COASTAL MANAGEMENT ELEMENT

DATA INVENTORY AND ANALYSIS

PURPOSE

The purpose of the Coastal Management Element is to protect human life and to limit public expenditures in areas that are subject to destruction by natural disaster. It is also to plan for, and where appropriate, restrict development activities where such activities would damage or destroy coastal resources.

COASTAL PLANNING AREA

Surfside is an Atlantic Ocean coastal community located on a barrier island along the southeast coast of the Florida peninsula in Miami-Dade County. The barrier island the Town is located on is separated from the mainland by the north end of the Biscayne Bay estuary. The Hurricane Storm Surge Evacuation Map prepared by the Miami-Dade County Office of Emergency Management has identified the Town and the entire barrier island as hurricane vulnerable, and classified the entire barrier island as a Zone A evacuation area. Therefore, the entirety of the Town is recognized as the Coastal Planning Area (CPA).

LAND USE IN THE COASTAL PLANNING AREA

The existing land uses in the Town are identified on *Map FLU 1 Existing Land Use*. The Future Land Uses within the Town are identified on *Map FLU 7 Future Land Use*. The Future Land Use Element inventories and provides greater detail on these uses. The Town has no identified blighted areas in need of redevelopment, and has no Community Redevelopment Agency.

NATURAL RESOURCES IN THE COASTAL AREA

The natural conditions of this barrier island have been highly altered. The Town is nearly built out with only a few vacant lots. The entirety of the Town's Bayside shoreline, inclusive of Indian Creek and Point Lake, has been significantly altered and is bulkheaded, and the adjacent nearshore waters have been dredged.

The one mile length of beach and dune along the Town's ocean frontage is created from a beach renourishment program. The restoration of the federally-authorized Dade County Shore Protection Project, which included the Town of Surfside, began in 1978 and was completed in January 1982 using sand from offshore borrow sites. The project included restoration of a 20 foot wide dune at elevation +10.7 ft NGVD and a 50 foot wide level berm at elevation +8.2 ft NGVD. Additional fill material, equivalent to ten years of advance nourishment, was placed seaward of the design berm. At the time of the compilation of this data in November 2008, there is still approximately 38 acres of beach area seaward of the erosion control line within the Town. This beach area is maintained in a natural state and the vegetated dune serves as nesting habitat to marine turtles.

ACCESS FACILITIES

The entirety of the Town's one mile length of oceanfront beach is under the ownership of the State and is open to the public for recreational use. The erosion control line, which runs approximately along the crest of the dune, defines the limits of private property and the beginning of the state owned beach. The state owned beach is comprised of approximately 38 acres. Ample access to this public beach is provided via

the platted public right of ways for 88th, 90th and 92nd Streets and 94th through 96th Streets; the eastern ends of which terminate at the State-owned beach. Beach access is also provided from the Town's beach front Community Center site located at 93rd Street. The beach and dune system is maintained by the Miami-Dade County Park and Recreation Department in a natural condition. There are no piers, marinas or structures other than a lifeguard station along the beach.

The Town has established an ocean bulkhead line that applies to the private beach front properties east of Collins Avenue. The zoning code prohibits development or any redevelopment seaward of the bulkhead line. Seaward of this bulkhead line there are approximately 19 acres that are undeveloped that lie adjacent to the State owned beach. Within this undeveloped ocean bulkhead setback area, along the landward side of the dune, there is an unimproved maintenance path that is utilized by the State, the County and the Town that runs the entire length of the Town. This maintenance path is, and has historically been, a popular public walking and biking path. The landward side of the dune in this area is more sparsely vegetated than the seaward side, and the property owners have landscaped the area nearest the bulkhead on many of the properties.

To limit impacts to the dune and dune vegetation, seventeen (17) dune cross-over locations have been established and are maintained by the Town. Eight of these cross-overs correspond to the termination of the platted public right-of-ways and one is in front of the Town Community Center site. Although the remaining cross-overs are located in front of private properties, the established maintenance path provides access to these cross-overs also.

The entire shoreline along Biscayne Bay, which includes Point Lake and Indian Creek, is bulkheaded. There are approximately 1.5 miles of shoreline along the barrier island portion of the Town and approximately 0.7 miles of shoreline around the Biscaya Island neighborhood. The western ends of the platted public right of ways for 90th and 92nd through 95th Streets terminate at the Indian Creek bulkhead; the southern ends of the platted right of ways for Froude and Carlyle Avenues terminate at the Biscayne Bay bulkhead, and the platted right of ways of Biscaya Drive, Bay Drive and the west end of 89th Street each terminate at the Point Lake bulkhead. At this time there are no docks, platforms or specific improvements to facilitate water accessibility; however, the Town intends to retain these platted right of ways as public access.

There is a Town park located along Indian Creek at the corner of 96th Street and Bay Drive. The Town is in the process of obtaining grants to purchase a residential property immediately south of the 96th Street Park. The long range plans for this property have not yet been determined.

ESTUARINE POLLUTION CONDITIONS

Biscayne Bay, a sub-tropical estuary, is located along the coast of Miami-Dade and northeastern Monroe Counties; it is a marine ecosystem comprised of about 428 square miles with a watershed area of about 938 square miles. The bay can generally be divided into the north, central and south Biscayne Bay areas. North Biscayne Bay extends from Dumfoundling Bay (approximately NE 192nd Street) south to the Rickenbacker Causeway. The Town of Surfside is located along the north portion of Biscayne Bay. The bayou, referred to as Indian Creek, that separates the Town from Bay Harbor Islands and the Island of Indian Creek Village, and the dredged channels and water body referred to as Point Lake that separates Biscaya Island from the remainder of the Town are considered parts of Biscayne Bay. The northern portion of Biscayne Bay retains the most estuarine habitat that can be found throughout the bay, but it is also the most altered by dredging and bulkheading. Although remaining shallow areas contain some productive seagrass beds, roughly 40 percent of the northern bay area is too deep or too turbid to support a productive estuarine ecosystem. The entirety of the Town's bayside shoreline, inclusive of Indian Creek and Point Lake is bulkheaded and the near shore waters have been significantly altered through dredging. The mainland and barrier island of the north Biscayne Bay area are highly urbanized.

The Atlantic Intracoastal Waterway (ICW) runs through Biscayne Bay in a north south direction. The ICW is managed and maintained by the Florida Inland Navigation District (FIND), which is a special state taxing district. The increased vessel traffic and maintenance dredging, which has created spoil islands that run along the edge of the ICW, also contribute to the impacts to the estuary.

The Town has developed and adopted a Stormwater Management Master Plan (SMMP). The SMMP identifies 9 separate basins within the Town and proposed improvements for each basin. The Town's drainage includes thirteen outfalls into the bay; eleven are Town maintained and two are Florida Department of Transportation (FDOT) outfalls. Under Financial Project Number 249561-2-52-01, FDOT is currently undertaking improvements to retrofit their existing pump stations and injection wells whereby only during emergency bypass situations will discharges to the bay occur from the FDOT outfalls, which are located at 94th Street and at Carlyle Avenue. This FDOT drainage system, which addresses the drainage from the area along Collins Avenue and east of Harding Avenue, is identified as Basin 9 in the SMMP. The SMMP indicates that at present, runoff from the other 8 basins flows untreated to the remaining outfalls and into the bay.

With assistance from grant monies under FDEP Agreements S0374 and LP6787, the Town is currently retrofitting three outfall locations to install stormwater pump stations and injection wells to re-direct run-off into the groundwater, for water quality. Nutrient separating baffle boxes will be installed upstream of the pump stations to provide treatment before the runoff enters the groundwater. These improvements will occur at the ends of 95th Street (Basin 1), Carlyle Avenue (Basin 6) and Surfside Boulevard (Basin 4). The SMMP identifies how basins 1 through 6 and 8 will interconnect for better quality control and hydraulic performance.

Surveying the Town for elevations and Street alignments has been completed and an inventory of all the components of the stormwater drainage system has also been completed. The Town recently sealed all manhole covers and is in the process of repairing or replacing the sanitary sewer lines, where necessary, to decrease transmigration of e-coli and other contaminates to Biscayne Bay. The sewer rehab project improvements will be completed by December of 2010.

HISTORIC RESOURCES

The Bureau of Archaeological Research within the Florida Office of Cultural and Historic Preservation maintains the Florida Master Site File (MSF); a database that contains information on archaeological and historic resources in Florida. The state MSF also contains those sites listed on the National Register. *Map CON 2 Historic Sites,* identifies and locates the historic resources contained on the MSF. There are six (6) listed sites within the Town; a prehistoric mound, a prehistoric midden, and four (4) structures. The Indian Creek Bridge, adjacent to the Town, is also listed on the MSF.

The Town regulates the type of earth disturbing activities that may occur in the location of the midden and mound. The four structures listed on the MSF are all located along Collins Avenue and include the Surf Club lodge constructed circa 1930, a private residence also constructed circa 1930, and the Van Rel and Nichols apartment buildings constructed in 1947. The historic status of these structures should be considered when reviewing any applications for modifications or redevelopment of these structures.

INFRASTRUCTURE IN THE COASTAL AREA

The Town has an atlas with a complete inventory of the water distribution system and the sanitary sewer collection system in the Town. The Town recently completed an inventory of all signage and traffic control devices in the Town, as well as an inventory of all the components of the stormwater drainage

system. Surveying the Town for elevations and street alignments has also recently been completed. The Town has current data on the infrastructure, which is addressed in greater detail in the Infrastructure Element of this plan.

COASTAL HIGH HAZARD AREA

Pursuant to Chapter 163.3178(2)(h)F.S. the "Coastal High Hazard Areas" (also referred to as "high-hazard coastal areas") means the area below the elevation of the category 1 storm surge line as established by a Sea, Lakes, and Overland Surges from Hurricanes (SLOSH) computerized storm surge model. Map CST 1 Storm Tides shows the tide during a Category 1 storm from the US Army Corps of Engineers Hurricane Storm Tide Atlas printed in 2001.

INFRASTRUCTURE IN THE COASTAL HIGH HAZARD AREA

The current SLOSH model indicates a significant portion of the western side of the Town falls within the CHHA. This area falls along Indian Creek and Point Lake. The land within the CHHA is built out. Other than the surface parking lot along Abbot Avenue between 95th and 96th Streets and the 96th Street Park, there is private residential development in the CHHA. These homes are served by public roads, sewer and water.

DISASTER PLANNING

Within the Town there is the potential for impacts from lightning, floods, tornadoes and tropical storms, but the most significant natural disaster threat the Town needs to plan for is the event of a hurricane. Hurricanes have the potential to occur from June through November; heavy rainfall, high winds, storm surge and widespread flooding may accompany these storms. The Miami-Dade County Comprehensive Emergency Management Plan states that southeast Florida has experienced 34 hurricanes between 1994 and 2007, nine of which have been a category 3 or greater. Records indicate that the Town has been brushed by or hit by a tropical storm or a hurricane 51 times from 1871 through 2007.

During a hurricane evacuation, a significant number of vehicles will have to be moved across the local and regional road network. The quantity of evacuating vehicles will vary depending upon the magnitude of the hurricane, publicity and warnings provided about the storm and particular behavioral response characteristics of the vulnerable population. The Town and County must be prepared to evacuate highly vulnerable populations on critical routes, often concurrently with evacuees from outside the County. There are limited route choices; *Map CST 2 Evacuation Routes* identifies the designated evacuation route for the Town. The Miami-Dade County Office of Emergency Management has identified the Town and the entire barrier island as a Zone A evacuation area.

The Town of Surfside is within the 50-mile Emergency Planning Zone (EPZ) for the Turkey Point Nuclear Power Facility located in southern Miami-Dade County. This EPZ includes the ingestion exposure pathway in which the population and animals are vulnerable to the long-term health effects associated with the ingestion of contaminated food and water. Additional manmade disasters that the Town may be subject to include other hazardous materials contamination, civil disturbances and mass migration events, terrorism, biological epidemics or coastal oil spills.

The Town has developed a Comprehensive Emergency Management Plan (CEMP). The final draft is currently under review for adoption and will be in effect by the beginning of the 2009 hurricane season. The CEMP identifies that the Emergency Planning Committee, as directed by the Public Works Director, will be responsible for annually reviewing the CEMP. The Public Works Director will be responsible for annually updating all annexes which reference contact information and other changing information. The

Basic Plan and Functional Annexes will be updated once every four years unless substantial deficiencies are demonstrated through an actual or simulated disaster response incident. The Town Manager may also direct more frequent updates as the environment, conditions, or assumptions within the Town change. The Town of Surfside is also a participant in the Miami-Dade County Local Mitigation Strategy Planning Group. The Town coordinates their Post Disaster Redevelopment with the County Emergency Management Office.

The Town has identified publicly owned locations to be utilized as temporary debris storage and reduction sites in the event of a hurricane, and has had these sites reviewed by the Miami-Dade Department of Environmental Resource Management and has forwarded this site information to FDEP. The Town has also selected a disaster management/recovery services firm and debris monitoring services firm.