

**RIO CULEBRINAS AT AGUADILLA AND AGUADA, PUERTO RICO
SECTION 205
FINAL DETAILED PROJECT REPORT
AND ENVIRONMENTAL ASSESSMENT**

**APPENDIX D
REAL ESTATE PLAN**

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2/00 bam
Revised 9/00,12/00,7/01,10/03 bam

1. STATEMENT OF PURPOSE

a. This Real Estate Plan is tentative in nature for planning purposes only and both the final real property acquisition lines and the real estate cost estimates provided are subject to change even after approval of this Detailed Project Report (DPR).

b. A reconnaissance report for this project was completed on March 1992, which showed that a levee alternative to solve the flooding problem at the study area appeared to be feasible and that further detailed studies were warranted. The Municipalities of Aguadilla and Aguada are the local sponsors for the project.

2. AUTHORIZATION

This study was authorized by Section 205 of the Flood Control Act of 1948 as amended, which states:

The Secretary of the Army is hereby authorized to allot from any appropriations heretofore or hereafter made for flood control, not to exceed \$40,000,000 for any one fiscal year, for the construction of small projects for flood control and related purposes not specifically authorized by Congress, which comes within the provisions of Section 1 of the Flood Control Act of June 22, 1936, when in the opinion of the Chief of Engineers such work is advisable. The amount allotted under this Section for a project shall be sufficient to complete Federal participation in the project. Not more than \$7,000,000 shall be allotted for a project at any single locality. The provisions of local cooperation specified in Section 3 of the Flood Control Act of June 22, 1936, as amended, shall apply. The work shall be complete in itself and not commit the United States to any additional improvements to insure its successful operation, except as may result from the normal procedure applying to projects authorized after submission of preliminary examination and survey reports.

3. PROJECT DESCRIPTION

The Rio Culebrinas Basin is located in the northwestern coast of Puerto Rico within the Municipalities of Lares, San Sebastian, Moca, Aguada, and Aguadilla, approximately 115 kilometers west of San Juan. Flooding is a major frequent

problem along the southwestern edge of the town of Aguadilla and the community of Espinar.

Rio Culebrinas originates in the western part of the central mountain range of Puerto Rico at an elevation of about 450 meters (1,500 feet) above mean sea level. Its major tributaries are Rio Guatemala, Rio Caño, Rio Sonador, and Quebrada Grande. The river flows in a westerly direction through the towns of San Sebastián, Moca, Aguadilla, and Aguada to discharge into the Aguadilla Bay in the Mona Passage. The Caño Madre Vieja, a 2.1 kilometer (1.3 miles) distributary of Rio Culebrinas, is an old river outlet that flows across the study area and discharges into the Aguadilla Bay. This small intermittent stream is the political boundary dividing the Municipalities of Aguadilla and Aguada.

The land in the project and vicinity of the project is predominately agricultural/grazing land within the floodway, further defined as Flood Zone 1. The floodway is defined as:

The water course of the channel, river, creek, brook, or natural drainage channel and that portion of adjacent lands to permit the discharge of the base flood without cumulatively increasing the water surface elevation by more than one foot in undeveloped areas, or six inches in developed areas.

Flood Zone 2 is defined as the area situated between the floodway limits and the limits of the 100-year floodplain. Flood Zone 2 regulations permit new buildings in this zone when these are defined and constructed in such a way that will cause the least possible obstruction to the flow of water, will provide safety conditions, will resist the effects of hydrodynamic and hydrostatic pressures of floodwater or coastal surges, and comply with any other applicable provision of law or regulation.

These definitions are the Government of Puerto Rico Planning Board's Regulation for Floodable Zones, Regulation 13, Second Revision dated March 6, 1987.

The agricultural/grazing land located in the floodway (Flood Zone 1) would still be subject to flooding after the project is implemented, though at considerably less stages than pre-project flooding. Flood Zone 1 restricts land uses to exclude new construction, structures, landfills, substantial improvements or other developments. The Puerto Rico Planning Board will maintain these lands under flood

plain regulations to prohibit development as will be specified in the proposed Project Cooperation Agreement (PCA).

The recommended plan consists of the construction of two levees, interior drainage facilities, 3 road ramps, and a pilot channel that requires approximately 40 acres of land and protects the southwestern section of the town of Aguadilla and the community of Espinar, in Aguada, against the 100-year flood from Rio Culebrinas.

The Aguadilla levee would require approximately 24.20 acres of land and would begin at high ground near Highway 2 and extend towards the north for about 1.8 kilometers to end at high ground near Yumet Avenue. There will be three drainage structures and two road ramps for this levee segment. An interior drainage channel would be required along the protected side of the levee. A culvert will be provided where the road ramps intersects the interior drainage channel. An existing concrete box culvert over Cano Madre Vieja would be impacted by one of the road ramps. This box culvert should be extended to accommodate the road ramp.

The alignment of the proposed Espinar levee has been modified to start outside of the coastal barrier zone thus avoiding any impacts to it. It is about 120 meters or 1.26 acres shorter than what was presented in the first draft report and requires approximately 16.24 acres of land. To protect the lower lying eastern side of the community, a levee spur with an interior drainage channel that is about 266 meters long ties between the coastal barrier zone and the residential area perpendicular to the original levee at the northeast corner of the Espinar community. It covers about 1.23 acres of floodable wetlands and .5 acre of residential area. See Plate D-1. A drainage structure would be constructed for the Espinar levee spur at Espinar levee station 2+50. There would also be a road ramp intersecting the levee at Highway 442.

In order to continue the flow in Cano Madre Vieja to the coastline, a cutoff channel would be required. The cutoff channel would require approximately 1.3 acres of land.

No disposal area would be required. Unsuitable materials and debris from clearing and grubbing operation would be deposited at the municipal landfill. Material from pilot and drainage channels would be used for levee construction and the rest would come from a commercial

borrow site at Tablonal Quarry which is not part of the real estate valuation.

Construction access will be through local public streets and highways. Final access will be determined during the plans and specifications.

The three required road ramps are where the levee crosses Highways 418, 115, and 442. These are further addressed under 15a, Road Relocations. As to Highway 4439, it will be blocked since the Municipality has no interest in keeping it open.

No residential or commercial improvements are known to be affected by this project.

4. FEDERAL OWNED LANDS

There are no federally owned lands within the project limits.

5. SPONSOR OWNED LANDS

The non-Federal sponsors will be responsible for providing all lands, easements and rights-of-way required for the project. No lands required for the project have been identified as sponsor-owned lands. However, all ownerships will be verified and delineated during the preparation of the parcel maps to be performed during plans and specifications.

6. ESTATES

a. Standard Estates

The following standard estates will be required.

FLOOD PROTECTION LEVEE EASEMENT

A perpetual and assignable right and easement in (the land described in Schedule A) (Tracts Nos. _____, _____, & _____) to construct, maintain, repair, operate, patrol and replace a flood protection levee, including all appurtenances thereto; reserving, however, to the owners, their heirs and assigns, all such rights and privileges in the land as may be used without interfering with or abridging the rights and easement hereby acquired; subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

CHANNEL IMPROVEMENT EASEMENT

A perpetual and assignable right and easement to construct, operate, and maintain channel improvement works on, over and across (the land described in Schedule A) (Tracts Nos. ___ and ___) for the purposes as authorized by the Act of Congress approved _____, including the right to clear, cut, fell, remove and dispose of any and all timber, trees, underbrush, buildings, improvements and/or other obstructions therefrom; to excavate, dredge, cut away, and remove any or all of said land and to place thereon dredge or spoil material; and for such other purposes as may be required in connection with said work of improvement; reserving, however, to the owners, their heirs and assigns, all such rights and privileges as may be used without interfering with or abridging the rights and easement hereby acquired; subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

TEMPORARY WORK AREA EASEMENT OR OTHER NON-STANDARD ESTATE

A temporary and assignable easement and right-of-way in, on, over and across (the land described in Schedule A) (Tracts Nos. ___ & ___), for a period not to exceed three (3) years, beginning with date possession of the land is granted to the Project Sponsor, for use by the Project Sponsor and the U.S. Army Corps of Engineers, their representatives, agents, assigns and contractors as a work area, including the right to move, store and remove equipment and supplies, and erect and remove temporary structures on the land and to perform any other work necessary and incident to the construction of Rio Culebrinas Flood Control Project, together with the right to trim, cut, fell and remove therefrom all trees, underbrush, obstructions, and any other vegetation, structures, or obstacles within the limits of the right-of-way; reserving, however, to the landowners, their heirs and assigns, all such rights and privileges as may be used without interfering with or abridging the rights and easement hereby acquired; subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

b. Non-Standard Estates

Due to the lengthy process required to segregate public lands and record legal documents to secure easements, lands to be transferred between governmental agencies is usually accomplished by first executing a Right-of-Entry with Intent to Acquire or a letter permit whereby each entity agrees on the conditions of the transfer, estates and acreage to be transferred and timeframe for completion of transfer. These documents vary in format but are always perpetual, irrevocable, and assignable. In Puerto Rico, they are considered legal, binding documents.

7. NAVIGATION SERVITUDE

Navigational servitude is available to the Federal Government if lands required for this project are within the navigable waters of the United States.

8. PROJECT MAP

A planning map of the project features is included in Plate D-1 along with a map showing the location of the utilities.

9. INDUCED FLOODING

A Takings Analysis prepared August 7, 2003, concluded that "the modeled results for the 10, 25, 50, and 100-year flood on the Rio Culebrinas and Caño Madre Vieja show that there is a very slight increase, 1 to 2 hours at most, in the duration of the flooding in the pooling area. However, the estimated depth of the flooding would decrease in each event modeled at both the highest and lowest elevations in the subject area. Further, the frequencies of the projected events are not substantial. Therefore, in light of current available modeling data and relevant case law, there is no taking in the pooling area behind the northeast portion of the Aguadilla levee." The area will still be subject to flooding with project implementation, though at considerably less stages than pre-project flooding.

10. REAL ESTATE BASELINE COST ESTIMATE

Lands and Damages (Approx. 45 acres):

Flood Protection Levee Easements:	
Espinar Levee (16.24 acres)	\$ 516,000
Aguadilla Levee (24.20 acres)	\$ 557,000

Espinar Levee Spur (1.73 acres)	\$ 59,000
Channel Improvement Easement (1.30 acres)	\$ 5,000
Sub-Total	\$1,137,000
Total Lands and Damages	\$1,137,000

Acquisition/Administrative Costs

Federal:	
Project Planning	\$ 21,000
Review of PCA	\$ 2,000
Review of Acquisitions	\$ 11,000
Review of Appraisals	\$ 6,000
Review of Condemnation	\$ 13,000
Review of PL 91-646	\$ 0

Total Federal Acquisition/ Admin Costs	\$ 53,000
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Non-Federal:	
Acquisitions	\$ 32,000
Appraisals	\$ 16,000
Condemnations	\$ 80,000
PL 91-646	\$ 0

Total Non-Federal Acquisition/ Admin Costs	\$ 128,000
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Public Law 91-646 Payments	\$ 0
Contingency (30%) (RD)	\$ 395,200
Total Estimated Real Estate Costs (RD)	\$ 1,713,200

*A contingency of 30% is estimated to cover uncertainties associated with such elements as valuation variance, negotiation latitude, condemnation awards and interest, and refinement of boundary lines during ownership verification.

11. RELOCATION ASSISTANCE BENEFITS

We do not anticipate any benefits under Public Law 91-646.

12. MINERALS

No known minerals exist in the project area.

13. NON-FEDERAL SPONSOR'S AUTHORITY TO PARTICIPATE

This project has two local sponsors. The Municipality of Aguada would be responsible for the Espinar levee and corresponding features, and the Municipality of Aguadilla would be responsible for the Aguadilla levee and corresponding features. Municipalities within Puerto Rico are empowered by Section 821 of Title 29 of the Statutes of Puerto Rico to construct public works projects in conjunction with agencies of the United States through contracts. This section also provides authority to bond and expend monies therefore. Municipalities are also an autonomous local government whose operations are subject to the Constitution of the Commonwealth of Puerto Rico, and to the Puerto Rico Law for Municipalities, Act 81 of August 30, 1991. Municipalities also have legislative and administrative powers under Section 1107 of Title 21 for municipal purposes to construct public works including the power to acquire lands and equipment necessary and convenient thereto.

14. REAL ESTATE MILESTONES

Acquisition will be initiated after execution of the Project Cooperation Agreement. All lands needed for the project must be acquired and certified to the Federal Government prior to the advertising of project construction contracts. It is estimated to take approximately two years to acquire project lands.

15. RELOCATION OF ROADS, BRIDGES, UTILITIES, TOWNS, AND CEMETERIES

The project sponsors would be required to assume the cost for all relocations and alterations involved with this project. Although this real estate appendix describes the relocations and alterations, it does not include any costs associated with the relocated structures. An Attorney's Opinion of Compensability will have to be requested for the road ramps and the relocation of the utilities to determine if there is a compensable interest in these relocations.

a. Roads

Three road ramps would be required where the proposed levee crosses Highway 418, Highway 115, and Highway 442. These are relocations in place that are located within the levee right-of-way. Since no temporary construction work areas have been delineated for the road ramps, a higher than usual contingency of 30% has been applied to the real estate cost estimate. Any required temporary construction areas will be addressed during plans and specifications.

A detour road will be required for Highway 442 ramp and will be identified during plans and specifications and upon coordination with the Puerto Rico Highway and Transportation Authority. Highway 418 could be used as a detour while working on Highway 115 and vice versa. The locations of the proposed road ramps are shown on Plate C-1.

b. Bridges

There are no bridges affected by this project, except for an existing box culvert located in Cano Madre Vieja under Highway 418 that would have to be extended approximately 10 meters at each end to accommodate the proposed road ramp.

c. Utilities

There are water lines, sewer lines, electric power lines, and telephone lines that would require relocation. The location of the existing utilities and costs associated with these utilities are provided in the attached map.

d. Towns

There are no reestablishment of towns for this project.

e. Cemeteries

There are no identified cemeteries located on lands to be acquired for the project.

16. PRESENCE OF CONTAMINANTS (HAZARDOUS, TOXIC AND RADIOACTIVE WASTES)

There are no known hazardous, toxic, and radiological waste (HTRW) sites within the project area. An initial HTRW assessment was conducted in May 1995 and updated in May 1999. The assessment included an investigation of the water

quality and air quality potential impacts in the project area, review of available literature and documents, and site reconnaissance. The predominant land use is agricultural and poses little or no HTRW threat. No signs of potential HTRW problems were identified and no sites with potential for contamination with HTRW were found.

17. ATTITUDE OF LANDOWNERS

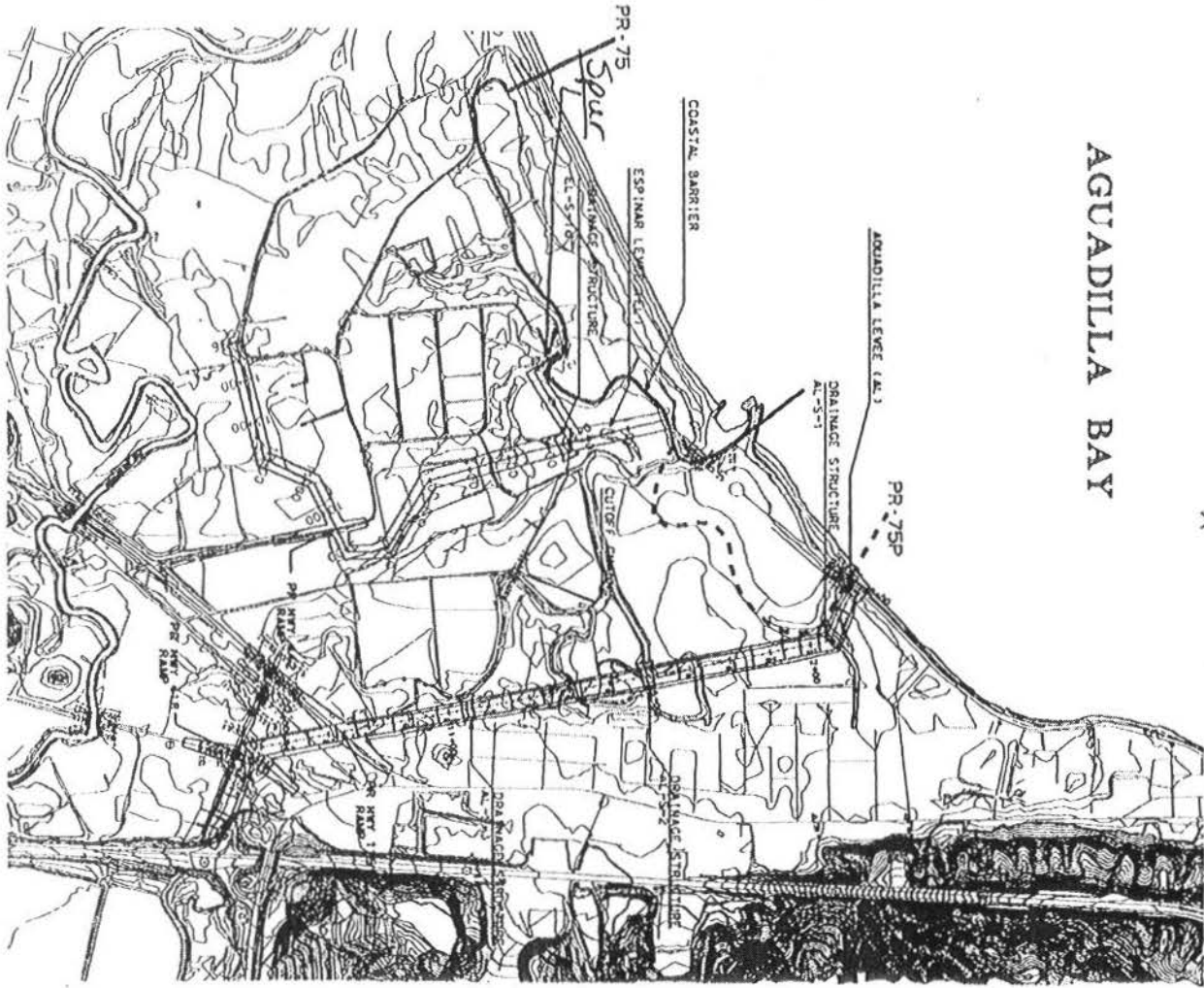
Various interested groups and residents of the floodplain are in support of this project. They have been involved in the coordination effort early on.

18. MCACES

PROJECT: RIO CULEBRINAS FLOOD CONTROL PROJECT, PR
DETAILED PROJECT REPORT

DATE: 2/00; Rev. 9/00, 7/01

01	LANDS AND DAMAGES	
01AA	PROJECT PLANNING	\$21,000
01B--	ACQUISITIONS	
01B20	BY LOCAL SPONSOR (LS)	\$32,000
01B40	REVIEW OF LS	\$11,000
01C-	CONDEMNATIONS	
01C20	BY LS	\$80,000
01C40	REVIEW OF LS	\$13,000
01E--	APPRAISALS	
01E30	BY LS	\$16,000
01E50	REVIEW OF LS	\$ 6,000
01F--	PL 91-646 ASSISTANCE	
01F20	BY LS	\$ 0
01F40	REVIEW OF LS	\$ 0
01G--	TEMPORARY PERMITS/LICENSES RIGHTS-OF-ENTRY	
01G20	BY LS	\$ 0
01G40	REVIEW OF LS	\$ 0
01G60	DAMAGE CLAIMS	
01M00	PROJECTED RELATED ADMINISTRATION REAL ESTATE REVIEW OF PCA	\$ 2,000
01R--	REAL ESTATE PAYMENTS	
01R1	LAND PAYMENTS	
01R1B	BY LS	\$1,137,000
01R2	PL 91-646 ASSISTANCE PAYMENTS	
01R2B	BY LS	\$ 0
	TOTAL REAL ESTATE COST EXCLUDING CONTINGENCY	\$1,318,000
	REAL ESTATE CONTINGENCY (30%) (RD)	\$ 395,200
	TOTAL PROJECT REAL ESTATE COST (RD)	\$1,713,200



AGUADILLA BAY



PLATE
D-1

RIO CULEBRINAS AT AGUADA/AGUADILLA
PUERTO RICO
DETAILED PROJECT REPORT
RECOMMENDED PLAN

Reference files:	Designed by:		Scale:
	Drawn by:	Checked by:	Plot date:
	Dated: JULY 1999		Plot scale: 400:1
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DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA



