



DEPARTMENT OF THE ARMY  
OFFICE OF THE CHIEF OF ENGINEERS  
WASHINGTON, D.C. 20310-2600

REPLY TO  
ATTENTION OF

CECW-PM (1105-2-10a)

22 JUL 2003

SUBJECT: Tanque Verde Creek, Pima County, Arizona

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on the study of flood damage reduction for Tanque Verde Creek in the city of Tucson, Pima County, Arizona. It is accompanied by the report of the district and division engineers. These reports are in partial response to Section 6 of the Flood Control Act of 1938, which directed the Secretary of the Army to study flood control and allied purposes for the Gila River and Tributaries. Construction of protective measures to control bank erosion along the Rillito River, downstream of Tanque Verde Creek, was authorized by Section 601(b) of the Water Resources Development Act (WRDA) of 1986. Subsequent language in House Report 105-190, accompanying the Energy and Water Development Appropriations Bill of 1998, directed the U.S. Army Corps of Engineers to conduct a limited reevaluation report of Tanque Verde Creek immediately upstream of and including Craycroft Road Bridge to determine the advisability of extending the bank protection and related measures. Pre-construction engineering and design (PED) activities for this project will be continued under these authorities.
2. The reporting officers recommend authorization of a plan to minimize flood damages to residential, commercial, public, and historic properties in the city of Tucson. The recommended plan provides for erosion reduction to the unprotected banks of Tanque Verde Creek for about the last mile of the creek between Sabino Canyon Road and Craycroft Road just upstream of the Rillito River. The recommended plan for reducing flood damages includes complete bank erosion control on the southern bank with the construction of two segments, one of which is approximately 4,200 linear feet and the other 2,830 linear feet; partial bank erosion control on the north bank (1,550 linear feet) protecting vulnerable public infrastructure; and the establishment of a 48-acre riparian habitat area with toe protection as biological mitigation. This plan would reduce flood damages to public and residential properties due to bank erosion and lateral creek migration. The recommended plan is the national economic development (NED) plan and is also the plan that provides the highest benefits.
3. Based on October 2002 prices, the total first cost of the flood damage reduction project plan is \$4,878,000. Based upon the requirements of WRDA 1986, as amended by WRDA 1996, cost sharing for the flood damage reduction features of the recommended plan would be 65 percent Federal and 35 percent non-Federal. Accordingly, the Federal cost would be approximately \$3,170,700 and the non-Federal cost would be approximately \$1,707,300. All operation,

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maintenance, repair, replacement and rehabilitation costs (OMRR&R), including those required for mitigation features, would be the responsibility of the non-Federal sponsor. Annual OMRR&R costs are estimated at \$17,900. The non-Federal sponsor is the Pima County Department of Transportation and Flood Control District.

4. Average annual benefits and costs, based on October 2002 price levels, a discount rate of 5 7/8 percent, and a 50-year period of economic analysis, are estimated at \$782,400 and \$330,800, respectively, with a resulting net benefit of \$451,600. The overall benefit-to-cost ratio is 2.4 to 1.0.

5. Washington level review indicates that the plan recommended by the reporting officers is technically sound, economically justified, and environmentally and socially acceptable. The proposed project complies with applicable Corps planning procedures and regulations. Also, the views of interested parties, including Federal, State and local agencies, have been considered.

6. I concur in the findings, conclusions, and recommendations of the reporting officers. Accordingly, I recommend that improvements for flood damage reduction on Tanque Verde Creek in the city of Tucson, Pima County, Arizona, be authorized generally in accordance with the reporting officers' recommended plan. My recommendation is subject to cost sharing, financing, and other applicable requirements of Federal and State laws and policies, including WRDA 1986, as amended by Section 202 of WRDA 1996.

7. As provided in Section 104 of WRDA 1986, the reporting officers recommend that the non-Federal sponsor for flood control receive credit for work carried out which is compatible with the recommended plan for authorization. The Pima County Department of Transportation and Flood Control District requested credit for constructing approximately 4,200 linear feet of soil cement bank protection along the south bank of the Tanque Verde Creek, beginning from the existing bank protection west of Sabino Canyon Road to the existing bank protection at the downstream end (gap on the upstream end of the south bank). This potential credit was approved in concept by the Assistant Secretary of the Army for Civil Works on 7 June 1999, subject to the feasibility study findings, the requirements of section 104, and project authorization. In advance of the completion of the feasibility study, the Pima County Department of Transportation and Flood Control District constructed work which is fully consistent with the recommended plan, and therefore, would be eligible for credit against the non-Federal share of project costs. The total cost of sponsor work was \$1,121,500, including relocations and other items, which are a non-Federal cost-share responsibility. The estimated section 104 credit is \$1,121,500 and is reflected in the cost sharing shown above for the recommended plan. The amount of the credit will be the lesser of the actual cost of work incurred by the sponsor or the cost had the Federal Government constructed the same portion of the project at the time the work was done.

8. Federal implementation of the authorized project would be subject to the non-Federal sponsor agreeing to comply with applicable Federal laws and policies, including but not limited to:

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a. Provide a minimum of 35 percent, but not to exceed 50 percent of total projects costs allocated to structural flood control, as further specified below.

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

(2) Provide all improvements required on lands, easements, and rights-of-way to enable the proper disposal of dredged or excavated material associated with the construction, operation, and maintenance of the project. Such improvements may include, but are not necessarily limited to, retaining dikes, waste weirs, bulkheads, embankments, monitoring features, stilling basins, and dewatering pumps and pipes.

(3) Provide any additional amounts as are necessary to make its total contribution equal to 35 percent of total project costs assigned to flood control.

(4) Enter into an agreement which provides, prior to construction, 25 percent of PED costs.

(5) Provide, during the first year of construction, any additional funds needed to cover the non-Federal share of PED costs.

b. For so long as the project remains authorized, operate, maintain, repair, replace and rehabilitate the completed project in order to ensure the hydraulic integrity of the system, along with any required long-term dredged or excavated material disposal areas, 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.

c. Give the Government a right to enter, at reasonable times and in a reasonable manner, upon property that the non-Federal sponsor owns or controls for the purpose of inspection and, if necessary, for the purpose of operating, maintaining, repairing, replacing, or rehabilitating the project.

d. Assume responsibility for operating, maintaining, replacing, repairing, and rehabilitating (OMRR&R) the project or completed functional portions of the project, including mitigation features without cost to the Government, in a manner compatible with the project's authorized purpose and in accordance with applicable Federal and State laws and specific directions prescribed by the Government in the OMRR&R manual and any subsequent amendments thereto.

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e. Comply with Section 221 of Public Law 91-611, Flood Control Act of 1970, as amended, and Section 103 of the WRDA 1986 (Public Law 99-662) as amended, 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.

f. Hold and save the United States free from all damages arising from the construction, operation, and maintenance of the project and any betterment, except for damages due to the fault or negligence of the United States or its contractors.

g. Keep, and maintain books, records, documents, and 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, and other evidence is required, to the extent and in such detail as will properly reflect total cost of construction of the flood damage reduction features, 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 CFR, Section 33.20.

h. Perform, or cause to be performed, any investigations for hazardous substances as are determined necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 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 necessary for the construction, operation, and maintenance of the project. However, for lands that the Government determines to be subject to the navigation servitude, only the Government shall perform such investigation 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 complete financial responsibility, as between the Federal Government and the non-Federal sponsor, 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 construction, operation, or maintenance of the project.

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

k. Prevent future encroachments on project lands, easements, and rights-of-way which might interfere with the proper functioning of the project.

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l. Comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended by Title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987, Public Law 100-17, 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, borrow materials, and dredged or excavated material disposal, and inform all affected persons of applicable benefits, policies, and procedures in connection with said act.

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, 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" 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).

n. Provide 35 percent of that portion of total cultural resource preservation mitigation and data recovery costs attributable to flood control that are in excess of 1 percent of the total amount authorized to be appropriated for flood control.

o. Comply with Executive Order 11644, "Use of Off-Road Vehicles on the Public Lands," dated 8 February 1972 as amended by Executive Order 11989, dated 24 May 1977, which established policies and provides for procedures to ensure that the use of off-road vehicles on public land is controlled to protect the resources, promote safety of all users, and minimize conflicts among the various uses.

p. Participate in and comply with applicable Federal floodplain management and flood insurance programs.

q. 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.

r. Comply fully with 26 U.S.C. 1344 for the attainment of section 404 permits for OMRR&R activities of the project.

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

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program and budgeting priorities in the formulation of a national civil works construction program nor 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 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.



ROBERT B. FLOWERS  
Lieutenant General, U.S. Army  
Chief of Engineers