



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

REPLY TO
ATTENTION OF

CECW-MVD (1105-2-10a)

JAN 27 2011

SUBJECT: Cedar River, Cedar Rapids, Iowa

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on flood risk management along the Cedar River in Cedar Rapids, Iowa. It is accompanied by the report of the district and division engineers. These reports are in response to a House Resolution adopted April 5, 2006, by the Committee on Transportation and Infrastructure, and Senate Resolution adopted May 23, 2006, by the Committee on Environment and Public Works. Both resolutions "requested the review of past pertinent reports to determine whether any modifications to the recommendations are advisable in the interest of flood risk management, ecosystem restoration, recreation, and related purposes along the Cedar River in Cedar Rapids, Iowa." Preconstruction engineering and design activities for the Cedar River project will continue under the authority provided by the resolutions cited above.
2. The reporting officers recommend authorization of a plan to reduce flood risk along the east bank of the Cedar River in the City of Cedar Rapids. The recommended plan consists of 2.2 miles of floodwall and 0.8 miles of earthen levee with a height of approximately 14 feet, 15 closure structures, and six pumping stations constructed on the east bank of the Cedar River. Recreation or ecosystem restoration measures were found to be not justified and are therefore not part of the recommended plan. The project does not require any separable mitigation as the project has been design to offset any adverse impacts which may occur. The recommended plan is the National Economic Development (NED) plan.
3. Based on an October 2010 price level, the estimated total first cost of the recommended plan is \$99,000,000. In accordance with the cost sharing provisions of the Section 103 of the Water Resources Development Act of 1986 (WRDA 1986), as amended by Section 202 of WRDA 1996, the Federal share of the total project cost is estimated at \$64,350,000 (65 percent) and the non-Federal share is estimated at \$34,650,000 (35 percent). The cost of lands, easements, rights-of-way, relocations, and excavated material disposal areas is estimated at \$11,700,000. The City of Cedar Rapids, Iowa is the non-Federal cost sharing sponsor for the recommended plan. The City of Cedar Rapids would be responsible for the operation, maintenance, repair, replacement,

CECW-PC (1105-2-10a)

SUBJECT: Cedar River, Cedar Rapids, Iowa

and rehabilitation (OMRR&R) of the project after construction, a cost currently estimated at \$18,000 per year.

4. Based on a 4.125-percent discount rate and a 50-year period of analysis, the total equivalent average annual costs of the project, including OMRR&R, are estimated to be \$5,125,000. The equivalent average annual benefits are estimated to be \$6,144,000 with net average annual benefits of \$1,019,000. The benefit-cost ratio is approximately 1.2 to 1. The reporting officers estimate that the recommended plan has a 99.99 percent chance of containing a 1 percent flood event and a 91.24 percent chance of containing a 0.2 percent flood event. The recommended plan would reduce expected annual flood damages to the east bank area by about 84 percent.

5. The goals and objectives included in the Campaign Plan of the U.S. Army Corps of Engineers have been fully integrated into the Cedar Rapids study process. As part of an Integrated Water Resources Management Plan (IWRMP), the recommended plan was developed in coordination and consultation with various Federal, State and local agencies using a systems approach in formulating flood risk management solutions and in evaluating the impacts and benefits of those solutions. Study formulation looked at a wide range of non-structural and structural alternatives with only the downtown east bank being justified for structural flood risk reduction measures under Corps policy and guidelines. Alternative formulation optimized the costs and benefits of an array of design heights based on various flood event risks. Floodwall and levee components incorporate robust, sustainable designs like a T-wall atop a sheetpile curtain, and a clay levee with a 10-foot top width and 3 on 1 horizontal to vertical side slopes. In addition, the levee system was viewed in context with the sponsor's Preferred Flood Management System to ensure that the recommended plan complemented the goals of the larger system and did not induce any negative impacts to other system components. Since the record flood event in June 2008 flood (which exceeded the 0.2 percent flood), the District has participated in four meetings, multiple workshops and town halls hosted by the sponsor involving over 2,600 citizens. As part of the IWRMP, the non-Federal sponsor developed the locally Preferred Flood Management System in which providing a structural flood risk management alternative for both sides of the floodplain was viewed as critical. As the first phase of executing the IWRMP (which includes the Corps' east side plan), the non-Federal sponsor, Linn County, and private property owners are implementing non-structural measures using FEMA, HUD, and Local Option Sales Tax programs. This approach allows each agency's programs to provide funding targeted at reducing the risk to the west side floodplain and other areas within the City. Finally, the IWRMP includes the development of the overarching Iowa-Cedar River Comprehensive Plan which will work to formulate a comprehensive watershed plan and process for interagency collaboration to address water resource and related land resource problems and opportunities within the watershed. The development of this collaborative approach to solving water resource problems engaged the non-Federal sponsor throughout the feasibility process leading to the development of an overall

CECW-PC (1105-2-10a)

SUBJECT: Cedar River, Cedar Rapids, Iowa

Integrated Water Resources Management Plan through integration of the recommended plan with the non-Federal sponsor's Preferred Flood Management System.

6. The non-Federal sponsor wishes to perform design and construction of structural flood risk management measures that are elements of the recommended plan. The non-Federal sponsor intends to design and construct a segment of floodwall on the east side of the Cedar River upstream of Interstate 380, from approximately station 165+00 to approximately station 186+00. This approximately 2,100-foot segment of floodwall would effectively reduce flood risk for the 1% flood event to industrial properties in this area. Pursuant to Section 221 of the Flood Control Act of 1970 as amended, the non-Federal sponsor will be eligible to receive credit for the work, subject to a determination by the Secretary of the Army that the work is integral to the project and execution of an agreement covering the work that is executed by the Corps and the non-Federal sponsor prior to work being carried out.

7. In accordance with the Corps Engineering Circular on review of decision documents, all technical, engineering and scientific work underwent an open, dynamic and vigorous review process to ensure technical quality. This included an independent Agency Technical Review (ATR), an Independent External Peer Review (IEPR), and a Corps Headquarters policy and legal review. All concerns of the ATR have been addressed and incorporated into the final report. The IEPR report was completed by Battelle Memorial Institute and provided to the Rock Island District in 2010. A total of 12 comments were received, of which two were deemed significant regarding (a) the potential for additional sponsor costs for the ongoing Phase 1 Archeological and Architectural Survey and (b) the potential for the 2008 flood event to create additional economic uncertainties related to the existing and future project damage estimates. In response, sections in the district's main report and Economics Appendix were expanded to include additional information. All comments from the above referenced reviews have been addressed and incorporated into the final project documents and recommendation as appropriate. Level II IEPR for Safety Assurance will be conducted in accordance with EC 1165-2-209 during the implementation of the Preconstruction Engineering and Design phase. Overall the reviews have resulted in the improvement in the technical quality of the report.

8. The Washington level review indicates that the plan recommended by the reporting officers is technically sound, economically justified, and environmentally and socially acceptable. As the report discusses, residual risk will remain with this plan in place and emphasizes the role of the non-Federal sponsor in addressing and communicating residual risk. The plan complies with essential elements of the U.S. Water Resources Council's Economic and Environmental Principles and Guidelines for Water and Land Related Resources Implementation 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.

CECW-PC (1105-2-10a)

SUBJECT: Cedar River, Cedar Rapids, Iowa

9. I concur with the findings, conclusions, and recommendations of the reporting officers. Accordingly, I recommend that the Cedar Rapids project be authorized in accordance with the reporting officer's recommended plan at a total estimated cost of \$99,000,000 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 by Section 202 of WRDA 1996. Accordingly, the non-Federal sponsor must agree with the following requirements prior to project implementation.

a. Provide a minimum of 35 percent, but not to exceed 50 percent of total first costs further specified as follows:

(1) Provide 25 percent of design costs allocated by the Federal Government to flood risk management in accordance with the terms of a design agreement entered into prior to commencement of design work for the flood risk management features;

(2) Provide, during the first year of construction, any additional funds necessary to pay the full non-Federal share of design costs allocated by the Federal Government to flood risk management;

(3) Provide, during construction, a contribution of funds equal to 5 percent of total flood risk management costs;

(4) Provide all lands, easements, and 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 all as determined by the Federal Government to be required or to be necessary for the construction, operation, and maintenance of the flood risk management features;

(5) Provide, during construction, any additional funds necessary to make its total contribution for flood risk management equal to at least 35 percent of total flood risk management costs;

b. Not use funds from other Federal programs, including any non-Federal contribution required as a matching share therefore, to meet any of the City obligations for the project unless the Federal agency providing the Federal portion of such funds verifies in writing that such funds are authorized to be used to carry out the project;

CECW-PC (1105-2-10a)

SUBJECT: Cedar River, Cedar Rapids, Iowa

c. Not less than once each year, inform affected interests of the extent of flood damage reduction afforded by the flood risk management features;

d. Agree to participate in and comply with applicable Federal floodplain management and flood insurance programs;

e. Comply with Section 402 of the WRDA of 1986, as amended (33 U.S.C. 701b-12), which requires a non-Federal interest to prepare a floodplain management plan within one year after the date of signing a project cooperation agreement, and to implement such plan not later than one year after completion of construction of the flood risk management features;

f. 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 degrees of flood risk management provided by the flood risk management features;

g. 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 level of protection the flood risk management features afford, hinder operation and maintenance of the project, or interfere with the project's proper function;

h. 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 required for construction, operation, and maintenance of the project, including those necessary for relocations, the borrowing of materials, or the disposal of dredged or excavated material; and inform all affected persons of applicable benefits, policies, and procedures in connection with said Act;

i. 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 purposes and in accordance with applicable Federal and state laws and regulations and any specific directions prescribed by the Federal Government;

j. Give the Federal Government a right to enter, at reasonable times and in a reasonable manner, upon property that the City owns or controls for access to the project for the purpose of completing, inspecting, operating, maintaining, repairing, rehabilitating, or replacing the project;

CECW-PC (1105-2-10a)

SUBJECT: Cedar River, Cedar Rapids, Iowa

k. 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;

l. Keep and maintain books, records, documents, or other evidence pertaining to costs and expenses incurred pursuant to the project, for a minimum of three years after completion of the accounting for which such books, records, documents, or other evidence are required, to the extent and in such detail as will properly reflect total project costs, 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 Section 33.20;

m. 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; 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 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.*);

n. 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 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 construction, 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 City with prior specific written direction, in which case the City shall perform such investigations in accordance with such written direction;

o. Assume, as between the Federal Government and the City, 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;

CECW-PC (1105-2-10a)
SUBJECT: Cedar River, Cedar Rapids, Iowa

p. Agree, as between the Federal Government and the City, that the City shall be considered the 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; and

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

r. 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 one percent of the total amount authorized to be appropriated for the project.

s. 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 one percent of the total amount authorized to be appropriated for the project.

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, the State, interested Federal agencies, and other parties will be advised of any significant modifications and will be afforded an opportunity to comment further.


R. L. VAN ANTWERP
Lieutenant General, US Army
Chief of Engineers