2020 - 2030
USF Master Plan Updates

Data Collection & Analysis

Element 8: Conservation & Coastal Management

UNIVERSITY OF SOUTH FLORIDA

ST PETERSBURG CAMPUS

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Element 8 Conservation

(1) Purpose

This element aims to ensure the conservation, protection, and wise use of all-natural ecosystems and natural resources on the University campus and in the context area.

(2) Data Requirements

(A) Inventory of the following existing natural resources on the USF St Petersburg Campus or within the context area adjacent to the University.

1. Wetlands, lakes, rivers, and other surface waters and bottomlands

Bayboro Harbor surrounds the peninsula that houses the College of Marine Science and FWC facilities to the west and the Port of St. Petersburg waters to the east. The Poynter Library, Davis, Coquina, and Bayboro Hall are located along the Bayboro Harbor water frontage. Bayboro Harbor provides recreational marina facilities, while the Port of St. Petersburg operates as a commercial docking and cruise facility.

There are no rivers, lakes, or significant waters located within the St. Petersburg Campus. To the south, entering into Bayboro Harbor and in the Bayboro Redevelopment Plan is Salt Creek, associated with a heavy commercial district.

A portion of the "bottomlands" within Bayboro Harbor immediately south of the Poynter Library and Bayboro Hall is "controlled" by the University. A license agreement with the City exists for the USF St Petersburg campus Haney Landing Sailing Center. Bayboro Harbor's balance is City property, and license agreements for the areas that the existing docks and dolphins encompass need to be entered into. Any future expansion or modifications to the docks will require a new lease, license, or use agreements or amendments to the City's existing license agreements.

Bayboro Harbor is designated as an Outstanding Florida Water and also recognized as a Manatee habitat area. Bayboro Harbor is part of Tampa Bay which is part of the National Estuarine Program.

2. Floodplains

According to the Flood Hazard Boundaries map in the City's Comprehensive Plan, the entire Campus, except for the southeast corner of Sixth Avenue South and Fourth Street South, is located within Flood Zone AE-8, an area of 100-year floods. This classification requires that the base flood elevation for new construction be eight feet above mean sea level. They are shown in Figure 8A-a.

3. Known unique geological features (springs, sinkholes, etc.)

Other than the Bayboro Harbor and the Port of St. Petersburg's bayfront waters, there has been no information provided that would indicate that there are any other unique geological features within the context area.

4. Existing mitigation sites

No existing mitigation sites have been identified on Campus or within the context study area based on information provided.

5. Existing fisheries, marine wildlife habitats, and vegetative communities

The USF St Petersburg campus is located along Bayboro Harbor on the western shore of Tampa Bay. The waters immediately adjacent to the USF Campus provide a recreational fishery which includes the gamefish snook and tarpon. The seas adjacent to the USF campus are part of the Pinellas County Aquatic Preserve, designated as an Outstanding Florida Water. They are also recognized as a Manatee habitat area.

The USF St Petersburg campus is located within the downtown boundaries of St. Petersburg and is an urban campus. The Campus has been expanding upon previously developed urban properties.

Bayboro Harbor, Salt Creek, and a portion of the Port of St. Petersburg are identified and recognized as a manatee habitat area (See Figure 13-a). Particular concern should be associated with any expansion of land area or boat activity within Bayboro Harbor.

During the cooler months of the year, manatees have been identified as frequenting Bayboro Harbor, and Salt Creek is warmer. Also, on-site observations have noticed dolphins residing in the harbor. No other information has been provided relating to animal species.

6. Well, field cones of influence

The USF St Petersburg Campus is provided its potable water and reclaimed water for irrigation through the City of St. Petersburg system. No wells or well-field cones of influence have been identified.

7. Aquifers and aquifer recharge areas

The general geologic character and high water table in St. Petersburg (approximately one to two feet below ground surface) do not promote recharge to the Floridian aquifer. Recharge to the water table (shallow aquifer) does occur by percolation through the soil.

8. Air quality, including but not limited to the pollutants subject to National Ambient Air Quality Standards

According to the City's Comprehensive Plan, the City of St. Petersburg is considered a Class Two area, as defined by the Clean Air Act. A Class Two area exhibits cleaner air quality levels than national standards for most of the indicative parameters. Pinellas County Department of Environmental Management monitors four air quality stations within the City of St. Petersburg. Current data regarding the specifics of these monitoring reports have not been provided.

When requested, the University has done air quality testing on specific buildings since the 1995 Master Plan.

9. Surface Water quality, including but not limited to nitrogen, phosphorus, coliform bacteria, and dissolved oxygen

No specific review of water quality is required. However, Salt Creek, located on the south side of Bayboro Harbor and off Campus, is a tidal creek, transitioning from saltwater to freshwater. Based upon the ecological assessment classification and management of tidal creeks performed by the Tampa Bay Regional Planning Council (TBRPC) in 1986, Salt Creek's condition was identified as "stressed." The increased load of nutrient-laden stormwater runoff from development changes the natural watercourses and vegetation. The City of St. Petersburg has prepared a Stormwater Master Drainage Plan for the entire City, including the Campus. The City is now in compliance with National Pollutant Discharge Elimination System regulations and addresses these water quality issues. Drainage plans for the Campus are coordinated with the City's Stormwater Master Drainage Plan and NPDES regulations.

Bayboro Harbor is designated as an Outstanding Florida Water. Consequently, SWFWMD will require that stormwater treatment be provided at a volume of 50 percent more than needed for standard retention areas or first-inch runoff from the contributing basin area.

10. Known septic tanks and grease traps, storage sites of hazardous, toxic, or medical waste

Chemical and biohazardous waste at the Marine Science Laboratory is stored on-site under the Knight Oceanographic Center (KRC) close to the MSL loading dock. It is removed on an as-needed basis by outside vendors. Used engine oil and fuel oil from boat operations is transported on an as-needed basis by external vendors.

There are no septic tanks on Campus. On-site cafeterias are the only buildings on Campus with a grease trap. Two buildings, KRC and CRI, temporarily store hazardous waste for a total of up to 90 gallons.

There is a dilution tank of approximately 50-gallon capacity located just west of the USF St Petersburg campus Research Laboratory Building (KRC). Service of this hazardous waste facility is coordinated with the removal of Marine Science Laboratory hazardous waste.

11. Chemical and hazardous waste disposal systems

The Campus has made arrangements to transfer hazardous waste generated by the Marine Science Laboratory and the USF St Petersburg campus Research Lab (KRC) on an as-needed basis by outside vendors, including chemical, nuclear, and other hazardous wastes. Engine oil and fuel oil associated with the boat operations are removed by outside vendors every month and disposed of at a processing plant in Tampa.

12. Surface groundwater hydrology

According to the Soil Conservation Service (SCS) of the United States Department of Agriculture, the campus soil is designated as urban land. SCS has not documented information regarding the depth of seasonal high water and impermeability for this soil type. Soil borings conducted immediately to the east of the Campus have indicated that the seasonal high water line was approximately 24"- 36" inches below grade.

(B) Summary of Inventory Findings

The USF St Petersburg campus is located along Bayboro Harbor, designated as an Outstanding Florida Water and recognized as a manatee habitat area. This designation will require that stormwater treatment be provided at a volume of at least 50 percent more than what is necessary for standard detention areas. Also, given that Bayboro Harbor is identified as an Outstanding Florida Water, it is classified as a conservation area requiring a management and monitoring plan.

(3) Analysis Requirements

(A) For each of the resources identified above, identify existing commercial, recreational, or conservation uses.

Bayboro Harbor and the Port of St. Petersburg are utilized by the on-going operations and research of the Marine Sciences and FWC Facilities located on the Campus's peninsula. In addition to these facilities' boat operations, open space/passive recreation utilization of the Bayboro Harbor frontage is utilized near the Poynter Library and Davis Hall. Immediately to the south of the University is a commercial marina for recreation and pleasure crafts.

The Campus has a University sail club that is not open to the public. The public utilizes the Bay area at the USF St Petersburg campus for recreational fishing, as do commercial guides.

(B) For each of the resources identified above, assess the available and practical opportunities and methods for protecting or restoring those resources on University property.

The expansion and utilization of the open space abutting Bayboro Harbor should be encouraged. Although the Campus is an extension of Downtown St. Petersburg and on-campus resources are minimum, the creation of open space along Bayboro Harbor within the City's rights should be encouraged.

Given that Bayboro Harbor is identified as an Outstanding Florida Water, it is classified as a conservation area requiring a management and monitoring plan. The USF St Petersburg campus Master Plan includes numerous objectives and policies that should provide protection and improvement of the resource.

(C) For each of the resources identified above, identify known sources and rates of discharge or generation of pollution.

There is no discharge of chemicals on Campus. All chemicals utilized in research activities are picked up regularly by our Environmental Safety Team and disposed of properly by outside vendors contracted for this service.

(D) For each of the resources identified above, assess opportunities or available and practical technologies for reducing pollution and its impacts generated by the USF St Petersburg campus.

Currently, the host community conforms to the National Pollutant Discharge Elimination System Program. The University cooperates with the host community in this program to identify opportunities to eliminate stormwater borne pollutants further. Potential options include street cleaning and additional stormwater filtering programs. Opportunities to utilize alternative fuel vehicles for on-campus utilization, including natural gas vehicles, could reduce air-borne pollutants. Opportunities to mitigate traffic and parking will also further reduce and improve air quality demands on the University campus.

(E) An analysis of current and projected water needs and sources, based on the demand for industrial, agricultural, and potable water use and the quantity and quality available to meet those demands.

See Element 7A for details on potable water.

(F) Methods and technologies to reduce USF St Petersburg campus energy consumption.

As appropriate, opportunities to utilize solar energy as an alternative source of power for the irrigation systems, lighting, potential on-campus shuttles, emergency phones, etc., should be considered to reduce these energy demands. Also, utilizing alternative fuel vehicles for on-campus uses, including compressed natural gas or electricity, should be considered. All new buildings should be sited to minimize solar heat gain.

Element 8A:

St Petersburg Coastal Management

Element 8A Coastal Management

(1) Purpose

This Coastal Management section aims to protect residents and property on the USF St Petersburg campus located within the coastal area of the host community. The Coastal Management goal of the USF St Petersburg Campus Master Plan is for campus development to enhance access and improve the Bayboro Harbor waterfront environment and strengthen emergency preparedness for the Campus.

(2) Data Requirements

(A) Inventory all land uses and facilities on the USF St Petersburg campus property within the coastal area.

The majority of the 62.9-acre Campus, including its buildings, structures, roadways, and infrastructure system, is located within a designated flood plain. A six-foot-wide concrete seawall contains the peninsula containing the College of Marine Science facilities, the Florida Fish and Wildlife Conservation Commission (FWC) facilities, and the property along Bayboro Harbor. This seawall is divided into two distinct sections. A 2.5-foot wide area of the structure's landside is owned and maintained by the USF St Petersburg campus. The remaining 3.5-foot section seaward of this divide is built out over submerged lands owned by the City of St. Petersburg and, as the City controls, a result. The City was granted ownership of submerged lands in Bayboro Harbor from 14th Avenue South northward to Coffeepot Bayou by Florida in 1918. In 1982 and subsequently, USF has installed improvements including, but not limited to, seawalls, tie poles, pilings, and docks ("Improvements") on the City's submerged lands in Bayboro Harbor. Licensing agreements were executed in 2013, covering the bottomlands in Bayboro Harbor. Additional contracts would be structured with the City to accommodate programmatic changes and future expansions of marine-related activities. USF St Petersburg campus will comply with City regulations governing the City's submerged lands and negotiate any agreements required by the City.

The Campus is located in Flood Zone AE-8 with a base flood elevation of 8.00 feet NAVD 88. All new structures are being constructed to meet the 100-year floodplain requirements. Note, the City of St. Petersburg has adopted as code a minimum finished floor elevation of the 1'above base flood.

The Campus's current southern boundary is the seawall edge running from the City-owned Poynter Park to the peninsula extending into Bayboro Harbor. For ease of circulation and maneuvering, the peninsula has an existing impervious surface perimeter abutting the seawall. The Campus's academic portion connecting Bayboro Harbor is set back with an open space buffer extending from the peninsula west to Poynter Park.

(B) Inventory natural features on the USF St Petersburg campus property within the coastal area.

As an urban campus utilizing previously developed urban property, there are no existing wetlands or significant vegetation cover. Due to the Campus's location, it is subject to storm surges and tidal fluctuations. The most critical wildlife habitat in the region is located within Bayboro Harbor and Salt Creek, designated as habitats for the manatees.

(C) As applicable, an inventory of on-campus estuary conditions.

Not applicable.

(C) No campus facilities have been designated as public hurricane shelters.

The Campus is located in Evacuation Zone A. Those areas with a level "A" designation would mean that a Category 1 storm is affected by storm surge heights of 4 to 7 feet above normal. Zone B would require evacuation during a Category 2 storm with a storm surge height of 6 to 8 feet above normal. Zone C would require evacuation during a Category 3 hurricane with storm surge heights of 9 to 12 feet above normal. Zone D would require evacuation during a Category 4 storm with a surge of between 13 and 18 feet above normal. Zone E would evacuate for a Category 5 storm and predicted surge heights above 18 feet.

Currently, none of the existing structures on the Campus are designated as shelters. The closest hurricane shelters are the John Hopkins Middle School at 701 Sixteenth Street South, accommodating special needs with a capacity of 1,113 people, and Campbell Park Elementary School at 1051 7th Avenue South that can hold 2,660 people. The need to evacuate from Campus to a nearby shelter would primarily affect

resident students as the hurricane warnings generally provide enough lead time for the University to announce whether it will close to allow faculty and staff to evacuate from home if necessary.

According to the Pinellas County Emergency Management Department, Pinellas County hurricane shelters can house approximately 73,440 people. This study includes evacuation times, routes, and shelter capacity. To evacuate from Pinellas County completely, the major evacuation route is I-275 to Hillsborough County.

(D) Inventory of existing beach and dune systems on the USF St Petersburg campus property.

Not applicable.

(E) Inventory of public access facilities on the USF St Petersburg campus property.

The boat docks and launching facilities currently on the peninsula are utilized by the FWC, the College of Marine Science, and, occasionally, the US Geological Survey. Generally, public access to the ramps or docks used for research should not be encouraged or permitted. The general USF St Petersburg campus community has access to the harbor via the Haney Landing Sailing Center and the USF Waterfront office. Still, there are no facilities available to the general public. There is a public access easement to the City along the south 20 feet of the property known as Harbor Hall.

(F) Identification of Coastal High Hazard Areas

The coastal high hazard area is defined as the area below the elevation of the Category 1 storm surge line as established by a Sea, Lake and Overland Surge from Hurricanes ("SLOSH") computerized storm surge model as reflected in the most recent Regional Hurricane Evacuation Study, Storm Tide Atlas Volume 7 prepared by the Tampa Bay Regional Planning Council in 2010. Tidal flooding occurs along Salt Creek due to the low height of existing seawalls. St. Petersburg is not as subject to the direct wave action and erosion as the western coast of Pinellas County. Therefore, St. Petersburg does not have a Coastal Construction Control Line nor the construction standard established to regulate the more vulnerable development of the west coast of Pinellas County. The most susceptible areas in the City are those designated within Evacuation Zone "A," including the University's Campus's peninsula.

(2) Analysis Requirements

(A) Measures to reduce exposure to hazards for buildings, structures, and infrastructure identified above.

The peninsula of the Campus is located in Evacuation Zone A. To reduce exposure to hazards for existing and future facilities, the University should design new facilities per the Florida Building Code as amended. Existing facilities should be evaluated and retrofitted following the Florida Building Code as amended.

New buildings shall be constructed following the Florida Building Code as amended but should not be designated shelters due to their location within evacuation zones.

(B) Analysis of the impact of any proposed development on natural resources

The University shall continue to construct new facilities per applicable Natural Resource regulations including, but not limited to those of the FDEP, Florida Fish and Wildlife Conservation Commission (FWC), Southwest Florida Water Management District (SWFWMD), United States Fish and Wildlife Service, and the US Army Corps of Engineers.

(C) Analysis of impacts of any Proposed development on Estuarine Environmental Quality.

A Stormwater Master Plan was prepared for the University for the Master Plan by GGI. This effort recognizes that stormwater quality treatment needs to be provided on a Campus-wide basis. This effort also acknowledges that portions of the Campus were built before implementing various stormwater ordinances and, therefore, do not conform. An attempt to bring the entire Campus into conformance with the multiple regulations is proposed. Efforts to reduce the impact of stormwater runoff can be realized by constructing more green space within the Campus. One such project, Harborwalk, has reduced the amount of impervious surface on Campus, allowing for more ground saturation/penetration and less stormwater to carry surface pollutants into the harbor. What runoff does occur has been directed to a drainage detention pond. Additional green space is planned, which could further benefit the estuarine environment.

(D) Analysis of Host Community's Plans and Procedures for Hurricane Shelter needs.

No campus buildings are designated hurricane shelters. The TBRPC is responsible for the preparation of regional hurricane evacuation plans. Their studies utilized the Sea, Lake, and Overland Surge Hurricane Model (SLOSH). The SLOSH model (developed by FEMA, the US Army Corps of Engineers, and the National Weather Service) considers hypothetical hurricanes ranging from Category 1 (least intense) to Category 5 (most intense). The Campus is located in Evacuation Zone A. All of the Pinellas County evacuation corridors include travel through either Hillsborough County or Pasco County. The Pinellas County Planning Department has divided the County into north and south sections. Also, they have identified primary and secondary shelter locations in both the north and south districts. The John Hopkins Middle School and Campbell Park Elementary school are the closest shelters to the University. TBRPC's 2010 Evacuation Study Update indicates an overall shelter capacity of 73,440. This capacity will meet the demands of Evacuation Levels "A." All shelters are operated by the American Red Cross and work on a first-come, first-serve basis. The American Red Cross is located at 818 4th Street North, St. Petersburg, FL 33701. 727-893-3111. www.redcrosstbc.org.

(E) Analysis of the availability of large tracts of open space might be suitable for staging emergency resources.

The Campus is located in Evacuation Zone A. In the City's Disaster Recovery Plan, the largest tract of open space they have identified as suitable for staging emergency resources is located at the Tropicana Field in western Downtown. Due to the campus location within these evacuation zones, it is anticipated that immediately after a hurricane occurrence, portions of the Campus could still be flooded and would not be suitable for staging. Information on the City's Emergency Recovery Plan can be obtained from the City of St. Petersburg at www.stpete.org/fire/emergency.

(F) Projection of Future Hurricane Shelter Needs.

Pinellas County's population will continue to grow, including the people in the hurricane evacuation zones. This growth will increase the number of people evacuating these zones before a hurricane, shelters, and evacuation routes. Pinellas County is in the process of implementing several options to increase hurricane evacuation response, including computerized traffic signalization, allowing for an increased percentage of green time for evacuation routes at critical intersections. Road improvements along essential routes of evacuation have also been identified and prioritized. Pinellas County and TBRPC have determined that additional shelters will be required. This is partially due to the increase in population, including the number of hospital beds, nursing homes, and people over 75 that will not evacuate to in-land areas.

The University shall continue to prepare and provide awareness information to enrolling students and faculty regarding the evacuation plans, including on- and off-campus shelter locations and evacuation routes.

(G) Adequacy of Existing Beach and Dune Protection and Enhancement Features

A concrete reinforced seawall establishes the campus shoreline. There are no beaches or dunes on site.

(H) Analysis of Capacity of and Need for Public Access Facilities to the Beach or Shoreline

The Master Plans have identified the closure of existing City rights-of-way and roads to create pedestrian open space and plazas. Acting as extensions of Downtown St. Petersburg, the city block configuration encourages pedestrian access. The Master Plans have also proposed expanding the open space along Bayboro Harbor eastward towards the peninsula and unifying it with the City-owned Poynter Park to the west. Due to the on-going research and operations on the peninsula by the College of Marine Science and the FWC, public access should be limited. While the City did not allow for most of the proposed road closures, the open space along the waterfront (except for the peninsula) has been extended and improved, and the public has full access to all of these areas.

The University shall evaluate, as appropriate, opportunities for the public to have access to the peninsula. Concerns regarding safety, access, and coordination with the City of St. Petersburg shall be considered.