



DEPARTMENT OF THE ARMY
CHIEF OF ENGINEERS
2600 ARMY PENTAGON
WASHINGTON, DC 20310-2600

DAEN (1105)

26 September 2022

SUBJECT: Miami-Dade County, Florida, Main Segment, Coastal Storm Risk Management

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on coastal storm risk management for the Main Segment in Miami-Dade County, Florida. It is accompanied by the report of the Jacksonville District Commander. This report reviews the existing Dade County, Florida Beach Erosion Control and Hurricane Protection Project pursuant to the authority provided in Section 216 of the Flood Control Act of 1970, Public Law 91-611 (33 U.S.C. 549a). This law authorizes the Secretary of the Army, acting through the Chief of Engineers, to review the operation of projects for which construction has been completed and which were constructed in the interest of navigation, flood control, water supply, and related purposes, when found advisable due to significantly changed physical or economic conditions, and to recommend to Congress on the advisability of modifying the structures or their operation, and for improving the quality of the environment in the overall public interest. The existing project was authorized under Section 203 of the Flood Control Act of 1968, Public Law 90-483. Federal participation in renourishment of the existing project will end in 2025. Preconstruction engineering and design (PED) activities will continue under the Section 216 authority cited above.

2. The reporting officers recommend authorizing the National Economic Development (NED) Plan that will contribute to economic efficiency and was determined after an evaluation of the NED, environmental quality, regional economic development, and other social effects accounts. The non-Federal sponsor, Miami-Dade County, supports the Recommended Plan.

a. The Recommended Plan would be implemented after the expiration of Federal participation in the existing authorized project in 2025. The Recommended Plan is for approximately 6.1 miles of periodic beach nourishment, including dune and berm features, through Bal Harbour Village, the Town of Surfside, and portions of the City of Miami Beach (Florida Department of Environmental Protection Reference Monuments R-27 to R-57.5) and a series of groins to be constructed in Bal Harbour between R-28 and R-31.5. The established Erosion Control Line will delineate the landward limit of the beach fill footprint, and the seaward extent of equilibrated toe of fill will not extend beyond that of the existing project. While the final design dimensions will be determined during the PED phase, the proposed dimensions include the following:

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(1) A dune crest elevation of 9.5 feet North American Vertical Datum of 1988 (NAVD88) (8.6 feet Mean Sea Level (MSL)) and a dune crest width of 20 feet from R-27 to R-56.5;

(2) An equilibrated berm width of 25 feet from R-27 to R-39.5 and 50 feet from R-39.5 to R-56.5, with the berm elevation matching the natural berm elevation, which is currently approximately seven (7) feet NAVD88 (6.1 feet MSL); and

(3) A series of five groins from R-28 to R-31.5 having a total combined length of approximately 915 feet.

b. The Recommended Plan will require a total of approximately 10 million cubic yards of sand over the 50-year period of analysis under the high sea level change (SLC) scenario. Various sand sources may be used, including by-passing from the Baker Haulover Inlet Complex, back-passing from the beach and nearshore areas of South Beach, offshore sand sources, and upland mines if needed. The volume in these sand sources is adequate for the project. Initial construction would occur over multiple years, and will include construction of the groins, beach nourishment of Reach 1 with approximately 251,000 cubic yards from R-27 to R-39.5, and beach nourishment of Reach 2 with approximately 435,000 cubic yards from R-39.5 to R-56.5. Periodic nourishment of the improved beach, which would be provided when needed, would restore the beach to desired dimensions. The anticipated periodic nourishment interval based on modeled conditions is 3 years for Reach 1 and 4 years for Reach 2, based on the high SLC scenario.

c. Native vegetation will be planted on areas of the existing dune disturbed by construction, as well as newly constructed dunes, to stabilize the fill.

d. This plan will contribute to the creation of habitat for nesting sea turtles and shorebirds through the restoration of the eroded beach and dune system, and it provides incidental recreation opportunities and income loss benefits.

3. Miami-Dade County, Florida is the non-Federal cost sharing sponsor for all features of the project.

4. Project costs for the Recommended Plan are allocated to the coastal storm risk management purpose and based on October 2022 (Fiscal Year 2023) price levels.

a. Project First Cost. The estimated project first cost of the Recommended Plan is \$368,333,000. This project first cost estimate includes the cost for lands, easements, rights-of-way, relocations, and disposal areas (LERRDs) of \$802,000.

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b. Estimated Federal and Non-Federal Share. Based on existing public parking and access and the extent of private, undeveloped lands, the total estimated Federal and non-Federal shares of the project first cost are \$168,965,000 and \$199,368,000, respectively, in accordance with Section 103 of the Water Resources Development Act (WRDA) of 1986, as amended (33 U.S.C. 2213).

c. The Federal share of the project first cost for initial construction is estimated to be \$25,091,000 and the non-Federal share is estimated to be \$18,470,000, which equates to 57.6% Federal and 42.4% non-Federal. The non-Federal costs for initial construction include the value of lands, easements, rights-of-way, relocations, and dredged or excavated material disposal areas (LERRD) estimated to be \$169,000.

d. The Federal share of the project first cost for all periodic nourishments is estimated to be \$143,874,000 and the non-Federal share is estimated to be \$180,898,000, which equates to 44.3% Federal and 55.7% non-Federal. The non-Federal costs for all periodic nourishments include the value of lands, easements, rights-of-way, relocations, and dredged or excavated material disposal areas (LERRD) estimated to be \$633,000.

e. The estimated average annual cost of operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) is \$42,600. The OMRR&R activities will be conducted in accordance with the provisions of an O&M Manual that is developed during PED. These activities include any necessary long-term topographic and bathymetric surveys (different from those supporting beach nourishment construction activities) of the placement area and adjacent areas and surveillance of the project both annually and following storm events to determine losses of material. Other OMRR&R items may include revegetating the dune as needed between nourishment activities, scarp repair, and beach tilling. The non-Federal sponsor will be responsible for 100 percent of the OMRR&R costs.

5. Based on a 2.25 percent discount rate and a 50-year period of analysis, the total average annual equivalent costs of the project are estimated to be \$6,928,000. The equivalent average annual benefits, inclusive of recreation and income loss benefits, are estimated to be \$20,841,000 with net average annual benefits of \$13,913,000. The benefit-to-cost ratio is approximately 3.0 to 1.

6. In addition to providing economic benefits, this plan will also contribute to the creation of habitat for nesting sea turtles and shorebirds through the restoration of the eroded beach and dune system.

7. Risk and uncertainty have been explicitly factored into the economic analysis of this project. The Recommended Plan would reduce expected average annual damages by

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approximately 85% relative to the without project condition. Therefore, the Recommended Plan would reduce, but not eliminate, future damages and residual risk would remain. The project is intended to address erosion and prevent damages to structures and infrastructure; it is not intended to, nor will it, directly reduce the risk of loss of life during major storm events. Loss of life can only be prevented by residents and visitors following the local evacuation plans that are defined and published by relevant state and local authorities. These residual risks have been communicated to the residents of Miami-Dade County.

8. In accordance with USACE policy on the review of decision documents, all technical, engineering, and scientific work underwent an open, dynamic, and rigorous review process. This included District Quality Control, Agency Technical Review, Independent External Peer Review, and Policy and Legal Compliance review to confirm the planning analyses, alternative design and safety, and the quality of decisions.

9. Washington level review indicates that the project recommended by the reporting officers complies with all administrative and legislative policies and guidelines. The views of interested parties, including federal, state, and local agencies were considered and all comments from public reviews have been addressed and incorporated into the final report documents where appropriate.

10. I concur in the findings, conclusions, and recommendations of the reporting officers. Accordingly, I recommend that the Miami-Dade County, Florida, Main Segment coastal storm risk management project be authorized in accordance with the reporting officers' Recommended Plan at an estimated cost of \$43,561,000 for initial construction and \$324,772,000 for periodic nourishments, with such modifications as in the discretion of the Chief of Engineers may be advisable. Federal implementation of the project for coastal risk management includes, but is not limited to, the following required items of local cooperation to be undertaken by the non-Federal sponsor in accordance with applicable Federal laws, regulations, and policies:

a. Provide 35 percent of construction costs for initial construction of the project and 50 percent of construction costs for periodic nourishment allocated by the Federal government to coastal storm risk management; 100 percent of construction costs for initial construction and periodic nourishment allocated by the Federal government to beach improvements with exclusively private benefits; 100 percent of construction costs for initial construction and periodic nourishment allocated by the Federal government to improvements and other work located within the Coastal Barrier Resources System that the Federal government has determined are ineligible for Federal financial participation; and 100 percent of construction costs for initial construction and periodic nourishment allocated by the Federal government to the prevention of losses of undeveloped private lands, as further specified below:

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(1) Provide, during design, 35 percent of design costs in accordance with the terms of a design agreement entered into prior to commencement of design work for the project;

(2) Provide all lands, easements, rights-of-way, and placement areas and perform all relocations determined by the Federal government to be required for the project;

(3) Provide, during construction, any additional contribution necessary to make its total contribution equal to at least 35 percent of construction costs for initial construction and 50 percent of construction costs for periodic nourishment;

b. Prevent obstructions or encroachments on the project (including prescribing and enforcing regulations to prevent such obstructions or encroachments) that might reduce the level of coastal storm risk reduction the project affords, hinder operation and maintenance of the project, or interfere with the project's proper function;

c. Inform affected interests, at least yearly, of the extent of risk reduction afforded by the project; participate in and comply with applicable Federal floodplain management and flood insurance programs; prepare a floodplain management plan for the project to be implemented not later than one year after completion of construction of the project; and publicize floodplain information in the area concerned and provide this information to zoning and other regulatory agencies for their use in adopting regulations, or taking other actions, to prevent unwise future development and to ensure compatibility with the project;

d. Operate, maintain, repair, rehabilitate, and replace the project or functional portion thereof at no cost to the Federal government, in a manner compatible with the project's authorized purposes and in accordance with applicable Federal laws and regulations and any specific directions prescribed by the Federal government;

e. At least annually and after storm events, at no cost to the Federal government, perform surveillance of the project to determine losses of material and provide results of such surveillance to the Federal government;

f. For shores, other than Federal shores, protected using Federal funds, ensure the public use of, and access to, such shores by all on equal terms in a manner compatible with the authorized purpose of the project:

g. Provide and maintain necessary access roads, parking areas, and other associated public use facilities, open and available to all on equal terms;

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h. Give the Federal government a right to enter, at reasonable times and in a reasonable manner, upon property that the non-Federal sponsor owns or controls for access to the project to inspect the project, and, if necessary, to undertake work necessary to the proper functioning of the project for its authorized purpose;

i. Hold and save the Federal government free from all damages arising from design, construction, operation, maintenance, repair, rehabilitation, and replacement of the project, except for damages due to the fault or negligence of the Federal government or its contractors;

j. Perform, or ensure performance of, any investigations for hazardous, toxic, and radioactive wastes (HTRW) that are determined necessary to identify the existence and extent of any HTRW regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. 9601-9675, and any other applicable law, that may exist in, on, or under real property interests that the Federal government determines to be necessary for construction, operation and maintenance of the project;

k. Agree, as between the Federal government and the non-Federal sponsor, to be solely responsible for the performance and costs of cleanup and response of any HTRW regulated under applicable law that are located in, on, or under real property interests required for construction, operation, and maintenance of the project, including the costs of any studies and investigations necessary to determine an appropriate response to the contamination, without reimbursement or credit by the Federal government;

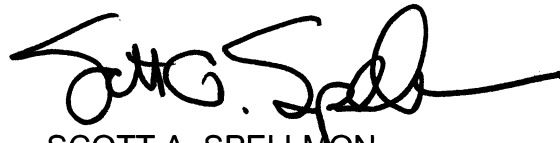
l. Agree, as between the Federal government and the non-Federal sponsor, that the non-Federal sponsor shall be considered the owner and operator of the project for the purpose of CERCLA liability or other applicable law, and to the maximum extent practicable shall carry out its responsibilities in a manner that will not cause HTRW liability to arise under applicable law; and

m. Comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended, (42 U.S.C. 4630 and 4655) and the Uniform Regulations contained in 49 C.F.R Part 24, in acquiring real property interests necessary for construction, operation, and maintenance of the project including those necessary for relocations, and placement area improvements; and inform all affected persons of applicable benefits, policies, and procedures in connection with said act.

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11. The recommendations contained herein reflect the information available at this time and current departmental policies governing formulation of individual projects. These recommendations do not reflect program and budgeting priorities inherent in the formulation of the national civil works construction program or the perspective of higher review levels within the executive branch. Consequently, the recommendations may be modified before they are transmitted to the Congress as proposals for authorization and implementation funding. However, prior to transmittal to the Congress, the non-Federal sponsor, the state, interested Federal agencies and other parties will be advised of any modifications and will be afforded an opportunity to comment further.

A handwritten signature in black ink, appearing to read "Scott A. Spellmon". The signature is stylized and cursive, with a long horizontal line extending to the right.

SCOTT A. SPELLMON
Lieutenant General, USA
Chief of Engineers