

APPENDIX C

Clean Water Act 404(b)(1) Guidelines Evaluation

Rio Culebrinas

Aguada and Agiadilla, Puerto Rico Study

Section 205 Flood Risk Reduction

Continuing Authorities Program (CAP) Conversion

Draft Environmental Assessment



**US Army Corps of Engineers
JACKSONVILLE DISTRICT**

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**Final Evaluation of 404(b)(1) Guidelines
 Contained in Vol. 45 No. 249 of the
Federal Register dated 24 December 1980**

**Rio Culebrinas
 Aguada and Aguadilla, Puerto Rico Study
 Section 205 Flood Risk Reduction
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 February 2019**

1. Technical Evaluation Factors

a. Physical and Chemical Characteristics of the Aquatic Ecosystem (230.20-230.25)(Subpart C)

	N/A	Not Significant	Significant
(1) Substrate impacts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) Suspended particulates/turbidity impacts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) Water Quality Control	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) Alteration of current patterns and water circulation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(5) Alteration of normal water fluctuations/hydroperiod	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(6) Alteration of salinity gradients	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The purpose of the project is to reduce flood damages to the southwest portion of Aguadilla and the community of Espinar in Aguada, Puerto Rico.

The Recommended Plan consists of the following construction:

- Two drainage levees with a combined total length of approximately 3.3 kilometers (km) (2.05 miles) and average height of 2.5 meters (8.2 feet) with 3:1 side slopes and levee crest of 3 meters (9.84 feet):
 - *Espinar Levee* – Begins at the southern end of the Espinar community and extends east then north for approximately 1.5 km (0.93 miles) and ends south of the Caño Madre Vieja mouth;
 - *Aguadilla Levee* – Begins near Highway 2 and extends north for approximately 1.8 km (1.12 miles) and ends near Yumet Avenue. The Aguadilla Levee will transect the Caño Madre Vieja.
- Cutoff channel to reconnect the two sections of the Caño Madre Vieja interrupted by the levee. The cutoff channel will measure approximately 60

meters long by 4 meters deep by 43.2 meters wide (196.85 feet long by 3.12 feet deep by 141.73 feet wide);

- Three paved roadway ramps across the levees;
- Drainage components:
 - Interior drainage channels measuring approximately 1 meter deep by 7 meters wide (3.28 feet deep by 22.97 feet wide) constructed adjacent to the protected side of the levees;
 - One, two-way drainage structure near the north end of the Espinar levee;
 - Three, one-way drainage structures along the Aguadilla levee.

b. Biological Characteristics of the Aquatic Ecosystem(230.30-230.32) (Subpart D)

	N/A	Not Significant	Significant
(1) Effect on threatened/endangered species and their habitat	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(2) Effect on the aquatic food web	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) Effect on other wildlife (mammals, birds, reptiles, and amphibians)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

USACE has concluded that the project may affect, but is not likely to adversely affect, the Puerto Rican boa (*Epicrates inornatus*). No USFWS designated critical habitat (DCH) is located within the project footprint. Temporary displacement of wildlife during construction due to noise and/or construction activities may occur; however, these effects are expected to be minor and will cease with the completion of construction.

c. Special Aquatic Site (230.40-230.45) (Subpart E)

	N/A	Not Significant	Significant
(1) Sanctuaries and refuges	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) Wetlands	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(3) Mud flats	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) Vegetated shallows	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(5) Coral reefs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(6) Riffle and pool complexes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The Recommended Plan will result in unavoidable impacts to approximately 10.25 acres of mostly degraded wetlands within the levee right of way (formerly Coloso sugar cane fields). The Corps will mitigate for these unavoidable impacts and has proposed a conceptual plan to create wetlands by excavating 13.35 acres. Since a portion of the excavation would be in existing wetlands to ensure hydrologic connection, the total net creation of wetlands would be 11.69 acres. The final location, size, and configuration of the wetland mitigation areas are subject to change based on additional investigations on the elevation and character of material to be excavated as well as socio-economic considerations. Mitigation

plan refinements will occur during the project's Preconstruction Engineering and Design (PED) phase.

d. Human Use Characteristics (230.50-230.54) (Subpart F)

	N/A	Not Significant	Significant
(1) Effects on municipal and private water supplies	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) Recreational and Commercial fisheries impacts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) Effects on water-related recreation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) Aesthetic impacts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(5) Effects on parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The structures will be incorporated into the aesthetic appearance of the area. The quality of aesthetically pleasing green areas will not be compromised by project results.

2. Evaluation of Dredged or Fill Material (230.60) (Subpart G)

a. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material. **(Check only those appropriate)**

- (1) Physical characteristics
- (2) Hydrography in relation to known or anticipated sources of contaminants
- (3) Results from previous testing of the material in the vicinity of the project
- (4) Known, significant, sources of persistent pesticides from land runoff or percolation
- (5) Spill records for petroleum products or designated (Section 311 of CWA) hazardous substances
- (6) Other public records of significant introduction of contaminants from industries, municipalities or other sources
- (7) Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge
- (8) Other sources (specify)

Construction of the levees, interior drainage facilities, and cutoff channel will require approximately 84,101 cubic meters (110,000 cubic yards) of fill. Approximately 24,466 cubic meters (32,000 cubic yards) would come from the excavation of the cut-off and interior drainage channels, while the rest of the fill

would come from a permitted and approved commercial borrow site. The project footprint has no known hazardous, toxic, and radioactive waste (HTRW) problems (e.g., super fund, state records, etc.). A civil works audit in May 1995 (updated in May 1999) and the HTRW review conducted in the 2004 EA determined HTRW contamination is negligible in the study area due to the predominant land use being agricultural and no known spills, problems, or sites were known to be in the study area. A review of the U.S. Environmental Protection Agency's (USEPA) EnviroMapper in November 2018 confirmed there are no superfund, toxic release, or brownfield sites in the project vicinity.

- b. An evaluation of the appropriate information in 2a above indicated that there is reason to believe the proposed dredged or fill material is not a carrier of contaminants, of that levels of contaminants are substantively similar at extraction and disposal sites and not likely to exceed constraints. The material meets the testing exclusion criteria.

YES NO

3. Disposal Site Delineation (Section 230.11(f))

- a. If applicable, the following factors, as appropriate, have been considered in evaluating the disposal site.
- (1) Depth of water at disposal site
 - (2) Current velocity, direction, and variability at disposal site
 - (3) Degree of turbulence
 - (4) Water volume stratification
 - (5) Discharge vessel speed and direction
 - (6) Rate of discharge
 - (7) Dredged material characteristics (constituents, amount, and type of material, settling velocities)
 - (8) Number of discharges per unit of time
 - (9) Other factors affecting rates and patterns of mixing (specify)

Disposal sites are not a component of the project; therefore, this section is not applicable to this project.

- b. An evaluation of the appropriate factors in 4a above indicates that the disposal site and/or size of mixing zone are acceptable.

YES NO

4. Actions to Minimize Adverse Effects (Section 230.70-230.77)(Subpart H)

All appropriate and practicable steps have been taken, through application of recommendation of Section 230.70-230.77 to ensure minimal adverse effects of the proposed discharge or fill.

YES NO

5. Factual Determination (Section 230.11)

A review of appropriate information as identified in items 2-5 above indicates that there is minimal potential for short or long-term environmental effects of the proposed discharge or fill as related to:

- a. Physical substrate at the disposal or fill site (review sections 2a, 3, 4, & 5)
- b. Water circulation, fluctuation & salinity (review sections 2a, 3, 4, & 5)
- c. Suspended particulates/turbidity (review sections 2a, 3, 4, & 5)
- d. Contaminant availability (review sections 2a, 3, & 4)
- e. Aquatic ecosystem structure and function (review sections 2b, c; 3, & 5)
- f. Disposal or fill site (review sections 2, 4, & 5)
- g. Cumulative impact on the aquatic ecosystem
- h. Secondary impacts on the aquatic ecosystem

6. Review of Compliance (230.10(a)-(d) (Subpart B)

A review of the permit application indicates that:

- a. The discharge or fill represents the least environmentally damaging practicable alternative and if in a special aquatic site, the activity associated with the discharge or fill must have direct access or proximity to, or be located in the aquatic ecosystem to fulfill its basic purpose (if no, see section 2 and information gathered for EA alternative);

YES NO

- b. The activity does not appear to 1) violate applicable state water quality standards or effluent standards prohibited under Section 307 of the CWA; 2) jeopardize the existence of Federally designated marine sanctuary (if no, see section 2b and check responses from resource and water quality certifying agencies);

YES NO

- c. The activity will not cause or contribute to significant degradation of waters of the U.S. including adverse effects on human health, life stages of organisms dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values (if no, see section 2);

YES NO

d. Appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge or fill on the aquatic ecosystem (if no, see section 5);

YES NO

7. Findings

- a. The proposed location of fill or disposal site for discharge of dredged material complies with the Section 404 (b)(1) guidelines
- b. The proposed location of fill or disposal site for discharge of dredged material complies with the Section 404(b)(1) guidelines with the inclusion of the following conditions:

c. The proposed location of fill or disposal site for discharge of dredged material does not comply with the Section 404(b)(1) guidelines for the following reason(s):

- (1) There is a less damaging practicable alternative
- (2) The proposed discharge or fill will result in significant degradation of the aquatic ecosystem
- (3) The proposed discharge or fill does not include all practicable and appropriate measures to minimize potential harm to the aquatic ecosystem