



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

REPLY TO
ATTENTION OF:

CECW-PE (10-1-7a)

22 JAN 1999

SUBJECT: Rio Grande de Manati, Barceloneta, Puerto Rico

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on flood damage reduction improvements for Rio Grande de Manati, Barceloneta, Puerto Rico. It is accompanied by the report of the district and division engineers. These reports were prepared pursuant to Section 205 of the Flood Control Act of 1948, as amended (Public Law 80-858) which authorized the Secretary of the Army, acting through the Chief of Engineers, to allot from any appropriations made for flood control for the construction of small projects. At the time this cost shared feasibility study was initiated, the project costs were within the \$5,000,000 Federal limitation of section 205. Now that the estimate for the Federal share of the project exceeds the Federal limitation, these reports are being submitted to Congress for specific authorization.
2. The reporting officers recommend a flood damage reduction plan which consists of construction of 5,300 meters (17,400 feet) of levees around the town of Barceloneta and 1,620 meters (5,300 feet) of pilot channels for the Rio Grande de Manati to the east of the town. The eastern section of the ring levee extends for about 3,200 meters (10,500 feet) starting at the north interior drainage structure (Culvert 1) and continues east and southeast crossing Calle Plazuela and Highway 684, continuing mainly toward the south, crossing the river meander twice, and continuing south near the municipal sports complex and around Villa Catalana residential development. The western section of the ring levee starts at Culvert 1, and extends for 2,100 meters (6,900 feet) in a southwestern direction across Highway 681 to end at high ground just across Highway 682. The total length of the ring levee is about 5,300 meters (17,400 feet) with an average height above ground of 5.4 meters (17.7 feet), 1 on 3 side slopes on its east and north sections, 1 on 3.5 side slopes on its west part. The levee has a crest of 3 meters (9.8 feet) and an average base of 38 meters (124.7 feet). For safety purposes and to maintain a clear evacuation route to the south should a larger than design flood occur, the northern 400-meter (1,300 feet) stretch of the levee was designed as an overtopping section. The two portions of the existing Rio Grande de Manati channel cut off by the eastern section of the levee are replaced by two pilot (bypass) channels. The pilot channels are designed to be stable and maintain low flow within its banks. The project also includes the construction of minimum interior drainage facilities to collect and dispose of urban runoff caused by a local rainfall event. The interior drainage facilities are required due to the disruption of the existing storm drainage system and the natural drainage

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pattern of the urban area resulting from the construction of the flood control ring levee. Two relatively large areas of mostly agricultural lands, 23.3 hectares (57.5 acres) on the east and 72.4 hectares (179.0 acres) on the north, serve temporarily for storing most of the residual flooding caused by interior runoff. Flood stages on this land for the 1 percent chance of occurrence are reduced from a pre-project elevation of 5.1 meters (16.7 feet) National Geodetic Vertical Datum (NGVD) to a post-project elevation of 2.7 meters (8.9 feet) NGVD. This will allow for its continued use in agriculture. The recommended project requires the construction of one small road ramp over the levee at Highway 682, two road ramps over the levee at Highways 681 and 684, and one agricultural road ramp where the eastern part of the levee precludes access to agricultural lands. Project implementation requires acquisition of seven residential structures, relocation of a boat ramp, and relocation of existing utilities impacted by the levee at four locations.

3. The recommended plan is the national economic development (NED) plan. The recommended plan would provide flood protection against a flood event that has an expected annual exceedance probability of about 1 percent by combining channel construction and levees. The total first cost of the recommended plan is estimated at \$13,491,000 at October 1998 price levels, of which \$8,785,000 would be Federal and \$4,706,000 would be non-Federal. Total average annual costs, based on a Federal interest rate of 6.875 percent and a 50-year period of analysis, are estimated at \$1,021,000. These amounts include non-Federal annual operation, maintenance, repair, rehabilitation, and replacement costs. Total average annual flood damage reduction benefits are estimated at \$4,243,000, yielding net benefits of \$3,222,000, and a benefit to cost ratio of 4.2 to 1. No environmental mitigation is required for the recommended plan.

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

5. I generally concur in the findings, conclusions, and recommendations of the reporting officers. Accordingly, I recommend that improvements for flood damage reduction for Rio Grande de Manati, Barceloneta, Puerto Rico, be authorized subject to cost sharing as required by Public Law 99-662, as amended by Section 202 of Public Law 104-303. My recommendation is subject to the non-Federal sponsor, the Puerto Rico Department of Natural and Environmental Resources, agreeing to comply with applicable Federal laws and policies, including the following requirements:

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

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(1) Enter into an agreement that provides 25 percent of design costs prior to the date of execution of the project cooperation agreement;

(2) Provide, during construction, any additional funds needed to cover the non-Federal share of pre-construction design costs;

(3) Provide, during construction, a cash contribution equal to 5 percent of total project 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 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 as necessary to make its total contribution equal to a minimum of 35 percent of total project costs;

b. For so long as the project remains authorized, operate, maintain, repair, replace, and rehabilitate the completed project or functional portion of the project, at no cost to the Federal Government, in accordance with applicable Federal and State laws and any specific directions prescribed by the Federal Government;

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

d. 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;

e. Keep, and maintain books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to the project in accordance with the standards for financial

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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;

f. 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 required for the operation, maintenance, repair, replacement, and rehabilitation of the project. However, for lands that the Federal Government determines to be subject to the navigation servitude, only the Federal Government will perform such investigations unless the Federal Government provides the non-Federal sponsor with prior specific written direction, in which case the non-Federal sponsor will perform such investigations in accordance with such written direction;

g. 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 required for the operation, maintenance, repair, replacement, or rehabilitation of the project;

h. As between the Federal Government and the non-Federal sponsor, the non-Federal sponsor will be considered the operator of the project for the purpose of CERCLA liability. 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;

i. 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 the operation, maintenance, repair, replacement, and rehabilitation of the project, including that necessary for relocations, borrowed materials, and dredged or excavated material disposal, and inform all affected persons of applicable benefits, policies, and procedures in connection with said act;

j. 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

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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;

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

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

m. 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 and maintenance of the project;

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

o. Publicize floodplain information in the area concerned and provide this information to zoning and other regulatory agencies for their use in preventing unwise future development in the floodplain and in adopting such regulations as may be necessary to prevent unwise future development and to ensure compatibility with protection levels provided by the project;

p. Comply with Section 221 of Public Law 91-611, as amended, and Section 103 of 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; and

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.

6. 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 the Congress as a proposal for authorization and implementation funding. However, prior to transmittal to the Congress, the

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non-Federal sponsor, the Puerto Rico Department of Natural and Environmental Resources; 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.



JOE N. BALLARD

Lieutenant General, U.S. Army
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