/ac
Parker Tower Condo 3140 South Ocean Drive	276	2.32 ac.	119 du/ac
Parker Dorado Condo 3180 South Ocean Drive	286	2.79 ac.	103 du/ac
<b>Total East Side</b>	<b>4,080</b>	<b>43.24 acres</b>	<b>94.35 du/ac</b>
<b>Total Net Developed Acres in Coastal High-Hazard Area – 98.17 +/- Acres</b>			
<b>Total Dwelling Units - 7526</b>			
<b>Total Dwelling Units per Acre – 76.66 DUA</b>			

## 6.3.2 Land Uses Issues

### 6.3.2.1 Inventory of Existing Land Use

The Planning Districts which are located within the coastal area include: Golden Isles/A1A, Diplomat/Three Islands, Northeast, and about half of Gulfstream. Existing land use is detailed in the Future Land Use Element. Approximately 39 percent of the coastal area is used for residential purposes. Other land uses representing over 10 percent of the total area include recreation (about 20 percent), transportation (about 12 percent), and water (about 11 percent).

### 6.3.2.2 Water-Dependent Water-Related Use

Extensive waterfront development associated with the residential canal system of Golden Isles, the Three Islands area, and the Intracoastal Waterway is indicative of intensive recreational use of Hallandale Beach's intracoastal area. Water-dependent shoreline use in the Hallandale Beach coastal area includes private (residential) boat dockage facilities. Almost all of the Hallandale Beach shoreline within the Intracoastal and related waterways is used for recreational, water-dependent activity (Figure 6-2). Few commercial services are provided for boaters. The potential for expansion of water-dependent or water-related land use is limited by the shortage of vacant waterfrontage for further development.

Figure 6-2 Water Dependent Land Use

Public and private use of beaches along the ocean side of the Hallandale Beach barrier island is a water-dependent activity which could expand in the future as population growth occurs. The beach of Hallandale Beach is developed and has five beach access easements off Ocean Drive (A1A).

No significant increase in the demand for water dependent and water related uses is anticipated since the City is build-out, so increases in population will have only a minimal impact on the demand for these uses.

#### 6.3.2.3 Conflicts Among Shoreline uses

Most Intracoastal waterfront property within the Hallandale Beach coastal planning area is dedicated to some form of shoreline development. Because undeveloped intracoastal waterfront is limited in the planning area, the potential for conflicting interests in shoreline use is relatively low.

Single family, waterfront homes are present in the Golden Isles development, and also along the west and northern margin of the Three Islands development. Some of the adjacent Miami-Dade County property (Sunny Isles Beach) is being developed as condominiums and as a marina, and the potential for conflicting interests will likely continue as further development proceeds. Areas north of the Three Islands area include primarily single and multiple-family residential development; inter-city shoreline use conflicts are not anticipated.

#### 6.3.2.4 Areas in Need of Redevelopment

No redevelopment plans are needed for areas within the Hallandale Beach coastal area because of the relatively short period of time that has elapsed since the area was developed.

#### 6.3.2.5 Economic Base of the Coastal Area

The economic base of the coastal area consists of consumer oriented commercial development that is centered north and south along Hallandale Beach Boulevard and east and west along U.S. 1, Federal Highway. This economic base is supported by the entire City and surrounding communities but particularly by the more affluent residents of the Northeast, Diplomat/Three Island and Golden Isles/A1A Planning Districts.

The Future Land Use Element allows for additional commercial development in the coastal area provided necessary public facilities and services are available at the time that impacts from development occur.

### 6.3.3 Natural Resources

#### 6.3.3.1 Description of Biological Systems

Vegetation: Development of the Hallandale Beach coastal area over time has eliminated natural vegetational communities. Dune systems formerly present on the barrier island were lost during beach front property development.

Wetlands which formerly existed in low-lying areas west of the barrier island have been replaced by residential/canal communities along the Intracoastal Waterway. Essentially the entire intracoastal and adjacent canal system shoreline is stabilized by bulkheads; no wetlands remain within the Hallandale Beach coastal area.

Wildlife: Because this area is so highly developed, no natural wildlife habitat remains. Wildlife in the Hallandale Beach area generally is limited to transient shorebirds.

No undisturbed natural areas remain to be developed within the coastal area of Hallandale Beach. Vacant lands have been cleared of native vegetation and are maintained in a managed (mowed) state. Development or redevelopment within this area will not impact natural wildlife habitats.

Living Marine Resources: On the ocean side of the barrier island, the intertidal and nearshore environment associated with sandy beaches represents a high-energy habitat likely to be utilized by a variety of fish and small invertebrates. These organisms are the prey items of shorebirds and gulls which forage along the beach margin.

Marine resources within the Intracoastal Waterway and associated canals and waterways dredged to accommodate residential development include fish and invertebrate communities. However, these resources are not likely to be diverse. Dredged residential canal systems are seldom well-flushed systems and frequently are characterized by degraded water quality. No direct connections of the Intracoastal Waterway to the Atlantic Ocean are nearby, further reducing the probability of intensive recruitment of organisms from the ocean.

Manatees are known to be present within the Intracoastal Waterway in this area. Manatee use of the area is for migration; no resident population is known. Additionally, while sea turtles are known to nest on beaches of this general area, nesting activity on the beach of Hallandale Beach is low. Further development of waterfront areas within the Hallandale Beach coastal area is limited by land availability. However, any expansion of waterfront facilities which leads to more intensive use of the Intracoastal Waterway and its associated side canals and waterways may reduce habitat suitability for use by resident fish and invertebrate populations.

#### 6.3.3.2 Areas of Special Local Concern

The following areas might be considered to be of particular concern:

1. The Intracoastal Waterway, associated canal systems, and Golden Isles Lake are sites of recreational boating, are vulnerable to environmental degradation, and are the habitats for marine communities having significant recreational value to man. These waterbodies need to be protected to ensure continued

suitability for these functions.

2. The beaches of Hallandale Beach should be considered an area of special local concern because of its aesthetic and recreational value, vulnerability to further disturbance, importance in buffering the effects of storms, and economic value to the City as an attraction to tourists.

#### 6.3.3.3 Historical Resources

Resources of cultural or historical significance present in Hallandale Beach are described in the Housing Element. None of the sites currently considered of importance are located within the coastal area.

#### 6.3.3.4 Areas Subject to Coastal Flooding

The Broward County Coastal Zone Protection / Conservation Element (1981) indicated that within the Hallandale Beach planning area, areas within approximately 1 mile of the ocean were subject to coastal flooding due to hurricane tides likely to occur once every 100 years. This area has been used in loosely defining the boundary of the hurricane vulnerability zone described above.

#### 6.3.4 Estuarine Pollution Conditions

Local, Regional, State and Federal regulatory programs will be used to maintain or improve estuarine environmental quality to include the Department of Environmental Regulation's Coastal Management Grant Program.

##### 6.3.4.1 Sources of Pollutants

There are no known point sources of polluted water or wastewaters within the Hallandale Beach coastal area. However, the effects of non-point source (stormwater) inputs to the intracoastal and associated waterways are likely to be considerable. Roads, parking lots, buildings and related impervious surfaces are located directly adjacent to much of the shoreline. These surfaces do not allow stormwater percolation but rather quickly deliver stormwater runoff to the intracoastal system via stormwater culverts. Stormwater drains to these waterways number in the hundreds and range in size from a few inches up to approximately 4-5 feet in diameter.

No quantitative estimates of stormwater volumes or pollutant loadings are available at this time. However, it may be presumed that such stormwater drainage carries a variety of pollutants such as oils and greases, heavy metals, nutrients, suspended particulates and turbidity, and oxygen-demanding substances all of which collectively degrade the receiving water's quality.

Recent attention has focused on the significant negative effects of non-point source pollutants on the nation's surface waters. In 1982, Chapter 17-25 of the Florida

Administrative Code was established to define regulations governing new stormwater discharges to waters of the State of Florida. Permits are now required for new stormwater discharge facilities (not in existence on February 1, 1982) to ensure that such facilities manage stormwater discharges to minimize water quality impacts to receiving waters. The US EPA has sweeping authority under the recently enacted NPDES Stormwater Permit regulations requiring the monitoring of stormwater discharges and removal of pollutants from same.

For the Hallandale Beach coastal planning area, permitting of stormwater discharges has been delegated by the State (Florida Department of Environmental Protection) to the South Florida Water Management District (SFWMD). SFWMD has developed rules governing permitting of surface water management systems (Chapter 40E, Florida Administrative Code). Additionally, Broward County, supplementary to the NPDES Stormwater Permit regulations, is developing regulations for county-administered stormwater system permitting and management (Chapter 36, Broward County Ordinances). There appears to be ample-levels of stormwater regulation.

One other potential source of pollutants is prevalent within Hallandale Beach. Recreational boats are potentially a significant source of water quality contamination due to inadvertent oil and gas discharges, bilge pumpout, and possible discharges from on-board sanitary facilities. While willful discharges of such contaminants are not likely to be widespread, these potential sources of pollutants are collectively an important element which should not be overlooked.

Estuarine pollution related to dredging of waterways is cooperatively regulated by federal and state agencies (U.S. Army Corps of Engineers and the Florida Department of Environmental Protection). The FDEP is the primary agency which coordinates dredge and fill regulation within the State.

These potential pollutant sources exist within the City of Hallandale Beach. However, it should be noted that intracoastal waters are also influenced by adjacent municipalities. Water quality issues related to the Intracoastal Waterway must be addressed on a regional as well as a local basis.

#### 6.3.4.2 Potential Effects from Future Development

Large-scale developments within the coastal area in the future may further decrease the availability of permeable surfaces for stormwater percolation resulting in increased non-point source pollutant loadings. While new discharges are regulated and should be better-planned than historical systems, total pollutant loads to the receiving waters will probably increase because of overall increases in stormwater runoff. Site planning should incorporate stormwater management techniques designed to reduce pollutant loads to receiving waters.

Any waterfront development accompanied by boat dockage or servicing facilities will also increase the probable effects of boat-related pollutant introduction into the



estuarine waters. If commercial marinas with fueling facilities are developed in the Hallandale Beach area, designs should minimize impacts on localized circulation and flushing. Inevitable impacts associated with increased boating activity should be minimized.

### 6.3.5 Beach and Dune Systems

Existing beach systems along the Hallandale Beach Atlantic coastline reflect the changes common to many of the barrier island systems along the southeast coast of Florida. Dune systems present prior to barrier island development are no longer existent; beach front condominiums were built over the dunes. However, in recent years beach revegetation projects have been successful in reestablishing dunes along the entire beach front of Hallandale Beach.

The City of Hallandale Beach's Atlantic beach is approximately 4,000 feet in length. Beach width has varied historically due to recurring beach erosion in the Hallandale Beach area. Beach management planning for the Hollywood/Hallandale Beach area has been coordinated by the Broward County Department of Environmental Protection, Biological Resources Division.

A past estimate of the rate of sand erosion from this area attributable to longshore sand transport and sea level rise was 15,000 cubic yards per year (Coastal Planning and Engineering, Inc., 1985). Additionally, past studies showed average annual offshore losses were estimated to be in the order of 130,000 cubic yards per year. The calculated annual erosion rate is approximately 5-6 percent. Sediment erosion and transport is a natural phenomenon that will continue if not increase (because of rising sea levels), and continued beach management will be required in the future if existing beach resources are to be maintained.

Beach management efforts in the past have included several beach renourishment projects. These efforts have been coordinated by the County's DEP for the beaches of Hollywood/Hallandale Beach as a single planning unit. In 1971, 4,000 feet of the beaches of Hollywood/Hallandale beach were restored by placement of 350,000 cubic yards of offshore sands on the beach. Another 1,980,685 cubic yards of sand were dredged from offshore borrow sites and placed on the beaches of Hollywood/Hallandale Beach in 1979. Periodic re-nourishment continues.

Offshore borrow sites have been used in previous beach renourishment projects for the Hollywood/Hallandale Beach area. A total of 1,100,000 cubic yards of additional sands are estimated to be available at formerly used borrow sites for future beach restoration efforts. However, some of this material may not be suitable for use in beach restoration due to higher than desired rock and silt content. Alternative sources of sands under consideration for future beach reclamation include aragonite material to be imported from the Bahamas, sands dredged from the Intracoastal Waterway, and sands mined from upland borrow sites (Coastal Planning & Engineering, Inc., 1985).

A beach renourishment effort was completed in 1994-95. This effort replaced materials lost over the past decade. The project restored 5.2 miles of beach, approximately 0.75 miles of which is within the City of Hallandale Beach.

The most recent beach renourishment project was conducted in 2005-06 when the County completed a 6.2 mile restoration project know as Broward County Segment III Shore Protection Project. The project included beach areas from John Lloyd State Park south to the Miami-Dade county-line including the City of Hallandale Beach beachfront areas. The project involved moving approximately 1.7 million cubic yards of sand to the Segment III project area and was the first beach renourishment effort in over a decade.

Hallandale Beach has also taken an active role in sponsoring revegetation projects along the beaches of Hallandale Beach. With funding support through the Florida Department of Natural Resources, Erosion Control Trust Fund, the City was involved in a beach revegetation project to restore and protect dunes at the City's beach. The project included planting of native grasses, shrubs, and beach cover, construction of dune overwalks, and other related beach improvements.

This project was successfully completed, and similar efforts were recently completed at the new Beach Club Condominium Development.

#### 6.3.6 Public Access Facilities

Hallandale Beach's South City Beach is a 3.52 acre park that provides approximately 400 feet of beach front access for swimming. Facilities present include bath house/restrooms, picnic areas, life-guarded swimming areas, and a concession stand. Public transportation and handicapped services are available. Public parking facilities, however, are limited (approximately 80 metered spaces). The City also has an additional beach front park, North City Beach, which is a 1.09 acre park that includes limited parking, concessions, showers/restroom facilities, and life-guarded beach.

Figure 6-3

Public Transportation, Parking and Beach Access

The beaches of Hallandale Beach are also accessible to the public via five public easements (Figure 6-3). While no public parking facilities exist at the five access points, City mini-bus service and Miami-Dade and Broward County bus service provide transportation to these locations. The walkways also serve those residents living within walking distance of the beach. Public access to the beaches of Hallandale Beach is somewhat limited by availability of public parking.

Public access to the intracoastal system is limited because of the intensive shoreline use by single-family and multiple-dwelling residential developments. Most of the shoreline is privately owned and therefore unavailable for public use.

Marinas and other docking facilities are associated with private associations, condominium complexes, and private homeowners located along the Intracoastal Waterway and other canal systems in the Three Islands and Golden Isles areas. According to a 1984 Florida Department of Natural Resources inventory of multi-slip docking facilities in Florida, the existing marinas in Hallandale Beach do not provide any fueling services, and only one of the facilities listed indicated any capability to handle boat-related sewage. No public facilities exist in the Hallandale Beach coastal area for boating activities. However, the City is planning a public marina along the Desoto Waterway adjacent to the City Fire Station. The City has been coordinating the marina planning with Broward County.

#### 6.3.7 Assessment of Coastal Infrastructure

Significant development of coastal infrastructure has occurred over time in conjunction with the development of coastal properties. Existing infrastructure for the City of Hallandale Beach is described in the Sanitary Sewer, Solid waste, Drainage, Potable Water and Natural Groundwater Aquifer Recharge Element, and in the Transportation Element.