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

DAEN

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SUBJECT: Grand River Basin Ecosystem Restoration, Iowa and Missouri

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on ecosystem restoration in the Grand River Basin, Iowa and Missouri. It is accompanied by the report of the Kansas City District Commander. This report was completed as an interim response to a resolution of the Committee on Environment and Public Works, United States Senate, adopted on 23 June 2004. This resolution requested a review of the Report of the Chief of Engineers on the Grand River and Tributaries, Missouri and Iowa, published as House Document 241, 89th Congress, First Session, and other pertinent reports, to determine whether any modifications of the recommendations contained therein are advisable at the present time in the interest of flood damage reduction, municipal and industrial water supply, recreation, fish and wildlife conservation, or environmental restoration in the Grand River Basin, Iowa and Missouri. Preconstruction engineering and design activities, if funded, will continue under the same authority.

2. The reporting officers recommend authorization of a project that will make significant National Ecosystem Restoration (NER) contributions in association with wetland and aquatic habitat improvement within the Lower Grand River Basin. The project will also provide long-term economic benefits to critical transportation infrastructure and agriculture from flood risk reduction by reducing excessive sedimentation and log jams. The NER plan identified cost-effective restoration measures in three focused study areas in the Lower Grand River sub-basin, Locust Creek, Fountain Grove, and Yellow Creek, and was developed in coordination and consultation with federal, state, and local agencies. The NER plan would increase habitat connectivity within the floodplain and benefit approximately 40,000 acres of wet prairie, emergent wetland, bottomland forest, and aquatic riverine habitats, of which about 24,000 acres occur on state and federal lands that are considered the most representative of these natural systems in the Lower Grand River sub-basin. The NER plan would increase habitat value by about 2,453 average annual habitat units (AAHU) to raise the total AAHUs with project to about 20,127 AAHU. The plan increases suitability for migratory birds as it boarders both the Central and the Mississippi flyways important to numerous waterfowl and other bird species.

3. While developing this NER plan, it was determined that the U.S. Fish and Wildlife Service (USFWS) could implement the recommended restoration measures for the Yellow Creek study area within the Swan Lake National Wildlife Refuge under their existing authorities. For this reason, the Yellow Creek study area measures are part of

the overall federal NER Plan, but are not included in this recommendation. They are listed below to describe the entirety of the federal restoration activities within the NER plan. A subset of the NER plan (all measures of the NER plan minus the USFWS measures) represents the "U.S. Army Corps of Engineers (USACE) Plan". The full NER plan with all measures including measures on the USFWS lands, represents the "Federal Plan".

4. Based on October 2020 price levels, the estimated total project first cost of the USACE Plan is $121,347,000. In accordance with the cost sharing provisions in Section 103(c) 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 is estimated to be $78,875,600 and the total non-federal share is estimated to be $42,471,400, which equates to 65 percent federal and 35 percent non-Federal. The separable elements of the Federal Plan include the following:

a. Locust Creek (USACE Implementation): The recommended plan would benefit approximately 432 acres of aquatic riverine, 8,852 acres of bottomland hardmast forest, 1,493 acres of wet prairie, and 2,975 acres of emergent wetland in the Locust Creek study area resulting in a net gain of 971.5 AAHUs. The Locust Creek measures include construction of an approximately 1,800-acre sediment detention basin to trap sediment and large logs; a diversion berm to prevent the progression/formation of additional upstream avulsions that might divert water and bypass the sediment detention basin, to divert flows into the sediment basin while allowing water to continue downstream, and to provide fish and aquatic organism passage; notching of several existing levees to allow for the movement of water, sediment, and logs in the detention basin; dredging of approximately 23,500 feet of Muddy and Locust creeks to provide channel dimensions sufficient to accommodate the historic bankfull flow and provide appropriate channel slope; small levee modifications and habitat enhancements; partial removal of a levee to help restore floodplain connectivity between Higgins Ditch and the Locust Creek channel; construction of grade control along Higgins Ditch to further reduce downstream sediment deposition; and bank stabilization or similar cost-effective measures upstream of the sediment detention basin to reduce sediment loading. The Missouri Department of Natural Resources (MoDNR) would be the non-federal sponsor for this element of the project. The total project first cost for the Locust Creek element at October 2020 price levels is $87,075,000, which includes monitoring costs of $798,000 and adaptive management costs of $2,475,000. The federal share of the project first cost is estimated at $56,598,800 (65 percent), and the non-federal share is estimated at $30,476,200 (35 percent), which includes the value of lands, easements, rights-of-way, relocations and dredged or excavated material disposal areas estimated to be $8,041,000. The MoDNR will be responsible for operation, maintenance, repair, rehabilitation, and replacement (OMRR&R) of the project after construction, with costs currently estimated at $8,071,100 over the 50-year planning horizon, as well as all monitoring costs beyond the 10-year cost-shared period currently estimated at $586,700 over the 50-year planning horizon.

b. Fountain Grove (USACE Implementation): The recommended plan would benefit approximately 320 acres of aquatic riverine, 3,917 acres of bottomland hardwood forest, and 2,825 acres of emergent wetland in the Fountain Grove study area resulting in a net gain of 1,139.8 AAHUs. The Fountain Grove features include a suite of actions to enhance wetlands through increased natural ecosystem form and function, improved habitat development, and improved water management capability. Measures include creation of sloughs and habitat mounds; modification of existing pools to provide more naturally shaped wetlands; water control structure removals and modifications; levee setbacks; construction of a new levee to direct flows towards a controlled overtopping point; removal of a railroad berm; and placement of two groundwater pumps to facilitate wetland development and improve hydrology. The Missouri Department of Conservation (MDC) would be the non-federal sponsor for this element of the project. The total project first cost for the Fountain Grove element at October 2020 price levels is $34,272,000, which includes monitoring costs of $158,000 and adaptive management costs of $360,000. The federal share of the project first cost is estimated at $22,276,800 federal (65 percent), and the non-federal share is estimated at $11,995,200 (35 percent), which includes the value of lands, easements, rights-of-way, relocations and dredged or excavated material disposal areas estimated to be $3,595,000. The MDC will be responsible for OMRR&R of the project after construction, with costs currently estimated at $861,400 over the 50-year planning horizon, as well as all monitoring costs beyond the 10-year cost-shared period currently estimated at $131,100 over the 50-year planning horizon.

c. Yellow Creek (USFWS Implementation): The recommended plan would benefit approximately 986 acres of aquatic riverine, 12,258 acres of bottomland hardwood forest, 197 acres of wet prairie, and 7,484 acres of emergent wetland in the Yellow Creek study area resulting in a net gain of 342.3 AAHUs. The main feature of the Yellow Creek plan is the setback of a levee within the Swan Lake National Wildlife Refuge. The plan would include levee removal; removing three existing culverts; raising a portion of existing levee; constructing a portion of a new setback levee; and addition of two 3-foot diameter concrete culverts with flap gates. While part of the overall Federal Plan, the Yellow Creek element would be implemented by the USFWS under existing USFWS authorities. Costs of implementing this portion of the Federal Plan were not finalized and are not included in this recommendation for authorization.

5. The risk and uncertainty of the NER plan's performance was evaluated to assess the reliability of ecological success and to support the development of the OMRR&R manual. The NER plan includes a Monitoring and Adaptive Management Plan to ensure project performance. It was completed in consultation with the non-federal sponsors and includes estimated costs of adaptive management measures, if necessary, based on the outcomes of the ecological success monitoring for a period of ten years. The plan is a structural project designed primarily to reduce sedimentation and woody debris inputs from upstream sources that will require long-term non-federal sponsor monitoring and OMRR&R activities to maintain project performance even after ecological success determinations have been made and the ten-year cost-shared monitoring and adaptive management period has expired. Because the plan would not have any significant

adverse effects, no mitigation measures or compensation measures would be required, beyond best management practices and avoidance.

6. 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 to ensure technical quality. This includes district quality control, agency technical review, and a headquarters policy and legal review. All comments from the above referenced reviews have been addressed and incorporated into the final documents.

7. Washington-level review indicates the plan recommended by the reporting officers is technically sound, environmentally and socially acceptable, and cost effective. The plan complies with all essential elements of the U.S. Water Resource Council's Economic and Environmental Principal and Guidelines for Water and Land Related Resources Implementation Studies and complies with other administrative and legislative policies and guidelines. The views of interested parties including federal, state, and local agencies have been considered.

8. I concur with the findings, conclusions, and recommendations of the reporting officers. Accordingly, I recommend that the interim plan for ecosystem restoration for the Lower Grand River sub-basin be authorized at an estimated project first cost of $121,347,000, 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 WRDA 1986, as amended (33 U.S.C. 2213). In making this recommendation, I have carefully considered the unique aspects of this project. The recommendation is subject to the non-federal sponsors agreeing to comply with all applicable federal laws and policies, including that they will:

a. Provide 35 percent of total project 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 the commencement of design work for the project;

(2) Provide all lands, easements, rights-of-way, including those required for relocations, the borrowing of material, and the disposal of dredged or excavated material; perform or ensure the performance of all relocations; and construct all improvements required on lands, easements, and rights-of-way to enable the disposal of dredged or excavated material as determined by the Federal Government to be required or to be necessary for the construction, operation, and maintenance of the project, all in compliance with applicable provisions of the Uniform Relocation and Assistance and Real Property Acquisition Policies Act of 1970, as amended (42 U.S.C. 4601-4655) and the regulations contained in 49 C.F.R. Part 24; and

(3) Provide, during construction, any additional funds necessary to make its total contribution equal to 35 percent of total project costs.

b. Hold and save the United States free from all damages arising from the construction, operation, maintenance, repair, rehabilitation, and replacement of the project and any betterments, except for damages due to the fault or negligence of the United States or its contractors;

c. Not use the project or lands, easements, and rights-of-way required for the project as a wetlands bank or mitigation credit for any other project;

d. Prevent obstructions or encroachments on the project (including prescribing and enforcing regulations to prevent such obstructions or encroachments), such as any new developments on project lands, easements, and rights-of-way or the addition of facilities which might reduce the outputs produced by the project, hinder operation and maintenance of the project, or interfere with the project's proper function;

e. For so long as the project remains authorized, operate, maintain, repair, rehabilitate and replace the project, or functional portions of the project, including any mitigation features, at no cost to the Federal Government, in a manner compatible with the project's authorized purpose and in accordance with applicable federal and state laws and regulations and any specific directions prescribed by the Federal Government;

f. 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 for the purpose of completing, inspecting, operating, maintaining, repairing, rehabilitating, or replacing the project;

g. Perform, or ensure performance of, any investigations for hazardous substances that are determined necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Public Law 96-510, as amended (42 USC 9601-9675), that may exist in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be required for construction, operation and maintenance of the project.

h. Assume, as between the Federal Government and the non-federal sponsor, complete financial responsibility for all necessary cleanup and response costs of any hazardous substances regulated under CERCLA that are located in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be required for construction, operation, and maintenance of the project; and

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, and to the maximum extent practicable, operate, maintain, repair, rehabilitate, and replace the project in a manner that will not cause liability to arise under CERCLA.

9. 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 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 as a proposal for authorization and implementation funding. However, prior to transmittal to Congress, the sponsors, the state, 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