



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

REPLY TO
ATTENTION OF

CECW-PM (10-1-7a)

March 5, 1992

SUBJECT: Rio Grande de Loiza, Puerto Rico

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on Rio Grande de Loiza, Puerto Rico. It is accompanied by the reports of the District and Division Engineers and the Board of Engineers for Rivers and Harbors. These reports are in final response to resolutions adopted by the Committee on Environment and Public Works of the United States Senate on 26 March 1982 and the Committee on Public Works and Transportation of the United States House of Representatives on 23 September 1982. The resolutions requested a study of possible improvements for flood control, navigation, water supply, and allied purposes in the Rio Grande de Loiza Basin. Investigations focused on possible solutions to the urban flood problems in the upper basin based on a request from the Puerto Rico Department of Natural Resources. Preconstruction engineering and design activities for the Rio Grande de Loiza project will be continued under the authority provided by the above resolutions.
2. The District and Division Engineers recommend improvements in four separate areas, each of which is incrementally justified. These areas consist of the mainstem Rio Grande de Loiza, and the tributaries of Rio Caguaitas, Rio Bairoa, and Rio Gurabo. Rio Grande de Loiza improvements consist of 2.8 kilometers of levees and floodwalls. Improvements on Rio Caguaitas consist of 1.9 kilometers of concrete channels, 1.8 kilometers of gabion-lined channels, and a 24-acre debris basin. Rio Bairoa improvements consist of 1.3 kilometers of concrete channels, 1 kilometer of earth channels, 0.6 kilometer of gabion-lined channels, 1 kilometer of levees, and a 17-acre debris basin. Rio Gurabo improvements consist of 0.7 kilometer of pilot channels and 1.8 kilometers of levees. Recreation trails would be provided on the Rio Grande de Loiza and Rio Gurabo levees.
3. The recommended plan is the NED plan. Each element was formulated independently to maximize net benefits. The plan will reduce flood damages by about 96 percent overall in the communities of Caguas and Gurabo. The average level of protection at Rio Caguaitas and Rio Bairoa are estimated at 70 and 220 years, respectively. The average level of protection for the remaining economic reaches are estimated at 100 years.

CECW-PM

SUBJECT: Rio Grande de Loiza, Puerto Rico

First costs of the recommended plan, based on October 1991 price levels, are \$118,819,000, of which \$88,072,000 would be Federal under cost-sharing provisions of the Water Resources Development Act of 1986, as amended. Average annual costs, based on an interest rate of 8-1/2 percent and a 50-year period for economic analysis, are \$12,000,000, and the benefit-cost ratio is 1.7. Cost-sharing requirements will be adjusted, as necessary, to include appropriate ability-to-pay provisions in effect when the local cooperation agreement is signed.

4. The report was reviewed by the Washington Level Review Center (WLRC). That review indicates that the proposed improvements are technically sound, economically justified, and environmentally acceptable.

5. The Board of Engineers for Rivers and Harbors concurs in the plan recommended by the reporting officers and in the review conclusions of the WLRC. The Board recommends construction of the plan described in the District Engineer's report.

6. I concur in the findings, conclusions, and recommendation of the Board.

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 nor the perspective of higher review levels within the executive branch. Consequently, the recommendation may be modified before it is transmitted to Congress as a proposal for authorization and implementation funding. However, prior to transmittal to Congress, the Commonwealth of Puerto Rico, interested Federal agencies, and other parties will be advised of any modifications and will be afforded an opportunity to comment further.



H. J. HATCH
Lieutenant General, USA
Chief of Engineers