



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

REPLY TO
ATTENTION OF:

CECW-PM (10-1-7a)

29 DEC 2000

SUBJECT: Rio de Flag, Flagstaff, Arizona

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on the study of flood damage reduction along the Rio de Flag in Flagstaff, Arizona. It is accompanied by the report of the district and division engineers. These reports are in partial response to a resolution adopted by the Committee on Public Works and Transportation of the House of Representatives on 17 May 1994. The resolution requested a review of reports for the State of Arizona to determine whether modifications of the recommendations contained therein are advisable at the present time in the interest of flood damage reduction, environmental protection and restoration, and related purposes.
2. Section 101(b)(3) of the Water Resources Development Act of 2000 (WRDA 2000) authorized construction of the Rio de Flag, Flagstaff, Arizona, project for flood damage reduction subject to completion of a favorable report of the Chief of Engineers not later than 31 December 2000 and subject to the conditions recommended in that final report. The authorizing language for this Rio de Flag project reflects a total project cost of \$24,072,000, with an estimated Federal cost of \$15,576,000 and an estimated non-Federal cost of \$8,496,000. This report constitutes the final report of the Chief of Engineers required by WRDA 2000.
3. The plan recommended by the reporting officers would reduce the potential for significant flood damages to residential, commercial, industrial, and historical structures in the city of Flagstaff, including Northern Arizona University, and for the western portion of Flagstaff along Clay Avenue Wash. The plan consists of channel modifications located along both Clay Avenue Wash and Rio de Flag. Along Clay Avenue Wash, the plan provides for construction of a detention basin with a capacity of about 295 acre-feet to reduce flood flows along the wash; construction of about 4,450 feet of channel modifications downstream to allow for conveyance of the reduced flows to the Rio de Flag; and modification to two river crossings. Along Rio de Flag, the plan provides for modification to 11 river crossings; construction of a combination of berms and floodwalls not exceeding 5 feet in height in the Thorpe Park area; and construction of about 8,250 feet

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of channel modifications downstream of Thorpe Park to convey flood flows through the downtown Flagstaff area. Compensatory mitigation to fully offset the environmental impacts of the project, to a total of 2 acres of riparian habitat, will be accomplished through acquisition and management of 3 acres of land in the project area. Recreation features, consisting of expanding and enhancing the Flagstaff Urban Trails System, have also been incorporated into the recommended plan of improvement. The plan recommended by the reporting officers is the national economic development (NED) plan.

4. Based on October 1999 price levels, the estimated total first cost of the plan recommended by the reporting officers is \$24,072,000, of which \$15,576,000 would be Federal and \$8,496,000 would be non-Federal. Based upon the requirements of WRDA 1986, as amended by Section 202 of WRDA 1996, the Federal share of the flood control cost would be \$15,339,000, and the non-Federal share would be \$8,259,000. The first cost for construction of the selected recreation plan is estimated at \$474,000. Cost sharing for the recreation plan would be 50 percent Federal and 50 percent non-Federal. On this basis, the Federal and non-Federal shares would each be \$237,000. The total annual operations, maintenance, repair, replacement, and rehabilitation (OMRR&R) cost for the recommended project, which is the responsibility of the non-Federal sponsor, is estimated to be \$60,000 per year for flood control and \$1000 per year for recreation.

5. Based on a discount rate of 6.625 percent, amortized over 50 years and including annual OMRR&R, average annual flood control costs are \$1,793,000. Average annual flood damage reduction benefits attributed to the plan are estimated at \$2,287,000, resulting in a benefit-to-cost ratio of 1.3 and \$494,000 in net NED benefits. Average annual recreation costs are \$34,000 and average annual recreation benefits are \$65,000, for a recreation benefit-to-cost ratio of 1.9. The net annual flood control and recreation benefits for this plan are \$525,000. The benefit-to cost ratio for the overall plan is 1.3.

6. The reporting officers have recommended that the plan described herein be exempt, pursuant to Section 404(r) of the Clean Water Act (CWA), from the requirement to obtain a State water quality certification. Section 404(r) of the CWA provides that discharge of dredged or fill material as part of the construction of a specifically authorized Federal project is not subject to the requirement to obtain State water quality certification "if information on the effects of such discharge... is included in an environmental impact statement for such project... [which] has been submitted to Congress before actual discharge of dredged or fill material in connection with the construction of such project and prior to either authorization of such project or an appropriation of funds for such construction." I intend to invoke the provision of Section 404(r) by submitting to the Congress an environmental impact statement with the required information prior to appropriation of funds for construction of this project.

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7. Washington level review indicated that the plan recommended by the reporting officers is technically sound, economically justified, and environmentally 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 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.

8. I concur in the findings, conclusions and recommendations of the reporting officers. Accordingly, I recommend that implementation of the authorized project for flood damage reduction and recreation be in accordance with the reporting officers' plan with such modifications as in the discretion of the Chief of Engineers may be necessary and advisable. My recommendation is subject to cost sharing, financing, and other applicable requirements of Federal and State laws and policies, including Public Law 99-662, the Water Resources Development Act of 1986, as amended by Section 202 of Public Law 104-303, the Water Resources Development Act of 1996, and in accordance with the following requirements to which the non-Federal sponsor must agree prior to implementation:

a. Provide a minimum of 35 percent, but not to exceed 50 percent of total project costs allocated to structural flood control, and 50 percent of total project costs allocated 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 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 structural flood control costs;

(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 Government to be necessary for the construction, operation, and maintenance of the project;

(5) Provide or pay to the 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

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(6) Provide, during construction, any additional costs as necessary to make its total contribution equal to 35 percent of total separable costs allocated to structural flood control and 50 percent of the total project recreation costs.

b. Give the Government a right to enter, at reasonable times and in a reasonable manner, upon land which the local sponsor owns or controls for access to the project for the purpose of inspection, and, if necessary, for the purpose of completing, operating, maintaining, repairing, replacing, or rehabilitating the project.

c. 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.

d. Comply with Section 221 of Public Law 91-611, Flood Control Act of 1970, as amended, and Section 103 of the Water Resources Development Act of 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.

e. Hold and save the Government 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 Government or the Government's contractors.

f. Keep and maintain books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to the project to the extent and in such detail as will properly reflect total project costs.

g. 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), 42 USC 9601-9675, that may exist in, on, or under lands, easements or rights-of-way necessary for the construction, operation, and maintenance of the project; except that the non-Federal sponsor shall not perform such investigations on lands, easements, or rights-of-way that the Government determines to be subject to the navigation servitude without prior specific written direction by the Government.

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h. Assume 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 Government determines necessary for the construction, operation, or maintenance of the project.

i. 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, repair, replace, and rehabilitate the project in a manner that will not cause liability to arise under CERCLA.

j. Prescribe and enforce regulations to prevent obstruction of or encroachment on the project that would reduce the level of protection it affords or that would hinder operation or maintenance of the project.

k. 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, and performing relocations for construction, operation, and maintenance of the project, and inform all affected persons of applicable benefits, policies, and procedures in connection with said act.

l. Comply with all applicable Federal and State laws and regulations, including Section 601 of the Civil Rights Act of 1964, Public Law 88-352, 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 Section 402 of the Water Resources Development Act of 1986, as amended (33 U.S.C. 701b-12), requiring non-Federal preparation and implementation of floodplain management plans.

m. 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.


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

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o. 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.

p. Inform affected interests, at least annually, regarding the limitations of the protection afforded by the project.



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