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

Proposed Report

DAEN

SUBJECT: Lower Missouri River Jefferson City L-142, Jefferson City, MO, Flood Risk Management

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on flood risk management recommendations for the Lower Missouri River Jefferson City L-142, Jefferson City, MO, Flood Risk Management. It is accompanied by the report of the Kansas City District and Northwestern Division engineers. This study is an interim response to the authorization in Section 216 of the Water Resources Development Act (WRDA) of 2020. The authorization provided that the Secretary of the Army shall investigate and provide recommendations relating to modifications to projects in Iowa, Kansas, Nebraska, and Missouri authorized under the Pick-Sloan Missouri River Basin Program (authorized by section 9(b) of the Act of December 22, 1944 (chapter 665, 58 Stat. 891)) and the Missouri River Bank Stabilization and Navigation project (authorized by section 2 of the Act of March 2, 1945 (chapter 19, 59 Stat. 19)).

2. The reporting officers have identified a federal interest plan consisting of a risk management system of features that will reduce the risk of economic and infrastructure damage on the north bank of the Missouri River in Jefferson City, Missouri due to repetitive flooding, including damage to an airport, Missouri National Guard Army Aviation Support Facility, major roadways, wastewater treatment facility, businesses, and approximately 2,100 acres of agriculture production land. The federal interest plan is the National Economic Development (NED) Plan. The federal interest plan includes the following system of structural features, intended to provide flood risk reduction up to the 1% annual exceedance probability event:

a. New federal levee system with approximately 6 miles of new earthen levee set back approximately 1,500 to 3,000 feet from the Missouri River including:

- Construction of approximately 5.82 miles of new earthen embankment levee.
- Construction of 18,500 linear feet of landside underseepage berms.
- Construction of 11,600 linear feet of landside stability berms.
- Construction of approximately 3,120 linear feet of riprap and bedding on part of the western reach of levee facing the Missouri River.
- Construction of 11 new drainage structures.
- Construction of eight gatewell structures.

- Implementation of three portable pumps for interior drainage.
- Installation of up and over ramps to maintain access for properties and businesses along the project.
- Installation of five closure structures.

b. Removal of approximately three miles of the non-federal Capital View Levee west of U.S. Highway 54 / U.S. Highway 63 and removal of associated drainage pipes.

c. Relocations of various utilities, including waterlines, overhead electric lines and power poles, sanitary sewer force mains, sanitary sewer gravity mains, gas lines, telephone lines, fiber lines, storm drainage utilities, and communication lines.

The federal interest plan would have adverse impacts to the environment, requiring compensatory mitigation. Approximately 182.6 acres of farmed wetlands, 1.1 acres of other emergent wetlands, 27.8 acres of wooded wetland habitat, and 12.9 acres of wooded riparian habitat would be adversely impacted. Impacts would be mitigated by purchasing credits from a mitigation bank operating within the nearby Missouri River watershed and 45.4 acres of non-wetland habitat development onsite. The federal interest plan includes monitoring and adaptive management of the onsite compensatory mitigation. The estimated total cost of environmental mitigation is $1,099,000.

The federal interest plan also includes mitigation for unavoidable induced flooding impacts from the construction of the new levee to an estimated 26,000 acres of land. A preliminary real estate takings analysis determined the least cost mitigation option would be the purchase of permanent flowage easements across portions of 1,700 parcels spanning four counties in central Missouri. However, due to the lack of a Non-Federal Sponsor capable of fully executing the acquisitions, the Final Report and Integrated Environmental Assessment (EA) identify the No Action Alternative as the Recommended Plan, despite a demonstrated Federal interest in project implementation.

3. The Missouri Department of Natural Resources (MoDNR) is the non-federal sponsor (NFS) for the study, while the City of Jefferson City, Missouri has agreed to serve as the cost-sharing NFS for project implementation. Although the City can acquire and hold title to land outside its jurisdictional boundaries, it lacks the power of eminent domain beyond its city limits. Consequently, the City cannot fully execute all NFS implementation responsibilities. To date, an additional NFS with the necessary real estate acquisition authority outside the city limits has not been identified.

4. Based on October 2025 price levels, the estimated total project first cost is $291,000,000. The total project first cost includes the value of lands, easements, rights-of-way, relocations (LERR), and contingency estimated to be $72,300,000, which includes the Sponsor's incidental administrative expenses estimated to be $10,674,900 with contingency. The federal interest plan requires affected lands to be acquired using standard estates in Fee for mitigation, Fee for billboard sites, permanent easements for

flood protection levee and roads, temporary work area easements for construction staging, and several business relocations under PL 91-646. The project includes a proposed non-standard estate (NSE) that represents the minimum interest to support project implementation. This NSE was coordinated with HQ-USACE and the OASA-CW for policy and applicability to this feasibility study. If a NFS is found for implementation of the federal project, a version of this NSE would be expected to be used. Cost sharing is applied in accordance with the provisions of Section 103 of the Water Resources Development Act (WRDA) of 1986 (33 U.S.C. § 2213), as follows:

a. The federal share of the project first cost for initial construction is estimated at $189,100,000 and the non-federal share, which includes the cost of LERR, is estimated at $101,850,000 which equates to 65 percent federal and 35 percent non-federal.

b. The additional average annual cost of operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) for the federal interest plan is estimated to be $195,160. OMRR&R activities include mowing, removal of unwanted vegetation, animal control, minor slope repair, crown repair, gate maintenance and operation, pipe inspections and cleaning, relief well testing and cleaning, and emergency planning. Non-routine items would include major slide or slope repairs, lining or replacement of drainage pipes and relief wells, gatewell repairs, gate replacements, and riprap replacement. Flood fight activities would include levee patrols, sandbagging, and ringing of sand boils. The non-federal sponsor will be responsible for 100 percent of the cost of project OMRR&R.

5. Based on a 3.25 percent discount rate and a 50-year period of analysis, the equivalent average annual benefits are estimated at $15,136,000 and equivalent average annual costs are estimated at $13,928,000, with equivalent average annual net benefits of $1,208,000 and a benefit-to-cost ratio (BCR) of 1.09. All project costs are allocated to the authorized purpose of flood risk management.

6. The federal interest plan aligns with the administration's priorities of focusing on protecting human life and safety, protecting infrastructure economically significant to the nation, protecting human property, protecting state level infrastructure, and protecting municipal infrastructure.

7. The study report fully describes flood risk to structures and life safety associated with flooding. The federal interest plan was formulated to reduce the risk of flood damages to key infrastructure and residential /commercial structures resulting from a flood event. The federal interest plan would greatly reduce but not eliminate future damages and residual risk would remain. With an initial overtopping AEP of 1%, facilities located behind the federal levee would be able to withstand and recover from a much wider range of flood events than the existing Capital View Levee, which is currently at a 17% AEP of overtopping. 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.

8. Implementation strategies for construction of the risk management system would be a shared responsibility conducted in coordination with the non-federal sponsor to cost effectively reduce risk from flooding. The implementation strategy for the plan would reduce the risk through a series of risk reduction increments that either could be implemented simultaneously, where the entire project is implemented in an expedited manner or implemented sequentially, where measures are implemented on a rolling incremental basis. The Plan includes a risk informed strategy that utilizes best practices to reduce risk to the most vulnerable areas and critical infrastructure first with the most cost-effective measures. Various implementation strategies to identify risk reduction increments were considered for the federal interest plan, including:

a. The new levee segment could be constructed as two phases. The upstream portion would be constructed first, ending with the tie-in to the U.S. Highway 54 / U.S. Highway 63. Then the second downstream portion would be constructed.

b. Existing Capital View Levee segments will be left in place until the setback levee is constructed. Where the existing and new alignment overlap, the contractor would minimize the length of alignment where there is no flood protection, and provide an emergency backfill plan that could consist of additional material, portable barriers, or other appropriate means.

9. All compliance with required applicable environmental laws and regulations has been completed with the exception of Section 401 Water Quality Certification (WQC). The WQC would be acquired from the Missouri Department of Natural Resources (MoDNR) during the PED phase. In a letter dated 15 September 2025, MoDNR stated there are no foreseen water quality issues that would arise from this project.

10. 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 federal interest plan identified 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.

11. 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 federal interest plan at the 80% confidence interval is estimated at $291,000,000. This project carries a degree of uncertainty such that if the main drivers described below are realized, the first cost for the federal interest plan could increase to approximately $360,000,000. The overall federal interest plan is at 35 percent design. Based on the 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 project first cost includes a contingency value of $75,600,000, which is approximately 26 percent of the estimated base project cost of $291,000,000. 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 federal interest plan project first costs, the currently known major uncertainty drivers are the following: 1) additional survey data may result in quantity changes for utilities and relocations 2) additional geotechnical data and borings my result in further refinements of design elements; 3) further refinements of hydraulics and hydrology modeling in the future my result in quantity and construction feature changes; 4) variation in major material costs and bid assumptions, 5) 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, and 6) any changes to assumptions on productivity, construction sequencing due to funding allocations and future market conditions can affect overall project cost. 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.

12. 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 the No Action Alternative, due to lack of a sufficiently capable implementation NFS, despite identification of a federal interest plan. The federal interest plan includes risk management improvements for Jefferson City, Missouri at an estimated project first cost of $291,000,000 for initial construction, with such modifications as in the discretion of the Chief of Engineers may be advisable. Federal implementation of the project for flood risk management would include, 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 a minimum of 35 percent, up to a maximum of 50 percent, of construction costs, 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. Pay, during construction, a contribution of funds equal to 5 percent of construction costs;

3. 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;

4. 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 flood 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 flood risk management features; 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.

13. 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 Congress. 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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