DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
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DAEN (1005)

JAN 2 8 2022

MEMORANDUM FOR THE SECRETARY OF THE ARMY

SUBJECT: Upper Barataria Basin, Louisiana, Hurricane and Storm Damage Risk Reduction

1. I submit for transmission to Congress my report on hurricane and storm damage risk reduction on the west bank of the Mississippi River in Ascension, Assumption, Jefferson, Lafourche, St. Charles, St. James, and St. John the Baptist Parishes, Louisiana. It is accompanied by the report of the New Orleans District Commander. The authority for this study is the Resolution of the Committee on Transportation and Infrastructure of the United States House of Representatives, 105th Congress, Docket 2554, "Donaldsonville, Louisiana to the Gulf of Mexico," adopted May 6, 1998. That Resolution (at Docket 2554) requested the Secretary of the Army to review the Report of the Chief of Engineers on the Mississippi River and Tributaries, published as House Document 308, 88th Congress, 2nd Session, and other pertinent reports to determine whether modifications of the recommendations in the Chief's Report were advisable, in the interest of flood control, navigation, wetlands conservation and restoration, wildlife habitat, commercial and recreational fishing, salt water intrusion and fresh water and sediment diversion, and other purposes, in the area between Bayou Lafourche and the Mississippi River System, from Donaldsonville, Louisiana, to the Gulf of Mexico.

2. The reporting officers recommend a plan that provides hurricane and storm damage risk reduction in the parishes of Ascension, Assumption, Jefferson, Lafourche, St. Charles, St. James, and St. John the Baptist through the construction of structural measures. The recommended plan is the National Economic Development (NED) Plan and includes the construction of a 30.6-mile levee system around the communities of Boutte, Paradis, Bayou Gauche, and Des Allemands based on the 1% Annual Exceedance Probability (AEP) storm level of risk reduction. Features of the plan include:

a. The system consists of 12.3 miles of levee and floodwall improvements and 18.3 miles of new levee and floodwall construction. The system starts in Luling, Louisiana, where it connects the Mississippi River Levee through the Davis Pond Diversion Structure West Guide Levee. Continuing south, the system improves upon and updates deficiencies in the St. Charles Parish Levee, crosses Bayou Des Allemands with a 270-foot barge gate and continues parallel to U.S. Highway 90 before it ties into high ground across the Barataria Basin near Raceland.

b. The proposed levee is designed with a 1 vertical:4 horizontal (1V:4H) earthen berm with a 10-foot crown and multiple levee lifts over the initial 50 years. The first lift is

projected to occur in 2026 and will raise the levee to an elevation of 14 feet except in two hydraulic reaches where it will be constructed to an elevation of 16 feet. The final lift elevations will be 16 feet and 18.5 feet in 2075. The system also includes two tidal exchange structures, a roller gate, a barge gate, and five drainage structures.

c. To address impacts related to possible induced flooding, the plan includes fee acquisition of an estimated 270 residential and 5 non-residential structures. This is a worst-case future scenario that will be further analyzed in preconstruction engineering and design, including options to make improvements to the existing local levees, individual investigation for each structure (height of structures vs. induced stages, type of residential structure, social concerns, etc.), and further modeling to determine whether acquisitions of fee or easement is required or if other non-structural or structural measures may be used to address induced flooding.

d. Compensatory mitigation would be required for unavoidable impacts to the environment. Approximately 725 acres of bottom land hardwoods, cypress-tupelo swamp, and fresh marsh will be adversely impacted by construction. The recommended plan includes use of a general mitigation bank to compensate for these unavoidable impacts at an estimated cost of $93,257,000. However, if a suitable mitigation bank is not available to fully compensate for these impacts, a mitigation plan will be prepared to ensure full compensation in coordination with the U.S. Fish and Wildlife Service and other resource agencies.

3. The State of Louisiana, acting through the Coastal Protection and Restoration Authority Board, is the non-federal cost sharing sponsor for all features. Based on fiscal year 2022 price levels, the estimated project first cost of the recommended plan is $1,546,155,000, which includes $172,315,000 for future levee lifts. Cost sharing is applied in accordance with Section 103(c)(5) of the Water Resources Development Act (WRDA) of 1986, as amended (33 U.S.C. §2213(c)(5)), as follows:

a. The cost of construction is shared 65 percent federal and 35 percent non-federal. The estimated federal and non-federal shares of the project first costs are $1,005,000,750 and $541,154,250, respectively.

b. The non-federal sponsor is responsible for provision of all required lands, easements, rights-of-way, relocations, and dredged or excavated material disposal areas (LERRD), estimated to cost $132,298,000, including $84,213,000 for land acquisition associated with potential induced flooding damages. The non-federal sponsor is eligible for credit toward the non-federal share of total project costs for its LERRD costs to provide facility relocations and private lands.

c. The non-federal sponsor will be responsible for the operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) of the project, upon completion of initial construction of the project or a functional portion of the project. The annual cost of OMRR&R of the project is currently estimated at $2,200,300.

4. Based on a 2.25 percent discount rate and a 50-year period of analysis, the total equivalent average annual costs of the project are estimated to be $52,513,900, including OMRR&R. The equivalent average annual benefits are estimated to be $104,037,000 with net average annual benefits of $51,523,000. The benefit-to-cost ratio (BCR) is 2.0 to 1. All project costs are allocated to the authorized purpose of hurricane and storm damage risk reduction.

5. The study report fully describes flood risk to structures and life safety associated with coastal storms. The recommended plan was formulated to reduce the risk of flood damages with an AEP of 1 percent. The recommended plan reduces but does not eliminate future damages, and residual risk would remain. The recommended plan reduces expected annual damages relative to the without project conditions. The residual risk, along with the potential consequences, has been communicated to the non-federal sponsor and will become a requirement of any communication and evacuation plan. The recommended plan is not intended to, nor will it, reduce the risk to loss of life during major storms.

6. In accordance with U.S. Army Corps of Engineers (USACE) sea level change guidance, ER 1100-2-8162, the study evaluated potential impacts of sea level change in formulating and engineering the recommended plan. The structural risk reduction features recommended are based on the intermediate relative sea level rise projection. However, USACE will continue to monitor local conditions and determine if the intermediate scenario of relative sea level rise is occurring. If observed conditions deviate from intermediate to high sea level forecasts during design or construction, reevaluation of the NED plan will be required.

7. 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, agency technical review, Type I independent external peer review (IEPR), and headquarters policy and legal compliance review to confirm the planning analyses, alternative design and safety, and the quality of decisions. An IEPR was conducted for the subject project in accordance with Engineer Circular 1165-2-217, dated February 20, 2018, and the Office of Management and Budget's Final Information Quality Bulletin for Peer Review, dated December 16, 2004. The final IEPR was completed on February 14, 2020. Seven IEPR final comments were developed by the panel, of which only two were identified as having medium/high significance. The comment/response record documents USACE responses to the panel comments and the IEPR panel backcheck of the responses. Comments centered on residual risk and effects due to compound flooding, resiliency, evaluation and documentation of hydroperiod and persistence of ecosystems waterward and landward of the proposed levee, evaluation of differential effects on life safety and/or critical infrastructure, screening of alternatives, quantitative estimates of local socioeconomic impacts, and hydrology and hydraulics modeling methods. All recommendations were adopted and implemented into the recommended plan. The views of interested parties, including federal, Tribal, state, and local agencies, were

considered, and all comments from public reviews have been addressed and incorporated into the final report documents where appropriate.

8. Washington level review indicates that the project recommended by the reporting officers is technically sound, environmentally and socially acceptable, cost effective, and economically justified. The plan complies with all essential elements of the U.S. Water Resources Council's Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies and complies with other administrative and legislative policies and guidelines.

9. I concur with the findings, conclusions, and recommendations of the reporting officers. Accordingly, I recommend the plan to reduce hurricane and storm damage risk in Ascension, Assumption, Jefferson, Lafourche, St. Charles, St. James, and St. John the Baptist Parishes, Louisiana, be authorized in accordance with the reporting officers' recommended plan at an estimated project first cost of $1,546,155,000 with such modifications as in the discretion of the Chief of Engineers may be advisable. My recommendation is subject to cost sharing, financing, and other applicable requirements of federal and state laws and policies, including Section 103 of P.L. 99-662, WRDA 1986, as amended (33 U.S.C. §2213). Federal implementation of the project for hurricane and storm damage risk reduction 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, as further specified below:

i. 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;

ii. Provide all real property interests, including placement area improvements, and perform all relocations determined by the Federal Government to be required for the project; and

iii. Provide, during construction, any additional contribution necessary to make its total contribution equal to at least 35 percent of construction costs;

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 hurricane and storm damage 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. 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;

f. 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;

g. 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;

h. 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;

i. 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

j. 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.

10. 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.

SCOTT A. SPELLMON
Lieutenant General, USA
Chief of Engineers