CONSERVATION ELEMENT

DATA INVENTORY AND ANALYSIS

PURPOSE

The purpose of the Conservation Element is to promote the conservation, use, and protection of natural resources in the Town.

NATURAL ENVIRONMENT

Climate

The Southeast Regional Climate Center identifies that from 1927 to 2012, the average annual maximum temperature is 81.1 F° and the average annual minimum temperature is 71.4 F° for the barrier island the Town is located on. The average annual total precipitation is 47.82 inches. Precipitation is not distributed evenly throughout the year. Precipitation ranges from an average monthly low of 1.85 inches in December, to 7.13 inches in September. Precipitation is heaviest from May through October with 71% of the rainfall occurring during these six months. No snowfall has been reported during this recording period.

Thunderstorms are common during the summer months. Hurricanes, which occur less frequently, have the potential to occur from June through November; heavy rainfall, high winds, and widespread flooding may accompany these storms. Records indicate that the Town has been brushed by or hit by a tropical storm or hurricane 73 times in a 143 year period ending in 2016. Two of the more devastating hurricanes which occurred struck in 1926 and in 1992 when Hurricane Andrew, a category 5 hurricane, made landfall in South Miami-Dade County. The most recent hurricane events occurred in 2005 with Hurricanes Katrina and Wilma. Both of these storms caused moderate damage to the area.

Soils

The U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) identifies Urban Land and Beaches as the only two coverage types found within the Town. The NRCS describes Urban Lands as areas that are more than 70% covered by buildings, streets, sidewalks and other structures so the natural soil is not readily accessible. The NRCS describes beaches as nearly level to sloping, narrow, sandy strips along the Atlantic Ocean of fine to coarse sand mixed with shell fragments. *Map FLU* 2 *Soils*, provides the general distribution of soils/coverage in the Town as mapped by the NRSC.

The beach along the Town's ocean frontage is created from a beach renourishment program. The deposit material utilized for the renourishment program was sand that was harvested from off-shore borrow sites that is similar to the beach sand which would naturally occur on this barrier island.

Physiography

Surfside is an Atlantic Ocean coastal community located on a barrier island on the southeast coast of the Florida peninsula in Miami-Dade County. The Town is separated from the mainland by the north end of the Biscayne Bay. The Biscayne Bay Inlet (Bakers Haulover Cut), less than one mile north of the Town, is the northern end of the barrier island, and Government Cut, approximately seven and one half miles

south of the Town, is the southern end. The Town itself is one mile in length from its north to south end and is approximately three-fourths of a mile wide at its widest point on the south end of Town. Biscaya Island, also a part of the Town, is a small residential neighborhood at the southwest corner of the Town that is separated from the barrier island by the dredged water feature referred to as Point Lake, but connectivity is maintained via a short bridge segment, referred to as Biscaya Bridge, on Eighty-Eighth Street.

The natural conditions of this barrier island have been highly altered. 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. The project utilized 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. Though nourishment of several areas of the initial project was conducted between 1987 and 1990, the overall project has exceeded performance expectations. At the time of the compilation of this data in2017, there is approximately 38.2 acres of beach seaward of the erosion control line within the Town.

The entirety of the Town's bay side shoreline, inclusive of Indian Creek and Point Lake, has been significantly altered and is bulkheaded, and the adjacent nearshore waters have been dredged. *Map FLU 5 Water Bodies,* identifies the water bodies that abut the limits of the Town.

Map FLU 3 Topography identifies the topography of the Town. The Town is nearly flat with elevations ranging only from 0 to 10 feet. The vast majority of the Town is 5 feet or less. The lowest elevation is found along the oceanfront coastline. The highest elevation is a narrow linear strip that runs approximately along Collins Avenue.

Soil Erosion

The entire length of ocean shoreline along the barrier island the Town is located on is recognized as 'Critically Eroded' by the Florida Department of Environmental Protection's Bureau of Beaches and Coastal Systems and is part of a long term beach renourishment program. The Bureau defines critically eroded as a segment of the shoreline where natural processes or human activity have caused or contributed to erosion and recession of the beach or dune system to such a degree that upland development, recreational interests, wildlife habitat, or important cultural resources are threatened or lost. Critically eroded areas may also include peripheral segments or gaps between identified critically eroded areas which, although they may be stable or slightly erosional now, their inclusion is necessary for continuity of management of the coastal system or for the design integrity of adjacent beach management projects.

The entirety of the Town's bayside shoreline, inclusive of Indian Creek and Point Lake is bulkheaded and the remainder of the Town is developed and does not experience erosion problems.

Commercially Valuable Minerals

There are no extractable, commercially valuable minerals in the Town.

Floodplains

The National Flood Insurance Program administered by the Federal Emergency Management Agency (FEMA) has identified the following flood zones within the Town:

Table 6-1. National Flood Insurance Program Flood Zones	
Zone	**Description**
VE	Special Flood Hazard Area coastal flood zone with velocity hazard (wave action); base flood elevations determined.
AE	Special Flood Hazard Area subject to inundation by the 1 percent annual chance of flood; base flood elevations determined..
X	Areas determined to be outside the 2 percent annual chance floodplain.
X shaded	Areas of 2 percent annual chance flood; areas of 1 percent annual chance flood with average depths of less than 1 foot or with drainage areas less tha 1 square mile; and areas protected by levees form the 1 percent annual chance flood.

Map FLU 4 FEMA Flood Zones, locates the flood zones within the Town. Nearly the entirety of the Town is an AE zone; this zone falls generally west of Collins Avenue. The X zone falls generally east of Collins Avenue. Existing land uses found within these flood zones are illustrated in the *Future Land Use* map and described in the Future Land Use Element.

Land use, as it relates to the discharge of stormwater and to the use of natural drainage, is regulated through the South Florida Water Management District and Miami-Dade County. The Florida Building Code regulates construction as it relates to flood zones.

Air

Air quality in the Town is generally considered good by the Florida Department of Environmental Protection (FDEP) other than for ozone. The *FDEP 2012 AIR MONITORING REPORT* states that "The national ambient air quality standards (NAAQS) are met throughout Florida, (with the exception of a small area in Tampa where the lead standard is violated). Florida counties are in attainment for all pollutants with the exception of Orange County, Duval County, the Tampa Bay area including Hillsborough and Pinellas Counties, and Southeast Florida including Miami-Dade, Broward, and Palm Beach Counties which continue to be classified by the Environmental Protection Agency as attainment/maintenance areas for the pollutant ozone, and a portion of Hillsborough County which is classified as a nonattainment area for lead."

The *FDEP 2016 Annual Air Monitoring Network Plan* reports that Florida has created a robust and comprehensive air monitoring network comprised of more than 220 monitors at 101 sites that are strategically positioned across the state to measure air quality, including in Miami-Dade County.

The Air Quality Index (AQI) was developed by the Environmental Protection Agency (EPA) to provide accurate and easily understandable information to the community about daily air pollution levels. The AQI provides EPA with a uniform system of measuring pollution levels for the major air pollutants regulated under the Clean Air Act (CAA). The Clean Air Act of 1970 defined six criteria pollutants and established ambient concentration limits to protect public health and welfare. The criteria pollutants are (1) ozone, (2) carbon monoxide, (3) nitrogen dioxide, (4) particulates, (5) sulfur dioxide and (6) lead.FDEP takes the lead in the state of Florida for monitoring and regulating the major pollutants under the Clear Air act. Miami Dade County offers its residents an Air Quality Notification Service that can be customized for each resident's own needs. Air quality is a matter that must be addressed at a regional level requiring the local, County and regional entities to coordinate air quality maintenance and improvement efforts.

Water Resources

The predominant water resources that are present are the Atlantic Ocean and Biscayne Bay. Indian Creek is a channel that separates the Town from the Islands of Indian Creek Village and Bay Harbor Islands,

and Point Lake, the dredged channel and water body that separate Biscaya Island from the remainder of the Town, is considered part of Biscayne Bay.

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 be divided into three general areas, north, central and south Biscayne Bay. North Biscayne Bay extends from Dumfoundling Bay (approximately NE 192nd Street) south to the Rickenbacker Causeway. The Town of Surfside is located adjacent to the north portion of Biscayne Bay. This northern portion of the bay retains the most estuarine habitat 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 this 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 has been significantly altered through dredging and is bulkheaded.

Central Biscayne Bay, extending from the Rickenbacker Causeway south to Black Point, is more of a marine system that is heavily influenced by daily tidal flushing. Estuarine areas are limited to near shores areas close to major sources of freshwater inflow (canals). Seagrass meadows are extensive. A narrow band of mangrove-forested coastal wetlands begins at Matheson Hammock Park and extends southward along the shoreline.

Southern Biscayne Bay extends from Black Point to Jewfish Creek. This southern area is most profoundly affected by the reduction in historical freshwater flows and tends to become hypersaline during periods of low rainfall. The near shore freshwater wetlands have been significantly reduced and a transition to mangrove species is occurring. This southern area encompasses Biscayne National Park as well as Card and Barnes Sounds, which are both included in the Florida Keys National Marine Sanctuary.

The Bay supports a wide variety of plants and animals, some of which are important for fisheries. Many rare, threatened and endangered species inhabit this estuarine ecosystem including manatees and crocodiles. Historically, it's clear water supported a diversity of productive communities of seagrass, corals and sponges, and prior to settlement, mangroves and coastal wetlands rimmed the bay. Oyster bars and estuarine species like red and black drum were common. However, intensive development of the watershed has altered the natural cycle of freshwater inflows into the bay. Northern and central Biscayne Bay are strongly affected by the urban development associated with the growth of Miami-Dade County. Southern Biscayne Bay is influenced by drainage from the Everglades, which has been altered by canals and agricultural activities. Overall, Biscayne Bay shows increasing signs of distress; declines in fisheries, increased pollution and dramatic changes in near shore vegetation. Today, the bay is a pulsed system that alternates between marine conditions and extreme low salinities near the discharges of 19 major canals.

Biscayne Bay is now designated as an Outstanding Florida Water and an Aquatic Preserve under Florida statutes. The Biscayne Bay Aquatic Preserve was established by the Florida Legislature in 1974 and covers approximately 69,000 acres of state submerged land. The Aquatic Preserve consists of two separate areas of the bay, the northern part and the southern portion which is separated by Biscayne National Park, a submerged lands park encompassing the central portion of the bay. A variety of organizations have monitoring and research underway in Biscayne Bay and its watershed. The western edge of the Town abuts the northern portion of the Biscayne Bay Aquatic Preserve.
The Bay area off of the Town is also recognized as an Impaired Waterbody (WBID 3226H). The parameters for the impaired waterbody is Mercury in fish tissue.

Land Cover

Map FLU 6 Aerial, best exemplifies the land coverage within the Town. The land coverage can be categorized as Developed and Beach. Other than the beach and beach dune system, the Town is built out.

There are no native preserves or remaining native habitats or wetlands within the Town. The beach and dune system, although created through a beach renourishment program, is owned by the State and maintained in a natural condition.

Natural Habitats

There is 38.2 acres of state owned beach (approximately 1 mile in length) seaward of the erosion control line, which runs approximately along the crest of the dune. This beach is maintained under an agreement with the State by the Miami-Dade Park, Recreation and Open Spaces Department. The seaward face of the dune is vegetated. The beach is recognized as nesting habitat for the federally listed loggerhead, green, hawksbill, and leatherback sea turtles. Sea turtles typically nest at night from March through November, with incubation lasting approximately 55 days. Threats to sea turtle nests are both man-made and naturally occurring. Detrimental activities include: physical disturbance of dune systems by development; the placement of physical obstructions on the beach entrapping adults and hatchlings; high raccoon predator populations; nest disturbance by stray or unleashed pets; or the disorientation of hatchlings from direct lighting of the beaches at night. Natural occurring coastal erosion which can cause cliffing and, although not frequent, hurricanes causing serious beach erosion or accretion are also detrimental to nesting success.

Along beachfront private properties, the Town has an established ocean bulkhead line. The zoning code prohibits development or any redevelopment seaward of this ocean bulkhead line. Seaward of the ocean bulkhead line there is 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 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, access to the beach is limited to seventeen (17) dune cross-over locations. Eight of these cross-overs correspond to the termination of the platted public right of ways that terminate at the State beach area and one is in front of the Town's Community Center site providing direct public access to the beach. Although the remaining cross-overs are located in front of private properties, the established maintenance path provides open public access to these cross-overs also.

Appendix 6-A. *List of Federal State and County Endangered, Threatened, Rare, and Special Concern Fauna in Miami Dade County* as presented in the Conservation, Aquifer Recharge and Drainage Element of the Miami-Dade Comprehensive Development Master Plan including amendments adopted up through November 18, 2015. Although most of these species may not occur within the Town, the table proves useful to understand the listed species that may be within the proximity of the Town. Due to the highly urbanized nature of the Town the listed species that may occur are limited to those that utilize the bay or coastal waters, or beach habitat.

Appendix 6-B. *List of Federal, State and County Endangered, Threatened, Rare, and Special Concern Flora in Miami-Dade County* as presented in the Conservation, Aquifer Recharge and Drainage Element of the Miami-Dade Comprehensive Development Master Plan including amendments adopted up through November 18, 2015. Although most of these species may not occur within the Town, the table proves useful to understand the listed species that may be within the proximity of the Town.

Appendix 6-C. *Invasive Pest Plant Species* identifies the plants listed on the Florida Exotic Pest Plant Council's 2017 List of Invasive Plant Species. Due to the highly urbanized nature of the Town occurrence of these pest plant species will be limited, but may still occur and create problems on the beach and within landscaped areas if not maintained.

Conservation Opportunities

Conservation opportunities are enhanced through the public ownership of land. There is approximately 38 acres of state owned beach seaward of the erosion control line. The beach is maintained under an agreement with the State by the Miami-Dade Park, Recreation and Open Space Department. The beach is maintained in a natural state. The Town has been built out since the 1980's; there are no preserves, wetlands or natural habitats within the Town other than the beach habitat. The Park and Recreation Element inventories and identified the parks located in the Town.

Potable Water

The Town of Surfside purchases their potable water supply directly from the Miami-Dade County Water and Sewer Department (WASD). Under this arrangement, the Town of Surfside coordinates with Miami-Dade County to ensure that adequate capacity is available for existing and future customers. The Biscayne Aquifer, an underground geologic formation, is the source of raw water for WASD. See the Infrustructure Element for more details on water supply.

The Town is served by the WASD Hialeah-Preston subarea, which lies generally north of Flagler Street. The Hialeah and the John E. Preston water treatment plants (WTPs) serving this subarea are located at 200 W. 2nd Avenue and 1100 W. 2nd Avenue, respectively. These adjacent facilities located in Hialeah share interconnected source water and finished water storage capacity and have similar treatment processes. There are no public wellfields or wellfield protection zones located in the Town of Surfside.

On a regional level the Town falls within the South Florida Water Management District (SFWMD) and within the SFWMD's Lower East Coast (LEC) Planning Area. The *Lower East Coast Water Supply Plan Update* 2013, is one of four, long-term comprehensive regional water supply plan updates the District has developed for its planning areas.

As the state agency responsible for water supply in the region, including the Lower East Coast planning area, the SFWMD plays a vital role in resource protection. As a component of the District's Consumptive Use Permitting Program, the Regional Water Availability Rule mandates the development of alternative water supplies, and increasing conservation and reuse to reduce the reliance on the regional system for future water supply needs. The Town of Surfside is working with WASD's Water Use Efficiency Section to identify the water conservation best management practices (BMPs) applicable to the Town to develop the Town's Water Conservation Plan as required by Miami-Dade County Ordinance 06-177.

Ground Water

The principal ground water resources for the LEC Planning Area are the Surficial Aquifer System (SAS), including the Biscayne aquifer, and the Floridian Aquifer System (FAS). The Surficial and Biscayne aquifers provide most of the fresh water for public water supply and agriculture within the LEC Planning Area. The 2005-2006 LEC Plan Update identifies the following:

> Although the Biscayne Aquifer is part of the Surficial Aquifer System (SAS), it exists only along the coastal areas in Miami-Dade, Broward and southern Palm Beach counties. The Biscayne Aquifer is highly productive with high-quality fresh water. The extension of the SAS through central and northern Palm Beach County is less productive, but is still used for consumptive uses, including potable water. These aquifers are shallow, generally located within 200 feet of ground surface, and are connected to surface water systems, including canals, lakes and wetlands.

The Biscayne Aquifer and the extension of the SAS into northern Palm Beach County provide more than 1 billion gallons per day of high-quality, inexpensive fresh water for the populations of Palm Beach, Broward and Miami-Dade counties and the Florida Keys portion of Monroe County. This volume is heavily supported, especially during the annual dry season, as well as in periodic droughts, by water from the regional system, primarily the Everglades. During droughts, water from Lake Okeechobee has been required to supplement water from the Everglades to meet the needs of the coastal counties.

The Biscayne Aquifer is designated as a sole source aquifer by the U.S. Environmental Protection Agency (USEPA) under the *Safe Drinking Water Act* because it is a principal source of drinking water and is highly susceptible to contamination due to its high permeability and proximity to land surface in many locations. Protection of the Biscayne Aquifer is provided for through the District's *Basis of Review for Water Use Permit Applications* (SFWMD 2003) and in Chapter 373, Florida Statutes (F.S.), which limit the water availability for consumptive uses.

The Floridan Aquifer System (FAS) exists not just in the LEC Planning Area, but throughout the entire state and portions of adjacent states. The Upper Floridan Aquifer in southeast Florida contains brackish water and is increasingly being tapped as a source of raw water for treatment with reverse osmosis (RO) to create potable water. Brackish water from the Floridan Aquifer is also blended with fresh water prior to conventional water treatment to expand water supplies during the dry season. Additionally, the Floridan Aquifer is used for seasonal storage of treated fresh water within aquifer storage and recovery (ASR) systems. The Floridan Aquifer has been more extensively developed in the Upper East Coast (UEC) and Lower West Coast (LWC) planning areas of the South Florida Water Management District (SFWMD or District) than in the LEC Planning Area.

From Jupiter to southern Miami, water from the FAS is highly mineralized and not suitable for drinking water without specialized treatment. More than 600 feet of low permeability sediments confine this aquifer and create artesian conditions in the LEC Planning Area. Although the potentiometric surface of the aquifer is above land surface, the low permeability units of the intermediate confining unit prevent significant upward migration of saline waters into the shallower freshwater aquifers.

The top of the Upper Floridan Aquifer is approximately 900 feet in southeast Florida, and the base of the Upper Floridan extends as deep as 1,500 feet. At the base of the Lower Floridan Aquifer, there are cavernous zones with extremely high transmissivities collectively known as the boulder zone. Because of their depth and high salinity, these deeper zones of the Lower Floridan Aquifer are used primarily for disposal of treated wastewater.

Surface Water

Surface waters tend to contain silts and suspended sediments, algae, dissolved organic matter from topsoil, and chemical and microbiological contaminants from municipal wastewater discharges, stormwater runoff, and industrial and agricultural activities. Traditionally, surface water has not been used extensively for public supply in the LEC planning area.

Storm water throughout the developed areas of the SFWMD is often captured in constructed stormwater drainage and retention/detention systems. Water from these systems can be directly used to meet many

non-potable water needs, such as golf course irrigation and other irrigation water needs. Stormwater, because of its diffuse and intermittent nature, is generally not considered a viable option for direct public-supply applications where reliability is a major consideration.

Pollutants

Waste generators, solid waste facilities, above and underground storage tanks, and dry cleaning facilities are licensed by the Florida Department of Environmental Protection (FDEP). Current information on these facilities is available through the Florida Department of Environmental Protection Division of Waste Management. Information on contaminated sites is also available through the U.S. Environmental Protection Agency (EPA) Resource Conservation Recovery Act (RCRA), Superfund, National Priorities List and the brownfield databases.

Within Miami-Dade County the Division of Environmental Resource Management (DERM) Pollution Remediation Section is currently contracted with the Florida Department of Environmental Protection (FDEP) to inspect all petroleum storage facilities in the County and oversee the cleanup of petroleum contamination in accordance with Chapters 62-761 and 62-770, Florida Administrative Code (F.A.C.), the stationary tank rule and the petroleum contamination cleanup criteria rule, respectively. The primary responsibility of DERM is to provide the technical oversight, management, and administrative activities necessary to prioritize, assess, and clean up sites contaminated by discharges of petroleum and petroleum products from stationary petroleum storage systems.

A database search identifies that at this time there are no sites in the Town listed on the U.S. Environmental Protection Agency's (EPA) Federal Superfund list or the National Priorities List (NPL). There are no designated or candidate brownfields in the Town. Within the Town several sites are recognized by FDEP as having or had contamination issues..

The Town's Sanitary Department has three garbage trucks which collect trash and garbage on a weekly basis and haul it to Miami-Dade County's Resource Recovery Plant west of Miami International Airport and other Miami-Dade County landfills. The Town can provide public information regarding the safe disposal of household chemicals for its residents. Specifically, information can be made available on the free disposal of household hazardous wastes, information on disposal contractors available to small businesses and the special waste programs available for landfill disposal of non-typical materials, such as spill clean-ups and contaminated soils. Additionally the Town may consider contracting with a licensed hazardous waste hauler to execute a *Household Hazardous Waste Mobil Collection Event*. The Contractor would receive, catalog, inventory and prepare the manifest of disposal for the household products that are dropped off, as well as place them in appropriate containers and haul them away. Setting-up a system where the residents just drive up and 'pop the trunk' and let the contractor deal with the products from that point is an effective means to reduce the potential of contaminates being disposed of in inappropriate or detrimental ways. The Town could do this in conjunction with distributing informational handouts or gathering survey data from the event participants. Running it near Earth Day or in conjunction with spring cleaning drives has proven to increase participation. It is optimal to hold such an event in a paved area, and not near a school or park or an environmentally sensitive area to avoid the perception of putting environmentally sensitive sites at risk.

Greenhouse Gas Reduction Strategies

Climate change is largely attributed to the buildup of carbon dioxide and other greenhouse gas (GHG) concentrations in the atmosphere. In the *Policy Guide on Planning and Climate Change*, updated in 2011, the APA provides guidance for local governments toward the reduction of GHG emissions and on energy efficient land use decisions. The APA document indicates that effective actions to address GHG

emissions should include a mix of education, incentives, subsidies, and regulation. Among others, the APA has suggested the following strategies for local governments to facilitate a reduction in GHG emissions: providing shopping, recreational and employment opportunities near residential areas, energy efficient buildings, convenient intermodal transportation systems, and the reduction of heat island effects through green spaces.

As currently developed, the Town of Surfside is a compact, walkable community that provides recreational, shopping, and employment opportunities completely within the municipality. The Future Land Use Element provides that the Town support green building standards through the Design Guidelines, consider all new residential development utilize green building standards and that all new municipal buildings will be build with nationally recognized green building standards.

Surfside already has convenient access to Miami-Dade Transit bus routes. The Future Land Use Element and Transportation Elements propose developing a Pedestrial and Bicyle Network Study to enhance links to parks, the business district and other Town amenities. The Town will also continue to support transit ready development and coordinate with Miami-Dade County on transit. To further reduce greenhouse gas production through transportation, the Town will continue to allow home based businesses and continue curbside recycling programs.

In addition, the Town has open space and landscape requirements to diminish heat island effects. The Comprehensive Plan also includes policies to educate the public on the placement of canopy trees and other landscape materials to strategically provide shade, and educating the public on home energy reduction strategies and automobile idling.

Other policies that support energy efficiency include allowing for electric charging stations and use of solar panels.

Conservation Element
Goals, Objectives and Policies

Goal 1: Regulate the development and use of land in such a manner as to maintain and enhance environmental quality.

Objective 1 – Air quality and Greenhouse Gas Reduction: In general, protect air quality. In particular, promote improved air quality for the region.

Policy 1.1 – Support Miami-Dade County's efforts to conduct regular monitoring of air quality.

Policy 1.2 – Educate residents and business owners on the cost and environmental effects of automobile idling.

Policy 1.3 – Facilitate more efficient transportation services and facilities (including public transit facilities, bicycle facilities and pedestrian facilities) by pursuing the objectives and policies set forth in the Transportation Element.

Policy 1.4 – Enforce all adopted measures to contain and stabilize exposed or destabilized soil surfaces at construction sites to prevent erosion and the degradation of ambient air quality caused by the generation of dust particles.

Policy 1.5 – Require oxygen renourishing landscaping as a part of new private development.

Policy 1.6 – Provide oxygen renourishing landscaping for public grounds.

Policy 1.7 – Maintain, and improve where appropriate, zoning or other development code regulations which protect existing trees in a way consistent with the standards of the broader community.

Policy 1.8– The zoning code shall allow for use of alternate, renewable sources of energy including the use of solar panels.

Policy 1.9 – In accordance with Section 255.2575, F.S. the Town will construct all future municipal buildings to meet the United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) rating system, the Green Building Initiative's Green Globes rating system, the Florida Green Building Coalition standards, or a nationally recognized, high-performance green building rating system as approved by the Florida Department of Management Services.

Policy 1.10 **–** The Town shall maintain and improve adopted Design Guideline provisions which encourage the use of the United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) rating system, the Green Building Initiative's Green Globes rating system, the Florida Green Building Coalition standards, or a nationally recognized, high-performance green building rating system for both residential and commercial properties. Within two (2) year of adoption of this element, the Town shall explore incentives for use of green building standards in new development and redevelopment.

Policy 1.11 – Within two (2) years of the adoption of this element the Town shall consider the feasibility of requiring all new single family and multi-family structures to meet the United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) rating system, the Green Building Initiative's Green Globes rating system, the Florida Green Building Coalition standards, or a nationally recognized, high-performance green building rating system as approved by the Florida Department of Management Services.

Objective 2 – Water quality: Conserve, appropriately use, and protect the quality and quantity of current and projected water sources and waters that flow into estuarine waters or oceanic waters.

Policy 2.1 – For site plan approval, the Town shall require that surface water management systems be designed and operated consistent with the Town's adopted drainage level of service.

Policy 2.2 – The Town shall coordinate and cooperate with all applicable local, regional, state and federal agencies relating to the protection and enhancement of the Biscayne Bay Aquatic Preserve.

Policy 2.3 – The Town shall coordinate and cooperate with all applicable local, regional, state and federal agencies relating to the protection of Atlantic Ocean coastal waters, particularly relating to beach renourishment projects.

Policy 2.4 – The Town shall cooperate and coordinate with the applicable agencies to assure that solid and hazardous wastes generated within the Town are properly managed to protect the environment and near shore waters. The Town shall report any hazardous waste violation they may become aware of to the appropriate jurisdictional agency.

Policy 2.5 – The Town shall adhere to the National Pollution Discharge Elimination System-Municipal Separate Storm Sewer System (NPDES-MS4) Permit and shall implement the permit conditions including monitoring of outfalls and improving stormwater management practices.

Objective 3 – Water quantity: Conserve, appropriately use, and protect the quality and quantity of current and projected water sources.

Policy 3.1 – The Town shall maintain or improve an emergency water conservation ordinance based on both the South Florida Water Management District model ordinance and any specific South Florida Water Management District requirements of the emergency in question.

Policy 3.2 – The Town shall assess projected water needs and sources for the 20-year planning period by creating and maintaining a 20-Year Water Supply Facilities Work Plan. Future water supply planning shall emphasize the efficient use of water resources and where possible and financially feasible, utilize alternative water sources.

Policy 3.3 – The Town shall submit a Water Conservation Plan to the County's Water and Sewer Department's Water Use Efficiency Section, pursuant to the Miami-Dade County Code Section 32-83.1. The Plan shall be updated for the County's approval every five years following submittal, and Conserve Florida Guide generated reports shall be filed annually at the close of the fiscal year.

Policy 3.4 – The Town shall participate in the development of the Regional Water Supply Plan in conjunction with the South Florida Water Management District.

Policy 3.5 – The Town shall conserve potable water resources and implement reuse programs and potable water conservation strategies and techniques consistent with the Miami Dade County 20-Year Water Supply Facilities Work Plan.

Policy 3.6 – The Town shall ensure coordination between land use and future water supply planning by implementation of the 15-Year Water Supply Facilities Work Plan.

Policy 3.7 – The Town shall work towards the further education of the public regarding various methods of water conservation at the household and small business level.

Policy 3.8 – The Town shall support water conservation goals through the support and enforcement of landscape and irrigation ordinances, inclusive of all applicable Miami-Dade Ordinances.

Objective 4 – Vegetative communities and soils, wildlife habitat and wildlife: Conserve, appropriately use and protect native vegetative communities for their own sake and to protect soils, wildlife habitat and wildlife.

Policy 4.1 – The Town shall encourage and educate the public in the planting and maintenance of trees.

Policy 4.2 – The Town shall require the owner/applicant to remove all Class I and II invasive exotic vegetation, as recognized by the Florida Exotic Pest Plant Council, from the subject site as a condition for new development or redevelopment.

Policy 4.3 – The Town shall maintain a survey of vegetation on property for which it has maintenance responsibility. The Town administration shall make recommendations for enhancing native vegetation.

Policy 4.4 – The Town shall evaluate the feasibility of incorporating recommendations derived from the implementation of Policy 4.3 above into the Capital Improvements Budget or the operating budget.

Policy 4.5 – The Town shall strictly enforce the adopted landscape standards which require the preservation of existing native species, the removal of invasive species and the promotion of native plant materials.

Policy 4.6 – The Town shall continue to coordinate and cooperate with the County, the State and the U.S. Fish and Wildlife Service on the protection of the beach dune system which is nesting habitat for marine turtles.

Objective 5 – Floodplain protection: Protect and conserve the natural functions of existing floodplains.

Policy 5.1 – The Town shall maintain and improve land development code provisions governing floodplain protection. *Floodplain protection regulations* shall be consistent with applicable standards promulgated by the South Florida Water Management District, the South Florida Regional Planning Council, the Miami-Dade County Department of Environmental Resource Management, the Florida Department of Environmental Protection, and/or other agencies with relevant jurisdiction and/or information. The Town shall revise as necessary and enforce flood hazard reduction regulations.

Policy 5.2 - The Town shall continue to participate in the National Flood Insurance Program's Community Rating System and require development be consistent with, or more stringent, than the flood-resistant construction requirements in the Florida Building Code and applicable floodplain management regulations set forth in 44C.F.R. part 60.

Policy 5.3 - The Town shall continue to identify site development techniques and best practices that may reduce losses due to flooding and claims made under flood insurance policies and implement these techniques and best practices through the Community Rating System to increase resiliency.

Objective 6 – Community Resiliency: Increase community resiliency by reducing heat island effect, increasing carbon sequestration, managing stormwater runoff and conserving freshwater.

Policy 6.1 - To reduce heat island effect and encourage carbon sequestration, the Town shall continue to maintain and enhance its tree canopy through such efforts as implementation and periodic updates of the zoning code and land development regulations, urban forestry grants, and other actions.

Policy 6.2 - By 2020, the Town shall explore and report on feasible options to increase the number of new street trees planted, and increase the tree canopy coverage by at least 20% between 2020 and 2025.

Policy 6.3 - The Town shall encourage and accommodate the use of Low Impact Development (LID) where feasible to preserve open space.

Policy 6.4 - The Town of Surfside shall evaluate stormwater management operations in the context of sea level rise to improve the ability of these systems to adapt.

Policy6.5 - The Town shall encourage and accommodate the use of green roofs to contribute to reduced heat island effect and enhanced stormwater management.

Policy 6.6 - When source water is available, the Town shall support the use of reclaimed water for irrigation and other uses, with the goal of reducing demands on the Biscayne Aquifer.

Policy 6.7 - The Town of Surfside shall continue to participate in regional water conservation initiatives in coordination with the South Florida Water Management District, Miami-Dade County and other agencies.