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

DAEN 18 April 2024

SUBJECT: St. Johns County, Florida, Ponte Vedra Beach Coastal Storm Risk Management

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on coastal storm risk management (CSRM) recommendations for St. Johns County, Florida, Ponte Vedra Beach. It is accompanied by the report of the Jacksonville District and South Atlantic Division engineers. This study is an interim response to a resolution adopted on June 21, 2000, by the Committee on Transportation and Infrastructure of the United States House of Representatives (Docket 2646), in accordance with Section 110 of the River and Harbor Act of 1962, Public Law 87-874, which authorizes the Secretary of the Army, acting through the Chief of Engineers, to survey the shores of St. Johns County, Florida, with particular reference to the advisability of providing beach erosion control works, as may be necessary in the interest of hurricane protection, storm damage reduction, beach erosion control, and other related purposes. Preconstruction engineering and design (PED), if funded, will continue under current authorities.

2. The reporting officers recommend authorizing a plan of risk management system of features that will reduce the risk of damages caused by coastal storms to structures and infrastructure in South Ponte Vedra Beach, St. Johns County. The Recommended Plan is the National Economic Development (NED) Plan. The Recommended Plan includes the following system of natural and nature-based features:

a. Approximately 5.1 miles of beach and dune nourishment in the South Ponte Vedra segment (R-78 to R-103.5);

b. An approximately 20-foot dune extension at the existing dune crest elevation of 15 – 25 feet North American Vertical Datum of 1988 (NAVD88);

c. An approximately 20-foot equilibrated berm width at an elevation of 13 feet NAVD88 (that is approximately 4 feet higher than the natural berm elevation of 9 feet NAVD88), which could be increased over time to correspond with observed sea level change and/or mean low water rates;

d. A taper into the existing beach at the north end, over a distance that is determined during PED; and

e. A taper into the existing beach at the south end, over a distance that is determined during PED, if nourishment is not conducted concurrently with nourishment of the Vilano Beach Reach of the St. Johns County, Florida CSRM project.

3. Approximately 2,145,000 cubic yards of sand will be placed for initial construction, and approximately 662,000 cubic yards of sand will be used for each periodic renourishment. A 10-year nourishment interval is expected, and the Northern Offshore Borrow Area site N-2 will be used, with sites N-1 and N-3 available for use if needed.

4. St. Johns County, Florida is the non-federal cost-sharing sponsor for all features of the project. As a shared responsibility, the Recommended Plan is inclusive of the non-federal sponsor's additional floodplain management responsibilities and emergency response actions in conjunction with state and Federal Emergency Management Agency related programs to mitigate the plan's residual risk, including potential life loss and damages to critical infrastructure. Based on October 2023 price levels, the estimated total project first cost is $138,320,000, which includes $60,124,000 for initial construction and a total cost of $78,196,000 for an estimated four (4) future periodic nourishments over 50 years. The total project first cost includes the value of lands, easements, rights-of-way, relocations (LERR), and dredged material placement area improvements estimated to be $12,235,000. The current project plan for LERR requires (a) the standard Perpetual Beach Storm Damage Reduction Easements for construction and for operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) to support a public beach, a dune system, and other erosion control and storm damage reduction measures; (b) the standard Temporary Work Area Easements for staging and access; and (c) the standard Road Easements for staging and access. The current plan requires the non-federal sponsor to acquire the standard Perpetual Beach Storm Damage Reduction Easement for approximately 251 privately owned parcels. The current project plan proposes acquisition of a non-standard estate from the State of Florida for use of submerged lands. The terms and approval for use of a lesser and non-standard estate will require U.S. Army Corps of Engineers (USACE) Headquarters approval prior to acquisition. Cost sharing is applied in accordance with the provisions of Section 103 of the Water Resources Development Act of 1986 (33 U.S.C. § 2213), as follows:

a. Based on the non-federal sponsor's public access commitment in the project area expected at the time of construction, the federal share of the project first cost for initial construction is estimated to be $24,591,000 and the non-federal share, which includes the cost of LERR and dredged material placement area improvements, is estimated to be $35,533,000, which equates to 41 percent federal and 59 percent non-federal.

b. Based on the non-federal sponsor's public access commitment in the project area expected at the time of construction, the federal share of the project first cost for periodic nourishments is estimated to be $24,632,000 and the non-federal share is estimated to be $53,564,000, which equates to 32 percent federal and 68 percent non-federal.

c. The additional annual cost of OMRR&R for the Recommended Plan is estimated to be $60,000. OMRR&R activities include long-term topographic and bathymetric surveys; annual surveillance of the project and following storm events to determine losses of material; 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 cost of project OMRR&R.

5. Based on a 2.75 percent discount rate and a 50-year period of analysis, the equivalent average annual benefits, including incidental recreation benefits, are estimated to be $4,078,000 and equivalent average annual costs are estimated to be $3,767,000, with equivalent average annual net benefits of $233,000 and a total estimated benefit-to-cost ratio of 1.06 to 1. All project costs are allocated to the authorized purpose of CSRM.

6. A qualitative assessment was completed documenting the sea turtle nesting behavior in the study area. Environmental Quality benefits, while not quantified, were claimed for preservation of the existing turtle nesting habitat along approximately 5.1 miles of shoreline with a beach nourishment project in place. In addition to the incidental recreation benefits of $359,000 that were calculated for the NED Plan, a qualitative assessment indicates that recreation in the study area will be maintained or increase with a CSRM project in place. A qualitative assessment of life safety with a CSRM project in place indicates a reduced risk to life safety. Beach-fx modeling indicates that with a project in place, there is a reduced risk of inundation to State Road A1A due to storm surge, and therefore a reduced risk to life safety.

7. The study performed a sensitivity analysis to evaluate the effects that different rates of sea level change could have on the Recommended Plan. The NED Plan was formulated using the intermediate rate of sea level change (SLC) which is 1.0 foot over the 50-year period of analysis. Beach-fx was used to model the performance of the NED Plan for low, intermediate, and high rates of sea level rise. The project performance for the three scenarios is relatively constant, with up to 96 percent effectiveness in risk reduction. The proposed project would greatly reduce, but not eliminate, future coastal storm risk and damages resulting from coastal storms. It is possible that SLC could occur at various rates within the range of the low to high rates of SLC. Overall, these results suggest that the NED Plan is both effective and robust in all three simulated sea level rise scenarios. Adaptive management, such as adjusting the timing of periodic nourishments and project volume requirements based on monitoring reports, will compensate for any variations in sea level rise from what was modeled.

8. All compliance with required applicable environmental laws and regulations for this phase of the project has been completed.

9. 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. The comprehensive review process included District Quality Control Review, Agency Technical Review, and Headquarters Policy and Legal Compliance review to confirm the planning analyses, alternative design and safety, and the quality of decisions. Washington-level review indicates that the plan recommended by the reporting officers complies with all essential elements of the U.S. Water Resources Council's Economic and Environmental Principles, Requirements, and Guidelines for Water and Land Related Resources Implementation Studies, as well as other 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. USACE decision documents recognize cost risk and uncertainty surrounding implementation. All cost estimates will carry a degree of uncertainty. The estimated total project first cost for the Recommended Plan at the 80 percent confidence level is estimated to be at $138,320,000. This project carries a degree of uncertainty such that if the main drivers described below are realized, the first cost for the Recommended Plan could increase to approximately $161,196,000. The Recommended Plan has various construction and non-construction components. These components range from 30 to 100 percent in project definition. The overall recommended plan is at 40 percent design. Based on the recommended project design of the construction components and scope definition of the non-construction components, the total project cost is designated as a Class 3

estimate. The total project first cost includes a contingency value of $34,550,000, which is approximately 34 percent of the estimated base project cost of $103,770,000. The cost contingencies are intended to cover cost and schedule increases due to the identified project risks and their probability of occurrence. Changes to assumptions or the basis of design can result in additional risks not currently identified. For the Recommended Plan project first costs, the currently known major uncertainty drivers are: (1) erosion rates and quantity estimates; (2) variation in major material costs and bid assumptions; (3) changes to assumptions on productivity, construction sequencing due to funding allocations and future market conditions that can affect overall project cost; and (4) ability of the non-federal sponsor to provide their share of funds and obtain all required real estate interests in a timely fashion as reflected in the project schedule. As the project moves into the next phases, USACE will focus risk management and mitigation on the primary cost and other significant risk drivers to the extent within USACE control. However, there still exists the potential for other unanticipated and uncontrollable changes in environmental or economic conditions that could further increase the total project first cost beyond the current estimate and/or necessitate changes in the project's design.

11. In full consideration of the risks as documented in the preceding paragraphs in this report, I concur in the findings, conclusions, and recommendation of the reporting officers. Accordingly, I recommend that CSRM improvements for Ponte Vedra Beach, Florida, be authorized in accordance with the reporting officers' Recommended Plan at an estimated cost of $60,124,000 for initial construction and $78,196,000 for future periodic nourishments, with such modifications as in the discretion of the Chief of Engineers may be advisable. Federal implementation of the project for CSRM includes, but is not limited to, the following 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 CSRM; 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:

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;

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;

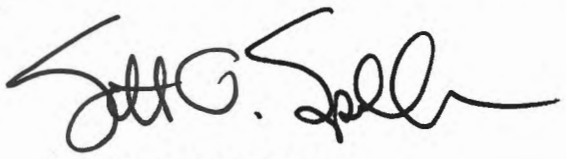
k. Agree, as between the Federal government and the non-federal sponsor, to be solely responsible for the performance and costs of cleanup and response of any HTRW regulated under applicable law that are located in, on, or under real property interests required for construction, operation, and maintenance 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.

12. The recommendation contained herein reflects the information available at this time and current departmental policies governing formulation of individual projects. It does not reflect program and budgeting priorities inherent in the formulation of a national civil works construction program or the perspective of higher review levels within the Executive Branch. Consequently, the recommendation may be modified before it is transmitted to the Congress as a proposal for authorization and implementation funding. However, prior to transmittal to Congress, the non-federal sponsor, interested federal agencies, and other parties will be advised of any significant modifications and will be afforded an opportunity to comment further.



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