



**DEPARTMENT OF THE ARMY**  
**OFFICE OF THE CHIEF OF ENGINEERS**  
**WASHINGTON, D.C. 20314-1000**

REPLY TO  
ATTENTION OF:

MAR 28 2006

CECW-PC (1105-2-10a)

SUBJECT: Des Moines and Raccoon Rivers, Des Moines, Iowa

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on flood damage reduction in the vicinity of Des Moines, Iowa. It is accompanied by the report of the district and division engineers. These reports are an interim response to a resolution by the Committee on Public Works of the House of Representatives, adopted July 1, 1958. This report was also prepared in response to the provision of funds in the Energy and Water Development Appropriations Act of 1998, under the authority of Section 216 of the 1970 Flood Control Act, which authorizes the Secretary of the Army to review the operation of projects which were constructed by the Corps of Engineers when found advisable due to significant changed physical, economic, or environmental conditions. Preconstruction engineering and design activities for the Des Moines and Raccoon Rivers project will be continued under these authorities.
2. The reporting officers recommend authorization of a project for flood damage reduction and recreation for Des Moines, Iowa. The recommended plan would provide increased flood protection along the Des Moines and Raccoon Rivers to the areas of Birdland Park, Central Place and downtown Des Moines. The flood damage reduction features of the recommended plan consist of constructing 7,700 feet of levee and 440 feet of retaining wall with one closure structure generally along and extending the existing non-Federal levee at Birdland Park; constructing 5,900 feet of levee generally along and extending the existing non-Federal Central Place levee; and modifying three existing pump stations. The recommended plan also includes modification to nineteen closure structures in the existing Federal downtown levee system (downtown, east, west, and south levees) including permanently closing 7 levee closures, reducing the size of 11 levee closures, and installing gates at existing pedestrian walkway closures at the Simon Estes Amphitheater. The recreation features include 5,100 feet of recreational trail along the Birdland Park levee with access to Riverview Park and landscaping along the levee crossing Riverview Park.
3. Based on October 2005 price levels, the total first cost of the recommended plan is estimated at \$10,500,000. The total first cost of the project includes approximately \$10,240,000 for flood damage reduction and approximately \$260,000 for recreation. In accordance with the cost sharing provisions of Section 103 of the Water Resources Development Act (WRDA) of 1986,

CECW-PC

SUBJECT : Des Moines and Raccoon Rivers, Des Moines, Iowa

as amended, flood control features would be cost shared 65 percent Federal and 35 percent non-Federal. Thus the Federal cost of the flood control features is estimated at \$6,656,000 and the non-Federal cost is estimated at \$3,584,000. The estimated total first cost also includes a separable recreation trail. This feature is estimated at \$260,000; and based on cost sharing requirements of Section 103 of WRDA 1986, it would be shared 50 percent Federal and 50 percent non-Federal. The overall Federal share of the estimated total first cost of the project would be \$6,800,000 and the non-Federal share would be \$3,700,000. The City of Des Moines, Iowa, is the non-Federal cost sharing sponsor for all features of the plan. The City of Des Moines would be responsible for the operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) of the project after construction, a cost currently estimated at \$30,000 per year. This includes \$29,000 per year for flood damage reduction and \$1,000 per year for recreation. Equivalent annual costs, based on a discount rate of 5 1/8 percent and a 50-year period of analysis for flood damage reduction are estimated at \$642,000 and for recreation are estimated at \$16,000, including OMRR&R, for a total of \$658,000. Equivalent annual benefits for flood damage reduction are estimated at \$1,667,000 and for recreation are estimated at \$127,000, for a total of \$1,794,000. This results in equivalent annual net benefits of \$1,025,000 for flood damage reduction and \$111,000 for recreation for total equivalent annual net benefits of \$1,136,000. The benefit-to-cost ratio for flood damage reduction is 2.6; and the benefit-to-cost ratio for recreation is 7.9; and the overall project benefit-to-cost ratio is 2.7 to 1. The recommended plan is a locally preferred plan (LPP). The LPP has greater net benefits than smaller scaled plans and is smaller in scope and less costly than the national economic development (NED) plan. The LPP would provide the maximum level of protection desired by the non-Federal sponsor.

4. The reporting officers estimate that there is a greater than 95 percent probability that the Birdland Park and Central Place levee segments would protect adjacent areas from a flood which has a 0.2 percent chance of occurring in any year (500-year flood). These levee segments would reduce expected annual flood damage in the Birdland Park and Central Place areas by more than 98 percent. The selected plan would substantially increase the reliability of closure structures in the downtown levee system for floods which have less than a 1 percent chance of occurrence in any year (greater than a 100-year flood). The project would also reduce the threat to loss of life and reduce health and safety services disruptions. The recreation features are consistent with proposed recreational improvements to enhance the riverfront in downtown Des Moines. Unavoidable environmental impacts would be fully mitigated by the creation of 13 to 16 acres of emergent wetland, open water, upland forest, and herbaceous upland buffer at the Chichaqua mitigation site, northeast of Des Moines. Further compensation includes approximately 5 acres of bottomland forest enhancement, and upland forest creation on the riverside of the levee at Central Place.

5. Washington level review indicates that the plan recommended by the reporting officers is environmentally justified, technically sound, cost effective and socially acceptable. The plan conforms with essential elements of the U.S. Water Resources Council's Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation

CECW-PC

SUBJECT : Des Moines and Raccoon Rivers, Des Moines, Iowa

Studies and complies with other administration and legislative policies and guidelines. Also, the views of interested parties, including Federal, State and local agencies, have been considered.

6. I concur in the findings, conclusions and recommendation of the reporting officers. Accordingly, I recommend that the plan described herein be authorized, with such modifications as in the discretion of the Chief of Engineers may be advisable. This 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 by Section 210 of WRDA 1996. Further, this recommendation is subject to the non-Federal sponsor agreeing to comply with all applicable Federal laws and policies, and that it shall be responsible for the following items of local cooperation:

a. Provide a minimum of 35 percent, but not to exceed 50 percent, of total project costs allocable to structural flood control, and 50 percent of total project costs allocable to recreation as further specified below:

1. Enter into an agreement which provides, prior to execution of the project cooperation agreement, 25 percent of design costs;

2. Provide, during the first year of construction, any additional funds needed to cover the non-federal share of design costs;

3. Provide, during construction, a cash contribution equal to 5 percent of total project costs allocable to structural flood control;

4. Provide all lands, easements, and rights-of-way, including suitable borrow and dredged or excavated material disposal areas, and perform or assure the performance of all relocations determined by the Federal Government to be necessary for the construction, operation, and maintenance of the project;

5. Provide or pay to the Federal Government the cost of providing all retaining dikes, wasteweirs, bulkheads, and embankments, including all monitoring features and stilling basins, that may be required at any dredged or excavated material disposal areas required for the construction, operation, and maintenance of the project; and

6. Provide, during construction, any additional costs necessary to make its total contribution equal to at least 35 percent of total flood control costs and 50 percent of total recreation costs;

b. Provide 100 percent of the total recreation costs that exceed an amount equal to 10 percent of the Federal share of total flood control costs;

CECW-PC

SUBJECT : Des Moines and Raccoon Rivers, Des Moines, Iowa

c. Provide the non-Federal share of that portion of the costs of mitigation and data recovery activities associated with historic preservation, that are in excess of 1 percent of the total amount authorized to be appropriated for the project, in accordance with the cost sharing provisions of the agreement;

d. Do not use Federal funds to meet the non-Federal Sponsor's share of total project costs unless the Federal granting agency verifies in writing that the expenditure of such funds is authorized;

e. Operate, maintain, repair, replace and rehabilitate the project, or functional portion of the project, including mitigation, at no cost to the Federal Government, in a manner compatible with the project's authorized purposes 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, now or hereafter, owns or controls for access to the project for the purpose of inspecting, operating, maintaining, repairing, replacing, rehabilitating, or completing the project. No completion, operation, maintenance, repair, replacement, or rehabilitation by the Federal Government shall relieve the Non-Federal Sponsor of responsibility to meet the Non-Federal Sponsor's obligations, or to preclude the Federal Government from pursuing any other remedy at law or equity to ensure faithful performance;

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

h. Perform, or cause to be performed, 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 U.S.C. 9601-9675), that may exist in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be required for the initial construction, periodic nourishment, operation, and maintenance of the project. However, for lands that the Federal Government determines to be subject to the navigation servitude, only the Federal Government shall perform such investigations unless the Federal Government provides the Non-Federal Sponsor with prior specific written direction, in which case the Non-Federal Sponsor shall perform such investigations in accordance with such written direction;

i. Assume, as between the Federal Government and the non-Federal Sponsor, complete financial responsibility for all necessary cleanup and response costs of any CERCLA regulated materials located in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be necessary for the initial construction, periodic nourishment, operation, or

CECW-PC

SUBJECT : Des Moines and Raccoon Rivers, Des Moines, Iowa

maintenance of the project;

j. Agree that, as between the Federal Government and the Non-Federal Sponsor, the Non-Federal Sponsor shall be considered the operator of the project for the purpose of CERCLA liability, and to the maximum extent practicable, operate, maintain, and repair the project in a manner that will not cause liability to arise under CERCLA;

k. Prevent obstructions of or encroachments on the project (including prescribing and enforcing regulations to prevent such obstruction or encroachments) which might reduce the level of protection it affords, hinder operation and maintenance, or interfere with its proper function, such as any new developments on project lands or the addition of facilities which would degrade the benefits of the project;

l. Not less than once each year, inform affected interests of the extent of protection afforded by the project;

m. Keep and maintain books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to the project, for a minimum of 3 years after completion of the accounting for which such books, records, documents, and other evidence is required, to the extent and in such detail as will properly reflect total costs of construction of the Project, and in accordance with the standards for financial management systems set forth in the Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments at 32 Code of Federal Regulations (CFR) Section 33.20;

n. Comply with Section 221 of Public Law 91-611, Flood Control Act of 1970, as amended (42 U.S.C. 1962d-5), and Section 103 of the Water Resources Development Act of 1986, Public Law 99-662, as amended (33 U.S.C. 2213), which provides that the Secretary of the Army shall not commence the construction of any water resources project or separable element thereof, until the non-Federal sponsor has entered into a written agreement to furnish its required cooperation for the project or separable element;

o. Comply with all applicable Federal and State laws and regulations, including, but not limited to, Section 601 of the Civil Rights Act of 1964, Public Law 88-352 (42 U.S.C. 2000d), and Department of Defense Directive 5500.11 issued pursuant thereto, as well as Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army", and all applicable Federal labor standards and requirements, including but not limited to 40 U.S.C. 3141- 3148 and 40 U.S.C. 3701 – 3708 (revising, codifying and enacting without substantial change the provisions of the Davis-Bacon Act (formerly 40 U.S.C. 276a *et seq.*), the Contract Work Hours and Safety Standards Act(formerly 40 U.S.C. 327 *et seq.*) and the Copeland Anti-Kickback Act (formerly 40 U.S.C. 276c *et seq.*);

CECW-PC

SUBJECT : Des Moines and Raccoon Rivers, Des Moines, Iowa

p. Comply with Section 402 of the Water Resources Development Act of 1986, as amended (33 U.S.C. 701b-12), which requires a Non-Federal interest to participate in and comply with applicable Federal floodplain management and flood insurance programs, prepare a flood plain management plan within one year after the date of signing a Project Cooperation Agreement, and implement the plan not later than one year after completion of construction of the project;

q. Comply with all 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. 4601-4655), and the Uniform Regulations contained in 49 CFR Part 24, in acquiring lands, easements, and rights-of-way, necessary for the initial construction, periodic nourishment, operation, and maintenance of the project, including those necessary for relocations, borrow materials, and dredged or excavated material disposal, and inform all affected persons of applicable benefits, policies, and procedures in connection with said Act; and,

r. Provide and maintain recreation features, such as appropriate roads, parking areas, and other public use facilities, open and available to all on equal terms.

7. 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 the Congress, the City of Des Moines as the non-Federal sponsor, the State, interested Federal agencies, and other parties will be advised of any significant modifications and will be afforded an opportunity to comment further.

A handwritten signature in black ink, appearing to read 'Carl A. Strock', with a long horizontal line extending to the right.

CARL A. STROCK  
Lieutenant General, U.S. Army  
Chief of Engineers