



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

Proposed Report

DAEN

SUBJECT: University City Branch, River Des Peres, Missouri, Final General Reevaluation Report (GRR) with Integrated Environmental Assessment, University City, St. Louis County, Missouri, Flood Risk Management

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on modifications to previously authorized flood risk management recommendations for the River Des Peres, Missouri project, University City, St. Louis County, Missouri. It is accompanied by the Final General Reevaluation Report (GRR) of the St. Louis District and Mississippi Valley Division engineers. Construction of the recommended plan from the River Des Peres, Missouri Chief's Report, dated May 23, 1989, was originally authorized by Section 101(a) (17) of the Water Resources Development Act (WRDA) of 1990 (P.L. 101-640). The original recommended plan included various measures to address both flood risk management and provide recreation opportunities throughout the River Des Peres watershed, including the University City Branch of the River Des Peres, Deer Creek, Black Creek, and the Kirkwood Branch of Gravois Creek. During Preconstruction Engineering and Design (PED) it was discovered that the recommended plan for the University City Branch measures would create flood impacts downstream of the University City Branch of the River Des Peres project area, so the project was unable to proceed into construction without a post-authorization study to develop an acceptable plan for flood risk management. Other elements of the previously authorized project have already been implemented by non-Federal interests or are otherwise not practicable for further U.S. Army Corps of Engineers (USACE) action and can be removed as part of the authorized project. PED activities for the University City Branch, River Des Peres will continue under current authorities.

2. The reporting officers recommend modifying the authorized project with an implementable risk management system of features that will reduce the risk of damages from inland flooding to residential and commercial structures, public infrastructure, and critical facilities. The Recommended Plan is the *National Economic Development (NED) Plan*. The Recommended Plan includes the following structural features:

- a. A detention basin, Detention Basin 4 (DB4), which is approximately 7.9 acres in size located to the northwest of the confluence of an unnamed tributary with the River Des Peres. The basin would reduce flood stages downstream for all flood events above the 50 percent AEP (2-year) event; this is based on the capacity of the basin per design constraints. The basin is designed for dry detention, so that it has maximum storage

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capacity during storm events. DB4 is located at the site of a public park, Woodson Road Park, in the City of Overland. No environmental mitigation is required.

3. The City of University City is the non-Federal cost sharing sponsor for all features of the Recommended Plan. 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 (FEMA) related programs to mitigate the plan's residual risk including potential life loss and damages to critical infrastructure. Based on October 2022 price levels, the estimated total project first cost is \$13,507,000. The total project first cost includes the value of lands, easements, rights-of-way, relocations, and dredged material placement area improvements (LERRD). Total LERRD costs are estimated to be \$2,507,000. Cost sharing is applied in accordance with the provisions of Section 103 of WRDA 1986 (33 U.S.C. § 2213), as follows:

a. The Federal share of the project first cost for initial construction is estimated at \$8,780,000 and the non-federal share, which includes the cost of LERRD, is estimated at \$4,727,000, which equates to 65 percent Federal and 35 percent non-Federal.

b. The additional annual cost of operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) for the Recommended Plan is estimated to be \$10,000 per year. OMRR&R activities include mowing and cleaning out the detention basin after flood events; this would largely comprise removal of debris. The non-Federal sponsor will be responsible for 100 percent of the cost of project OMRR&R.

4. Based on a 2.5 percent discount rate and a 50-year period of analysis, the equivalent average annual benefits are estimated at \$1,277,000 and equivalent average annual costs are estimated at \$498,000, with equivalent average annual net benefits of \$779,000 and a benefit-to-cost ratio (BCR) of 2.56 to 1. All project costs are allocated to the authorized purpose of flood risk management.

5. The study report fully describes flood risk to structures and life safety associated with inland flooding. The Recommended Plan was formulated to reduce flood stages downstream and reduce flood damage to key infrastructure and residential/commercial structures for all flood events above the 50 percent annual exceedance probability. The Recommended Plan would greatly reduce, but not eliminate, future damages and residual risk would remain. The Recommended Plan reduces expected annual damages by approximately 25 percent compared to the without project conditions. The residual risk, along with the potential consequences, has been communicated to the non-Federal sponsor.

6. All compliance with required applicable environmental laws and regulations has been completed.

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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 Review, Agency Technical Review, Major Subordinate Command (Mississippi Valley Division) Policy and Legal Compliance 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.

8. 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 is \$13,507,000 at a Class 3 level of technical information and design reflecting approximately a 10 percent level of project definition. The total project first cost includes a contingency value of \$2,307,000, which is approximately 23 percent of the estimated base project cost of \$12,397,000. The cost contingencies reflect an 80 percent confidence level in estimated total project first cost and are intended to cover cost and schedule increase due to the identified project risks and their probability of occurrence. An 80 percent confidence level carries some degree of uncertainty. For the Recommended Plan project first costs, the currently known major uncertainty drivers include: 1) design is in preliminary stages and exploration has not yet been done on the material properties at this location; if none of the material excavated is able to be reused for the containment levee and material needs to be purchased, this could increase the cost; and 2) the project implementation strategy for real estate acquisition still requires refinement; if acquisition takes longer than anticipated, there may be impacts to project construction schedule and cost. In regards to real estate acquisition, construction of Detention Basin 4 is wholly dependent upon the non-Federal sponsor's acquisition of the real property interests needed for the detention basin and will involve acquisition of real property interests from other federal agencies, the adjacent community, and private landowners and will also involve the relocation of a public park owned by the City of Overland. 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.

9. 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 modifications to the previously authorized flood risk management

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improvements for University City Branch, River Des Peres, be authorized in accordance with the reporting officers' Recommended Plan at an estimated cost of \$13,507,000 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 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 a minimum of 35 percent, up to a maximum of 50 percent, of construction costs, as further specified below:

1. Provide, during design, 25 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 35 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;

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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 (P. L. 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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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.

**CURRENT CG (ALL CAPS)**

Lieutenant General, USA

Chief of Engineers