Memorandum

MIAMI-DADE COUNTY

Date: January 21, 2010

To: Honorable Chairman Dennis C. Moss and Members, Board of County Commissioners

Agenda Item No. 8(D)(1)(F)

From: George M. Burgess
County Manager

Subject: Resolution Approving the Submittal of a Beach Erosion Control Funding Request for FY 2010-11 and Long Range Budget Plan to the Florida Department of Environmental Protection and Authorizing the Request of Grant Funds for Beach Erosion Control Activities

---

Recommendation

It is recommended that the Board approve the attached resolution authorizing the submittal of a Miami-Dade County Beach Erosion Control Funding Request for FY 2010-11 and Long Range Budget Plan to the Florida Department of Environmental Protection, authorizing the request of grant funds for beach erosion control activities and providing a local commitment to match grant funds allocated for that purpose.

Scope

While Miami-Dade's beach areas are considered countywide economic and recreational resources, these beach areas are located within Commission Districts 4, 5, and 7.

Fiscal Impact/Funding Source

The local match of $7.618 million needed for the attached Fiscal Year 2010-11 funding request is currently available as $4.618 million in the FY 2009-10 adopted budget, and $3 million in FY 2010-11 capital plan, programmed in Building Better Communities General Obligation Bond Funds. County staff is currently working to identify alternative funding sources for future year needs.

Background

The Miami-Dade Department of Environmental Resources Management (DERM) has served as the local project coordinator for all beach erosion control activities conducted throughout the County. In this role, DERM has annually prepared and submitted State funding requests for specific projects through a grants program administered by the Florida Department of Environmental Protection (FDEP). This program provides for state funding participation of up to 50% of the non-Federal cost of implementing eligible beach erosion control projects. As part of the grant application process, the FDEP requires that each county submit their annual funding requests as part of a long-term (ten-year) capital plan for planned beach erosion control activities. This process was implemented in order to enable the State to better prioritize and plan pending projects throughout Florida.

In developing the required ten-year capital plan (copy attached), the existing and anticipated beach erosion control funding needs were identified in coordination with the U.S. Army Corps of Engineers, the State, and the local coastal municipalities. The plan includes a number of elements, including conventional maintenance nourishment projects and activities intended to improve the durability and performance of the restored beaches, thereby mitigating the frequency and associated cost of future project maintenance. A description and cost estimate for each project is included in the plan.

Assistant County Manager

MEMORANDUM

(Revised)

TO: Honorable Chairman Dennis C. Moss and Members, Board of County Commissioners

DATE: January 21, 2010

FROM: R. A. Cuevas, Jr. County Attorney

SUBJECT: Agenda Item No. 8(D)(1)(F)

Please note any items checked.

_____ **"3-Day Rule" for committees applicable if raised**

_____ **6 weeks required between first reading and public hearing**

_____ **4 weeks notification to municipal officials required prior to public hearing**

_____ **Decreases revenues or increases expenditures without balancing budget**

_____ **Budget required**

_____ **Statement of fiscal impact required**

_____ **Ordinance creating a new board requires detailed County Manager's report for public hearing**

_____ **No committee review**

_____ **Applicable legislation requires more than a majority vote (i.e., 2/3's ____, 3/5's ____, unanimous _____) to approve**

_____ **Current information regarding funding source, index code and available balance, and available capacity (if debt is contemplated) required**

Approved _____Mayor

Veto _____

Override _____

Agenda Item No. 8(D)(1)(F)
1-21-10

RESOLUTION NO. _____

RESOLUTION APPROVING THE SUBMITTAL OF A BEACH EROSION CONTROL FUNDING REQUEST FOR FY 2010-11 AND LONG RANGE BUDGET PLAN TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION AND AUTHORIZING THE REQUEST OF GRANT FUNDS FOR BEACH EROSION CONTROL ACTIVITIES

WHEREAS, this Board desires to accomplish the purposes outlined in the accompanying memorandum, a copy of which is incorporated herein by reference,

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF MIAMI-DADE COUNTY, FLORIDA, that this Board approves the submittal of the Miami-Dade County Beach Erosion Control Funding Request for FY 2010-11 and Long Range Budget Plan to the Florida Department of Environmental Protection, authorizing the submittal of grant funding requests for beach erosion control activities and providing a local commitment to match grant funds allocated for that purpose.

The foregoing resolution was offered by Commissioner , who moved its adoption. The motion was seconded by Commissioner and upon being put to a vote, the vote was as follows:

Dennis C. Moss, Chairman
Jose "Pepe" Diaz, Vice-Chairman

Bruno A. Barreiro	Audrey M. Edmonson
Carlos A. Gimenez	Sally A. Heyman
Barbara J. Jordan	Joe A. Martinez
Dorrin D. Rolle	Natacha Seijas
Katy Sorenson	Rebeca Sosa
Sen. Javier D. Souto	

The Chairperson thereupon declared the resolution duly passed and adopted this 21st day of January, 2010. This resolution shall become effective ten (10) days after the date of its adoption unless vetoed by the Mayor, and if vetoed, shall become effective only upon an override by this Board.

MIAMI-DADE COUNTY, FLORIDA
BY ITS BOARD OF
COUNTY COMMISSIONERS

HARVEY RUVIN, CLERK

By:_____
Deputy Clerk

Approved by County Attorney as
to form and legal sufficiency.

Peter S. Tell

Miami-Dade County Beach Erosion Control

Local Government Funding Request for FY 2010-11

And

Long Range Budget Plan

2011-2020
August 2009

Prepared by The
Miami-Dade County Department of
Environmental Resources Management

5

Miami-Dade County Long Range
Beach Erosion Control Plan

Project Description

Note: The project description presented is applied to the entire Miami-Dade County Beach Erosion Control and Hurricane Surge Protection Project. More detailed information on the individual "sub-projects", including the specific projects for which FY 2010-11 funds are requested, are presented in New Projects portion of this submittal.

Project Name: Miami-Dade County Beach Erosion Control and Hurricane Protection Project. The project consists of initial restoration, ongoing maintenance renourishment, structural improvements, and monitoring of 13 miles of critically eroded shoreline extending from Golden Beach to Government Cut.

Project Location: Miami-Dade County, R7 through R74.

Project Description: The Miami-Dade Beach erosion Control and Hurricane Surge Protection Project (Miami-Dade Project) is a Federally-authorized shore protection project extending from Sunny Isles Beach through Government (R7 through R74). The project was initially constructed from 1975 through 1981 in a series of five construction contracts. Since that time, the project has had multiple maintenance nourishment projects to maintain the design profile. Historically, the sand sources for initial construction and subsequent renourishment projects have been offshore deposits, however these areas, with the exception of one remaining borrow site, have been depleted and alternative sources need to be identified.

Current management of the project includes two elements: 1) Conventional nourishment of the project conducted by the Corps of Engineers, and 2) locally conducted small scale nourishment projects conducted by the sponsor. The funds requested for FY 2010-11 will be utilized for both of these elements.

Use of Requested Program Funds: Funds requested for FY 2010-11 will be utilized for construction of two separate nourishment projects. The first is a nourishment project administered by the Corps of Engineers. This project will use the last remaining offshore borrow site in combination with the relocation of accretional material near the south terminus of the project, to nourish four eroded segments of the project in Miami Beach. The second portion of the project will be a locally conducted truck haul nourishment of eroded project segments in Sunny Isles Beach, Bal Harbour, and segments of Miami Beach. A detailed description of these projects is provided in the section titles "New Project Funding Requested for FY 2010-11".

Local Government Support:

Does the sponsor have dedicated support staff whose sole priority is to manage beach erosion control activities?

Yes

Name	Title	Email	% Commitment
Brian Flynn	Special Projects Administrator	flynnb@miamidade.gov	100%

701 NW 1st Court, 5th Floor
Miami, Florida 33136 Phone: (305)372-6850 Fax: (305)372-6425

Quarterly Report Compliance

2008-09	End Date	Report Sent	Compliant
Qtr 1	12/31/2008	3/13/2009	No
Qtr 2	3/31/2009	5/5/2009	No
Qtr 3	6/30/2009	7/9/2009	No

Revenue for Local Cost Share Will be Provided By: Local Matching funds will be provided by General Obligation Bonds approved by referendum in 2005 for a variety of large capital projects. A total of $17.5 million in bond funds were allocated specifically for beach erosion control activities.

Is Funding From a Dedicated Long Term Source for this Project? No

In order to acquire funding, a resolution from the local government entity must be provided by the application deadline which declares:

*Support from the sponsor for the proposed project
*Willingness to serve as the Local Sponsor
*Ability to provide the full local cost share
*Funding source

Has the local sponsor resolution been attached to the application fulfilling all of these requirements? The resolution is scheduled for approval in December 2009. A copy of the resolution to be approved is attached.

Previous Cost share for a feasibility or design/permitting phase of this project

The Department has provided funds for each phase of the project from initial construction in 1975 through current projects. The project is recommended in the Strategic Beach Management Plan and is located in an area that has been designated as critically eroded by the Department.

Previous State Cost Sharing Percentage: Varies based on project segment. Ranges from 28.7% to 50%.

10 Year Project Schedule and Five Year Estimated Budget

Does this project have Congressional Authorization? **Yes**

Does this project have a Federal Project Cooperative Agreement? **Yes**

What is the end date of the Federal Authorization? **2035**

Federal cost share available for this erosion control project: **50%**

Schedule and Budget (Includes estimated phases for 10 years and estimated project costs).

***Note: Local matching funds of $7,618,000 shown below for the FY 2010-11 request are available as $4,618,000 in FY 2009-10, and $3,000,000 in FY 2010-11, and will be used to match the 2010-11 State request. Reimbursement requests to the State for expenditures in FY 2019-10 may be billed to the State in FY 2010-11 based on State appropriations.**

(1)- Local funds currently available in FY 2009-10
(2)- Local funds available in FY 2010-11

State Year	Method	Description	Total	Federal	State	Local
						$4,618,000(1)
2010/	Construction	Nourishment	$22,570,690	$8,250,000	$6,702,690	$3,000,000(2)
2011	Monitoring	Physical	$ 350,000	$ 0	$ 175,000	$ 175,000
2011/	Construction	Nourishment	$1,000,000	$ 0	$ 500,000	$ 500,000
2012	Monitoring	Physical	$ 500,000	$ 0	$ 250,000	$ 250,000
2012/	Construction	Nourishment	$13,600,000	$6,800,000	$3,400,000	$3,400,000
2013	Monitoring	Physical	$ 500,000	$ 0	$ 250,000	$ 250,000
2013/	Construction	Nourishment	$13,600,000	$6,800,000	$3,400,000	$3,400,000
2014	Monitoring	Physical	$ 500,000	$ 0	$ 250,000	$ 250,000
2014/	Construction	Nourishment	$ 1,000,000	$ 0	$ 500,000	$ 500,000
2015	Monitoring	Physical	$ 500,000	$ 0	$ 250,000	$ 250,000

2015/	Construction	Nourishment
2016	Monitoring	Physical
2016/	Monitoring	Physical
2017		
2017/	Monitoring	Physical
2018		
2018/	Construction	Nourishment
2019	Monitoring	Physical
2019/	Construction	Nourishment
2020	Monitoring	Physical

Additional Ranking Criteria

Will this project enhance or increase the longevity of a previously constructed project?	**Yes**
Will this project nourish a previously restored shoreline?	**Yes**
Rate of erosion as determined by the Bureau based on long term data.	**4.1**

Severity of erosion: Miami-Dade County's shoreline is highly developed with an estimated beachfront property value in excess of $13.5 billion, not including infrastructure.

Nourishment Interval: Varies based on segment. Large areas of the project are stable or accretional while a number of localized erosion hotspots have required multiple and frequent nourishment. Corps planning documents project an 11 year nourishment interval project-wide. Miami-Dade County's strategy in planning and implementing nourishment activities is conducted in response to monitoring erosion project-wide, and targeting areas on an as needed basis. Historically, the nourishment intervals for the project segments separated by municipal boundaries are provided below. Please note that the nourishment interval for each area includes only large scale nourishments in excess of 100,000 cubic yards, as localized nourishments of erosional hotspots does not accurately reflect nourishment intervals for large segments.

Sunny Isles Beach (R7 through R19.5): Initial construction in 1988, first large nourishment in 2001= 13 year nourishment interval. Several small nourishments (3) at the

north end erosional hotspot which has been stable following construction of offshore breakwaters in 2001.

Haulover Park (R19.5 through R26)- Initial construction in 1977. Only major nourishment was in 1987 with 235,000 cubic yards= 16 year nourishment interval. There have been several small fill placements resulting from maintenance dredging of the flood shoal of Bakers Haulover Inlet.

Bal Harbour (R27 through R31)- Initial construction in 1975. Major nourishments in 1990 and 1998= 12.5 year nourishment interval. There have been several small fill placements resulting from maintenance dredging of the flood shoal of Bakers Haulover Inlet.

Surfside (R31 through R36)- Initial construction in 1979. First and only major nourishment project in 1999= 20 year nourishment interval.

Northern Miami Beach (R42 through R45)- Initial construction in 1980. Major nourishment projects in 1985 and 2001= 5.5 year nourishment interval. Have also conducted small scale truck haul nourishments of this area.

Central Miami Beach (R53 through R60)- Initial construction in 1980. Major nourishment projects in 1994, 1997 and 2001= 7 year nourishment interval. This area has been documented to have the highest erosion rate on the project.

South Miami Beach (R60 through R74) Initial construction in 1981. First and only nourishment in 1999, largely due to sand leakage from the north Government Cut jetty, which has since been sand tightened. Nourishment interval= 18 years.

Project Performance: The project performance to date has exceeded original estimates for projected renourishment interval. The "Miami-Dade County Morphological Change Study", which updated a regional sediment budget completed in 1998, found that while the project averaged a shoreline recession rate of approximately 4.1 feet/ year, that this did not translate into large volumetric losses in the active littoral system. Several localized segments of the project, termed "hotspots", had much greater rates of erosion of up to 25' of shoreline recession/ year. Studies to identify the causes of the high erosion rates in these areas have been conducted and structural approaches have been implemented at three locations, with a fourth in the final planning stages. Additional studies to evaluate the remaining areas are underway.

Use of Innovative Applications to Reduce Erosion: Several innovative erosion control projects have already been implemented, and other efforts are currently underway to evaluate potential mechanisms for improving the performance and cost-effectiveness of the project. Observed erosion/accretion trends for the project since initial construction

indicate that while much of the project area is stable or accretional, several segments have shown high rates of localized erosion, which has required repeated renourishments to maintain the project design dimensions. To begin to address these erosion "hotspots", Miami-Dade County commissioned a regional sediment budget in 1998 for the area from Port Everglades to Government Cut to quantitatively define the location and extent of these erosional areas, and the sediment transport mechanisms resulting from them. This sediment budget was updated with the completion of the "Miami-Dade County Morphological Change Study (Coastal Systems International, 2006), which also included evaluations and recommendations for known erosion hotspots. The second phase of this effort is the implementation of corrective measures at these areas. To date structural approaches have been implemented at three of the most severe hotspots. The first of these was the sand tightening of the north jetty at Government Cut. Documented high erosion rates coupled with sand accumulation within the inlet indicated significant leakage through the jetty. This was corrected in 1998 with the implementation of a sand-tightening project on the jetty through a U.S. Army Corps of Engineers contract. A second hotspot area located at 32nd street in Miami Beach was addressed in 2002. This project included the construction of three shore-attached breakwater structures in the vicinity of 32nd street on Miami Beach together will fill placement to backfill the structures. To date the project is performing well, however localized erosion immediately south of the structures necessitated renourishment of that area annually since 2005 with truck haul, or in one instance, hydraulic backpassing of accretional material from areas to the south. The Sunny Isles renourishment project, constructed in 2001, included the installation of two submerged breakwater structures, an increase in the design berm width for that segment, and the addition of a 1,500' transition fill at the north end of the project. These modifications of the authorized design are intended to better maintain the design dimensions at the north limit of the project, and to optimize the anticipated nourishment interval for the full 2.5 mile segment. Other pending projects include the construction of an experimental submerged Reefball breakwater structure in the vicinity of the 65th Street hotspot to be conducted by the Corps Engineering, Research and Design Center, and an evaluation of mechanisms for backpassing material from accretional to erosional segments of the project.

Summary and Descriptions of Proposed Project Activities Included in Miami-Dade County's Long Range Beach Erosion Control Plan

NEW PROJECT FUNDING REQUESTED FOR FY 2010-11

The FY 2010-11 funding request for the Miami-Dade County project is to provide funds necessary to implement additional nourishment of localized erosional hotspots located in Sunny Isles and Bal Harbour, and initial funding for a conventional project to be conducted by the Army Corps of Engineers, and project related monitoring.

Federal Project Nourishment Utilizing Offshore and Lummus Park Borrow Sites: In November 2007, the Assistant Secretary of the Army issued a memorandum directing

three actions with regard to the ongoing maintenance of the Federally-authorized Miami-Dade shore protection project. In addition to authorizing the consideration of non-domestic sand sources for the future maintenance of the project, and the development of a regional sediment inventory for the east coast of Florida, the memorandum also directed that the Miami-Dade project be nourished using any currently available domestic sand sources. At present, two sand sources are being developed for use on this project: 1) an offshore borrow site located Southeast of Government Cut (designated SGC-Extension), and material accreted north of Government Cut in the vicinity of Lummus Park (approximately R67 through R74). While each of these two sources is currently being developed to determine final quantities available, preliminary determinations indicate approximately 400,000 cubic yards may be available from each site. The final volume of sand available will be placed in the vicinity of the project previously referred to as the Alternative Sand Test Beach (63rd to 84th Street) as well as erosional hotspot areas further to the south currently being nourished by truck haul. Although cost revisions are possible as adjustments to the sand sources and final placement areas occur, the current estimated project cost is $16,500,000

Subproject State Request for FY 2010-11: $4,125,000

Sunny Isles and Bal Harbour Truck Haul Nourishment: As with the truck haul nourishments currently underway in Miami Beach, this project will utilize approved beach fill materials trucked in from inland quarries to nourish eroded segments located in Sunny Isles Beach, Bal Harbour and segments in Miami Beach. In developing the fill template for the permitting of each section, the profile was sized to restore the Corps authorized design section for each area. Based on existing State funding already or about to be encumbered for construction, it is estimated that an additional $2,402,690 in State funding will be required for this project in FY 2010-11.

Subproject State Request for FY 2010-11: $2,402,690

Project Monitoring: Project monitoring activities for the 2010-11 fiscal year include annual countywide surveys of all DEP monuments, as well as permit-required interim (quarterly) surveys of the segments nourished by previously completed truck haul nourishments and pending truck haul work in Sunny Isles, Bal Harbour, and Miami Beach. The estimated cost of these activities is $350,000, with a State share of $175,000. Detailed Scopes of Work will be submitted for Department approval prior to each survey event.

State Funding Requested for Subproject for FY 2010-11: $175,000

12

Funding Request Summary for FY 2010-11:

Subproject	Federal	State	Local
Federal Project Nourishment	$8,250,000	$4,125,000	$4,125,000
Sunny Isles/BH Nourishment	$ 0	$2,402,690	$3,318,000
Project-wide Monitoring	$ 0	$ 175,000	$ 175,000
	$8,250,000	$6,702,690	$7,618,000(1)

Total State Funding Requested for FY 2010-11: $ 6,702,690

(1)- Local funds comprised of $4,618,000 in FY 2009-10 and $3,000,000 in FY 2010-11.

Ongoing Activities

65th Street Hotspot Remediation: Section 227 of the 1999 Water Resources Development Act designated the City of Miami Beach as an eligible project site for the Corps Innovative Erosion Control Technology Program, and this site was one of three selected in the Eastern United States for pilot project construction. The specific site within Miami Beach is a persistent hotspot located between 63rd and 67th street (approximately R46 through R44.5) A Request for Proposals was let by the Corp's Engineering Research and Hydraulics Laboratory which resulted in the submittal of twelve proposals. The design selected for construction consists of a 2,000 foot long submerged, broad-crested breakwater consisting of rows of Reefballs mounted on an articulated concrete mat. The project design and is currently complete.

In late 2006, Congressional authorization for the Section 227 program expired, delaying the project from moving forward to construction. Reauthorization language as well as additional funding for the program was obtained with the passage of the 2007 Water Resources Development Act, allowing, the Corps to re-initiate work on this project. The current project construction budget is $2,000,000. The Corps is currently evaluating whether the design originally proposed can be constructed with the current budget. If cannot be constructed with available funds, additional modeling will be to determine if the reduction in length, as well as other possible modifications, will compromise project performance, If necessary, the County may fund the additional cost, and submit a funding request for the eligible State share of that additional cost

Project Monitoring: Limited State funds are available from previous appropriations to implement physical and biological monitoring components required by permit conditions and/ or interagency agreements. Physical monitoring includes annual and project-specific hydrographic surveys, beach compaction, and other elements related to project performance. Biological monitoring includes both routine project monitoring as required by permit, as well as the more intensive construction supervision tasks detailed in the DEP/ DERM agreements associated with federal Water Quality Certification issued to the Corps.