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CLERK OF THE BOARD
OF COUNTY COMMISSIONERS
MIAMI-DADE COUNTY, FLORIDA

Memorandum

MIAMI-DADE COUNTY

Date: December 2, 2008

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

To: Honorable Chairman Bruno A. Barreiro and Members, Board of County Commissioners

From: George M. Burgess
County Manager

Resolution No. R-1308-08

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

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Recommendation

It is recommended that the Board approve the attached resolution authorizing the submittal of a Miami-Dade County Beach Erosion Control Funding Request 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, the beach areas are located within Commission Districts 4, 5, and 7.

Fiscal Impact/Funding Source

The local match of $5,955,400 for Fiscal Year 2009-10 is available from the Building Better Neighborhoods General Obligation Bond Funds. County staff is currently working to identify alternative funding sources for future year needs.

Background

The Miami-Dade County 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 state funding 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 request 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 (attached), the existing and anticipated beach erosion control funding needs were identified in coordination with the US Army Corps of Engineers, the State, and the local coastal municipalities. The plan includes several elements such as 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 Attachment 1 of the plan.

Assistant County Manager

MEMORANDUM

(Revised)

TO: Honorable Chairman Bruno A. Barreiro and Members, Board of County Commissioners

DATE: December 2, 2008

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

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

Please note any items checked.

_____ "4-Day Rule" ("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

_____ Bid waiver requiring County Manager's written recommendation

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

_____ Housekeeping item (no policy decision required)

_____ No committee review

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Approved _____ Mayor
Veto _____
Override _____

Agenda Item No. 8(D)(1)(D)
12-2-08

RESOLUTION NO. R-1308-08

RESOLUTION APPROVING THE SUBMITTAL OF A BEACH EROSION CONTROL FUNDING REQUEST 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 his Board approves the submittal of the Miami-Dade County Beach Erosion Control Funding Request 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 Rebeca Sosa, who moved its adoption. The motion was seconded by Commissioner Joe A. Martinez and upon being put to a vote, the vote was as follows:

Bruno A. Barreiro, Chairman aye
Barbara J. Jordan, Vice-Chairwoman aye

Jose "Pepe" Diaz	aye	Audrey M. Edmonson	aye
Carlos A. Gimenez	aye	Sally A. Heyman	aye
Joe A. Martinez	aye	Dennis C. Moss	aye
Dorrin D. Rolle	aye	Natacha Seijas	aye
Katy Sorenson	aye	Rebeca Sosa	aye
Sen. Javier D. Souto	aye		

The Chairperson thereupon declared the resolution duly passed and adopted this 2nd day of December, 2008. 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: Kay Sullivan
Deputy Clerk

Approved by County Attorney as
to form and legal sufficiency.

Peter S. Tell

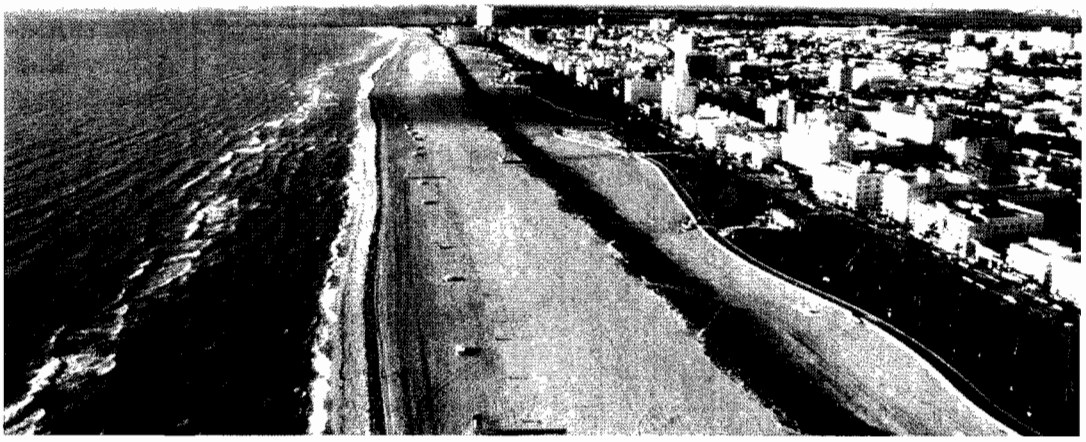
Miami-Dade County Beach Erosion Control

Local Government Funding Request for FY 2009-10

And

Long Range Budget Plan

2010-2019
August 2008



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

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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" presented in the long-term capital plan are included as attachments to 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, R6 through R74.

Project Evaluation:

Mitigation of Inlet Effects: The project area includes two maintained navigational inlets. An inlet management plan was completed for Bakers Haulover Inlet in 1995, and was approved by the Florida Department of Environmental Protection in 1997. The plan recommended continuing existing management practices related to the downdrift placement of material obtained by maintenance dredging of the flood shoal approximately every 3 to 4 years. In addition, dredging of the ebb shoal to nourish beaches downdrift of the inlet was first conducted in 2003, and is anticipated in the future provided sufficient material is available. Government Cut is located at the south terminus of the project.

Threat to Existing Upland Development/ Benefits: The shoreline within the project area is heavily developed, almost exclusively with multi-unit commercial and residential structures. Approximately 55,140' of the project area is privately-owned and developed, with an additional 17,723' of shorefront providing beach access through oceanfront parks, dedicated beach access easements, or street ends. All hurricane evacuation routes adjacent to the project area are located landward of the Coastal Construction Control Line.

Performance of the Project: The project performance to date has exceeded original estimates for the 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.

Availability of Federal Funds: The original 10.5-mile initial phase of this project which extends from Government Cut through Haulover Park was authorized by the Flood Control Act of 1968. This authorization was modified to include an additional 2.5 miles of beachfront north of Haulover Park by the Supplemental Appropriations Act of 1985 and the Water Resources Development Act of 1986. This existing authorization provides for Federal participation through 2025, and 2038 for the Government Cut to Haulover Park, and Sunny Isles Beach segments, respectively.

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 with 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 and

Research Center, and an evaluation of mechanisms for backpassing material from accretional to erosional segments of the project.

Local Commitment: Miami-Dade County has served as local project sponsor for this project since 1972 with the execution of the initial Cooperation Agreement with the Federal Government. A second Cooperation Agreement for the Sunny Isles segment was approved and executed by Miami-Dade County in 1986. Beach renourishment, inlet management, and dune preservation and revegetation are identified as objectives in the Coastal Element of the Metropolitan Dade County Comprehensive Development Master Plan. Miami-Dade County has passed numerous resolutions supporting the Department's many beach management objectives and activities as described in Chapter 161. In 2005, Miami-Dade County voters approved a General Obligation Bond program to provide funds for County infrastructure improvements. This program allocated $17.5 million for countywide beach erosion control activities.

State Commitment: The entire project area has been previously identified by the Department as critically eroded, and the project is recommended for continued implementation in the Department's Beach Management Plan for Miami-Dade County. Since the formal inception of this project in 1972, the State of Florida has provided $52,904,100 for initial construction and maintenance of the federal shore protection project dune revegetation, breakwater construction, jetty improvements, and project monitoring.

ATTACHMENT 1

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 2009-10

The FY 2009-10 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, Bal Harbour, and Miami Beach in the vicinity of 67th Street, 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 $33,000,000. Because of the costs involved and uncertainty of full funding availability at the State and Federal levels, and current project scheduling, this project is planned to occur over a two fiscal year period, with only the initial year State funding of $4,125,000 requested for FY 2009-10. Until such time as project cost estimates are finalized by the Corps, an equal amount of State funding is anticipated in our funding request for FY 2010-11.

Subproject State Request for FY 2009-10: $4,125,000

Sunny Isles/ Bal Harbour/ Miami Beach 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 Miami Beach in the vicinity of 67th Street. Attachment 2 provides details for the proposed activities in each of the three areas. 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. Due to funding and the logistical constraints of trucking, the actual construction quantities may be significantly less than the permitted volumes. Based on existing State funding already or about to be encumbered for construction, it is estimated that an additional $1,529,000 in State funding will be required for this project in FY 2010-11.

Subproject State Request for FY 2009-10: $1,529,000

Sunny Isles Breakwater Evaluation: In 2001, the Corps constructed two submerged breakwater structures at the north project limit of the Sunny Isles shore protection project to address an erosional hotspot. To date, the structures have performed very effectively with no nourishment projects needed since 2001. Since that time, several other small erosional areas have emerged in Sunny Isles which might benefit from similar structures to attenuate erosion. To assess this possibility, the City of Sunny Isles Beach requested a cost proposal from Coastal Systems International to assess that possibility (Attachment 3). The total estimated cost of this assessment is $58,048, with a requested State share of **$29,024.**

Subproject State Request for 2009-10: $29,024

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 2009-10: $175,000

32nd Street Breakwater Evaluation: In 2001, Miami-Dade County constructed a series of three, rubble mound, shore-connected breakwater structures to address severe erosion in the vicinity of 32nd Street on Miami Beach. The structures served to stabilize the areas behind and north of the structures, but created erosional conditions immediately downdrift. In 2007, Miami-Dade County commissioned a third-party assessment of the structures conducted by the Florida Institute of Technology, to evaluate their performance and make possible recommendations for improving their performance. The report contained several recommendations, however the scope of the study did not allow for a comprehensive evaluation of these options. Miami-Dade County subsequently contracted with Post, Buckley, Schuh, and Jernigan to conduct a detailed analysis of these options and recommend a preferred solution. Although the County wishes to implement any recommended option as soon as possible, there is insufficient technical and cost detail to include a specific funding request at this time.

Funding Request Summary for FY 2009-10:

Subproject	Federal	State	Local
Federal Project Nourishment (Year 1 of 2)	$8,250,000	$4,125,000	$4,125,000
Sunny Isles/BH/MB Nourishment	$ 0	$1,529,000	$1,626,000
Sunny Isles Breakwater Eval.	$ 0	$ 29,024	$ 29,024
Project-wide Monitoring	$ 0	$ 175,000	$ 175,000
	$8,250,000	$5,858,024	$5,955,024

Total State Funding Requested for FY 2009-10: $ 5,858,024

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 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. A separate application under the Department's innovative erosion control program is being submitted for FY 2009-10.

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. The funding levels requested for monitoring vary based on whether project construction and the associated more intensive construction supervision/ assessment tasks will be required. Several major projects are scheduled for implementation during the period included in this capital plan, such as a non-domestic sand nourishment project and Section 227 innovative erosion control technology project, which will require higher levels of project monitoring. For the purposes of the long-term plan, it is estimated that construction-year countywide monitoring tasks will require $350,000 per year to conduct ($150,000 state share), with a reduction to $300,000 annually in non-project years. Project monitoring costs are adjusted upward in later years for inflation.

Miami-Dade Beach Erosion Control
Long Term Capital Plan
FY 2009-2019

FY 2009-10

Project Task	Total	Federal	State	Local
Federal Project Nourishment (Year 1 of 2)	$16,500,000	$8,250,000	$4,125,000	$4,125,000
SI/BH/MB Truck Haul	$ 3,155,000	$ 0	$1,529,000	$1,626,000
Sunny Isles Breakwater	$ 58,048	$ 0	$ 29,400	$ 29,400
Monitoring	$ 350,000	$ 0	$ 175,000	$ 175,000
FY 2007-08 Total	$20,063,048	$8,250,000	$5,858,400	$5,955,400

FY 2009-10 State Funding Request: $ 5,858,400

FY 2010-11

Project Task	Total	Federal	State	Local
Federal Project Nourishment (Year 2 of 2)	$16,500,000	$8,250,000	$4,125,000	$4,125,000
Local Capital (Small Nourishment/ Structures)	$ 3,196,000	$ 0	$1,598,000	$1,598,000
Monitoring	$ 350,000	$ 0	$ 175,000	$ 175,000
FY 2010-11 Total	$20,046,000	$8,250,000	$5,898,000	$5,898,000

FY 2010-11 State Funding Request: $5,898,000

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FY 2011-12

Project Task	Total	Federal	State	Local
Monitoring	$ 350,000	$ 0	$ 175,000	$ 175,000
FY 2011-12 Total	$ 350,000	$ 0	$ 175,000	$ 175,000

FY 2012-13

Project Task	Total	Federal	State	Local
Monitoring	$ 350,000	$ 0	$ 175,000	$ 175,000
FY 2012-13 Total	$ 350,000	$ 0	$ 175,000	$ 175,000

FY 2013-14

Project Task	Total	Federal	State	Local
Monitoring	$ 300,000	$ 0	$ 150,000	$ 150,000
FY 2013-14 Total	$ 300,000	$ 0	$ 150,000	$ 150,000

FY 2014-15

Project Task	Total	Federal	State	Local
Federal Project Nourishment	$23,600,000	$11,800,000	$5,900,000	$5,900,000
Monitoring	$ 300,000	$ 0	$ 150,000	$ 150,000
FY 2014-15 Total	$23,900,000	$11,800,000	$6,050,000	$6,050,000

FY 2015-16

Project Task	Total	Federal	State	Local
Federal Project Nourishment	$23,600,000	$11,800,000	$5,900,000	$5,900,000
Local Capital (Small Nourishment/ Structures)	$ 3,982,000	$ 0	$1,991,000	$1,991,000
Monitoring	$ 400,000	$ 0	$ 200,000	$ 200,000
FY 2015-16 Total	$27,982,000	$11,800,000	$8,091,000	$8,091,000

FY 2016-17

Project Task	Total	Federal	State	Local
Local Capital (Small Nourishment/ Structures)	$ 4,161,000	$ 0	$2,081,000	$2,081,000
Monitoring	$ 400,000	$ 0	$ 200,000	$ 200,000
FY 2016-17 Total	$ 4,561,000	$ 0	$2,281,000	$2,281,000

FY 2017-18

Project Task	Total	Federal	State	Local
Local Capital (Small Nourishment/ Structures)	$ 4,348,000	$ 0	$2,174,000	$2,174,000
Monitoring	$ 450,000	$ 0	$ 225,000	$ 225,000
FY 2017-18 Total	$ 4,798,000	$ 0	$2,399,000	$2,399,000

FY 2018-19

Project Task	Total	Federal	State	Local
Local Capital (Small Nourishment/ Structures)	$ 4,544,0000	$ 0	$2,272,000	$2,272,000
Monitoring	$ 450,000	$ 0	$ 225,000	$ 225,000
FY 2018-19 Total	$4,994,000	$ 0	$2,497,000	$2,497,000

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