

18.0 COASTAL MANAGEMENT ELEMENT

(1) DATA REQUIREMENTS

a) Inventory Of All Land Uses And Facilities On The University Property Within Coastal Area

MODESTO A. MAIDIQUE

Refer to 4.0 Future Land Use, 5.0 Academic Facilities and 6.0 Support Facilities Elements for an inventory of all land uses and facilities included at Modesto A. Maidique is not classified as a coastal zone.

Engineering Center

Refer to 4.0 Future Land Use, 5.0 Academic Facilities and 6.0 Support Facilities Elements for an inventory of all land uses and facilities included at Engineering Center. Engineering Center is not classified as a coastal zone.

BISCAYNE BAY CAMPUS

Refer to 4.0 Future Land Use, 5.0 Academic Facilities and 6.0 Support Facilities Elements for an inventory of all land uses and facilities included at Biscayne Bay Campus.

According to Flood Insurance Rate Maps (revised 16 October 1992), the entire Biscayne Bay Campus and context area is classified as coastal zone. The reader is referred to the inventory of land uses and facilities contained in 13.0 Conservation Element of this Master Plan Revision and other appropriate sections of this document.

b) Inventory Of Natural Features On The University Property Within The Coastal Area

BISCAYNE BAY CAMPUS

According to Flood Insurance Rate Maps (revised 16 October 1992), the entire Biscayne Bay Campus and context area is classified as coastal zone. The reader is referred to the inventory of wetlands, vegetative cover, areas subject to coastal flooding, and wildlife habitats contained in 13.0 Conservation Element of this Master Plan.

c) Inventory Of On-Campus Estuarine Conditions

BISCAYNE BAY CAMPUS

The northeastern edge of Biscayne Bay Campus abuts a small estuary that extends northward from the Intracoastal Waterway and Biscayne Bay (the reader is referred to the 1988 Master Plan update).

Biscayne Bay and all natural waterways (including the Oleta River and the estuary

at the north end of Biscayne Bay Campus) tidally connected to the Bay have been designated as the Biscayne Bay Aquatic Preserve, a Miami-Dade County preserve.

d) Campus Facilities Designated As Public Hurricane Shelters

The South Florida hurricane season last from June through November each year. FIU has developed a plan for evacuation in case of hurricane or other emergencies and threats to public safety. The Emergency Operations Plan, which is updated annually, describes the necessary preparation and implementation of actions required to secure the University and evacuate the campus. This report includes specific responsibilities of essential personnel during these times.

Signs are posted at each entrance to Modesto A. Maidique indicating emergency routes to help direct the on campus traffic generated by such events. Broadcast agreements with local radio and television stations are established in order to communicate to the University's faculty, staff, students, and the surrounding community in case of emergency.

In the event of a hurricane, Biscayne Bay Campus would be completely evacuated, due to its location in the coastal zone and vulnerability to hurricane storm surge. Students living in on-campus housing on each campus will be provided with shelter at Modesto A. Maidique. Because Modesto A. Maidique is located on uplands at the western developed fringe of Dade County (Flood Zone X) it is not considered vulnerable to storm surge. In fact, due to its relatively protected location, the largest campus building, Primera Casa, serves as a shelter for evacuees for hurricanes with intensities up to and including Category 5.

Shelter Space

Each county in South Florida has developed a hurricane evacuation plan, which includes a series of designated public shelter spaces. On behalf of the Board of Regents, FIU has formed an agreement with the American Red Cross and the Monroe County Office of Emergency Management to provide emergency shelter "during hurricanes or other disasters which cause the evacuation of residents from Monroe County and for resident students who have not left campus". At present, Monroe County relies solely upon FIU to provide shelter for up to 5,000 evacuees from storms in Categories 3 through 5. The shelter space is based upon a standard of 20 square foot per person. However, the Monroe County Comprehensive Plan indicates a need for more than double this capacity. Consequently, FIU representatives have identified possible additional shelter capacity to meet the needs of Monroe County.

The second, third and fourth floor hallways and designated classrooms of Primera Casa are identified as temporary housing for individuals and families who have been evacuated due to a hurricane or disaster. Communication systems have been installed in rooms that are designated as "Command Central" for managers

of the Red Cross and Monroe County, and areas designated as a temporary infirmary. Parking for all shelter residents and staff will be located in the parking lot east of Primera Casa.

Responsibilities have been outlined for the various agencies to ensure smooth operation of the shelter. FIU Physical Plant personnel are assigned to provide building and maintenance service to residents and families, schedule appropriate work crews to handle building sanitation, and maintain control of access to restricted areas. The Red Cross will be fully responsible for the operation of the shelter as a temporary housing facility. They will provide volunteers, food and food service, water and other emergency supplies. If the need for emergency shelter continues for an extended period, FIU will provide alternate areas to move the shelter, so the Primera Casa can be converted into educational uses within a period of five days. The primary function of Monroe County is to establish a temporary infirmary, which will be fully staffed, supplied, and operated by the County's Emergency Medical Services.

Hurricane Evacuation

During the evacuation caused by Hurricane Andrew in 1992, the majority of students who live on campus took shelter at Modesto A. Maidique at Primera Casa. If the majority of students were to require emergency shelter while classes were in session, provisions would need to be made for approximately 4,000 FIU students in addition to evacuees from Monroe County and the shelter staff. The Primera Casa building currently has a housing capacity for 1,800 people. If extra space is needed, additional shelters and infirmaries may be established on the FIU campus through the mutual agreement of FIU, the Red Cross and the county. This additional space could be accommodated in Golden Panther Arena hallways, which will be convenient because of the amount of space and shower facilities available.

Hurricane Preparation

Preparation of the Primera Casa building for occupancy of evacuees will begin after Monroe County Emergency Management or the American Red Cross contacts FIU Public Safety Department. When possible, FIU will be given a 36-hour advance warning. The three party agreement states that "depending on the extent of the disaster and the number of people requiring shelter the facility will be vacated no later than 5 days after the disaster", although, if the need for emergency shelter continues for an extended period, FIU can provide alternate areas to move the shelter, so the Primera Casa can be converted into educational uses. The primary function of Monroe County will be for the establishment of a temporary infirmary, which will be fully staffed, supplied, and operated by the County's Emergency Medical Services.

Post Hurricane Actions

The University Emergency Operations Plan lists the necessary post-hurricane actions to return the facilities to campus use. The plan includes damage

assessment, media communication, information hot-line activation, securing hazardous areas, and documentation of damages to ensure safety and to resume University operations as quickly as possible.

In compliance with Florida Statute 240.295, FIU has identified public shelter space to house students, faculty and staff expecting to require shelter space in time of disaster. Based on criteria provided by the BOR, Table 18.1 shows the following space has been set aside for times of disaster.

Table 18.1 Facilities Designated as Hurricane Shelters

CURRENT FACILITIES DESIGNATED AS PUBLIC HURRICANE SHELTER	DURING A DISASTER	AFTER A DISASTER
Charles E. Perry Primera Casa	58,873 sf	65,840 sf
Ernest F. Graham University Center	9,811 sf	50,029 sf
Green Library	6,474 sf	6,474 sf
Golden Panther Arena (w/roof reinforcing)	49,483 sf	49,483 sf
Engineering & Computer Science	12,417 sf	24,487 sf
Ryder Business Administration	7,425 sf	7,425 sf
Chemistry & Physics	0 sf	35,468 sf
Health and Wellness Center	0 sf	13,576 sf
TOTAL	144,483 sf	252,782 sf

Additional shelter space will become available as planned projects near completion of construction. The following projects shown in Table 18.2 are presently in construction or design and may be considered for shelter space.

Table 18.2 Additional Shelter Space Available

Labor Center	4,040 sf
Multi-Purpose Stadium Complex	1,465 sf
Ryder Business Administration Building	3,900 sf
Fitness Center	800 sf
Graham Center	12,337 sf
Arts Complex I	14,620 sf
Campus Support Complex	3,585 sf
AT Library Addition	7,070 sf
TOTAL	47,817 sf

Based on the assumption that approximately 25% of the University population would seek shelter at Modesto A. Maidique, the following space will be required by the end of the planning period:

- Total shelter space required during a storm (based on 20 sf/person):
203,805 sf

- Total shelter space required after a storm (based on 40 sf/person):
497,600 sf*

*This number will be much lower due to the fact that most evacuees will return to their own residence

In addition to providing shelter for the University community, FIU will provide shelter space for Monroe County evacuees.

- Total shelter space required by Monroe County (5,000 people) during a storm (based on 20 sf/person):
100,000 sf

Given the space requirements and the future space availability at Modesto A. Maidique, FIU will be able to provide a sufficient amount of shelter space for the projected ten year University enrollment in the event of a disaster. This will, however, require coordination with the American Red Cross to ensure that new buildings include hurricane shelter criteria.

e) Inventory Of Existing Beach And Dune Systems On The University Property, Including Erosion And Accretion Trends, And An Identification Of Existing University Programs To Protect Or Restore Beaches Or Dunes

BISCAYNE BAY CAMPUS

Beaches at Biscayne Bay Campus are limited to short, poor quality stretches along the coastline. No dunes are present on Biscayne Bay Campus. Rip-rap was installed along portions of the shoreline of Biscayne Bay Campus and in various areas within the context area in order to stabilize shorelines and prevent erosion. Please refer to 13.0 Conservation Element's Wetland Mitigation Sites for more information concerning these mitigation projects.

Within the context area, only one beach was created as part of a mitigation project at Oleta River State Recreation Area in 1986 (see 13.0 Conservation Element's Wetland Mitigation Sites,). There are no dunes in the context area.

Shoreline accretion and/or erosion trends: Historical aerial photos of Biscayne Bay Campus for the years 1985, 1988, and 1990 were obtained in order to search for evidence of shoreline accretion and/or erosion trends. Analysis and comparison of these photos revealed areas in Biscayne Bay located directly east of Biscayne Bay Campus, which appeared darker than the surrounding water. These areas may represent dredging activity. There was no evidence in the photos of either shoreline accretion or erosion. Rip-rap has been placed along the shoreline (Wetland Mitigation Sites, in 13.0 Conservation Element of this Master Plan).

f) Inventory Of Public Access Facilities, Including Access Points To Beaches Or The Shoreline, Ramps, Docks Or Other Public Use Facilities On The University Property

BISCAYNE BAY CAMPUS

No public access facilities exist on this campus. The existing dock is for university use for the Marine Biology program.

g) Coastal High Hazard Area And Inventory Of Improvements And Infrastructure

BISCAYNE BAY CAMPUS

According to Flood Insurance Rate Maps (revised 16 October 1992), Biscayne Bay Campus and context area are not classified as coastal high hazard area. Refer to the inventory of land uses and facilities contained in 13.0 Conservation Element of this Master Plan Revision.

(2) ANALYSIS REQUIREMENTS

(a) Measures To Reduce Exposure To Hazards For Identified Facilities

BISCAYNE BAY CAMPUS

All new construction and renovation of existing facilities must comply with current Building Codes and Public Shelter Criteria, when applicable, as outlined in Section 235.26 (8)(a), F.S. The State of Florida Building Codes outlines specifications related to building structure and material that are intended to reduce exposure to hazards in coastal zone areas.

(b) Impacts Of Proposed Development On Identified Natural Resources And Strategies For Avoidance And/Or Mitigation Of Impacts

BISCAYNE BAY CAMPUS

Some buildings and other improvements to Biscayne Bay Campus are proposed in areas that are adjacent or in close proximity to lake littoral zones and other natural vegetation associations. A vegetated buffer zone should be maintained around existing natural vegetation associations to minimize the impacts or proposed developments on the natural functions and values of these areas.

The majority of the buildings and other improvements planned for Biscayne Bay Campus are sited within areas presently occupied by Australian pine-dominated forests. Because this vegetation association is considered undesirable, construction in Australian pine forests should not have any appreciable negative impact on natural resources except as these developments impact adjacent or nearby vegetation associations or potentially jurisdictional wetlands.

Some of the proposed improvements at Biscayne Bay Campus may impact lake

littoral zones and other areas that may be jurisdictional wetlands (see 13.0 Conservation Element). Prior to commencement of construction activities in potential jurisdictional wetland areas, the University should have a binding jurisdictional wetlands determination performed, and, if necessary, perform any required mitigation.

(c) Impacts Of Any Proposed Development On Estuarine Environmental Quality, Strategies To Minimize Impacts Of Development And A Feasibility Analysis Of Mitigating Impacts Of Identified Pollution Sources

BISCAYNE BAY CAMPUS

Methods for protection and enhancement of natural resources at the Biscayne Bay Campus are discussed in 13.0 Conservation Element.

No improvements are proposed in the immediate vicinity of the on-campus estuary. However, the absence of water quality monitoring precludes determining whether or not existing campus activities have significantly affected estuarine water quality. Methods for protection and enhancement of estuarine environments at the Biscayne Bay Campus are discussed in 13.0 Conservation Element.

(d) Host Community's Plans And Procedures For Hurricane Evacuation And Sheltering, Including The Requirements For The Use Of University Facilities As Public Shelters

The host community, Monroe County, hurricane evacuation plan is outlined in Section 18 (1) d) of this report.

(e) Adequacy Of Existing Beach And Dune Protection

BISCAYNE BAY CAMPUS

No dunes are present at Biscayne Bay Campus, and beaches are limited to stretches along the coastline. Extensive shoreline enhancements have been done in the context area of Biscayne Bay Campus and are planned for Biscayne Bay Campus itself. Because it appears that no appreciable accretion or erosion is occurring with regard to the beaches in the context area, existing and planned enhancements are probably adequate to protect campus beaches.

(f) Capacity Of And Need For Public Access Facilities To The Beach Or Shoreline

BISCAYNE BAY CAMPUS

There is currently no need for public access facilities to the Biscayne Bay shoreline at Biscayne Bay Campus due to the proximity of Oleta State Park,

which provides many public waterfront activities. Waterfront activity should be limited to the University community and not be promoted for public use due to liability. It also allows the University to control use of its facilities. However, the Master Plan outlines waterfront enhancements that include a continuous promenade at the water's edge with intermittent structures and extends the existing open space buffer towards the southern peninsula where beach activity could be developed.