APPENDIX C

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

Environmental Assessment
Rio Culebrinas, Puerto Rico Study

US Army Corps of Engineers
JACKSONVILLE DISTRICT

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Rio Culebrinas, Puerto Rico Study

FINAL EVALUATION OF 404(b)(1) GUIDELINES
JUNE 2019

1. Technical Evaluation Factors

a. Physical and Chemical Characteristics of the Aquatic Ecosystem (40 CFR §§ 230.20-230.25)(Subpart C)

	N/A	Not Significant	Significant
(1) Substrate impacts	☐	☒	☐
(2) Suspended particulates/turbidity impacts	☐	☒	☐
(3) Water Quality Control	☐	☒	☐
(4) Alteration of current patterns and water circulation	☐	☒	☐
(5) Alteration of normal water fluctuations/hydroperiod	☐	☒	☐
(6) Alteration of salinity gradients	☒	☐	☐

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 levees (Aguadilla and Espinar) with a total length of approximately 3.03 km (2.05 miles);
- Interior drainage features consisting of a 1 meter (3.28 feet) deep and 7 meter (22.97 feet) wide drainage channel along the protected side of each levee;
- A two-way drainage structure near the north end of the Espinar Levee; three one-way drainage structures along the Aguadilla Levee;
- A 60-meter (196.85 feet) long cutoff channel for the Caňo Madre Vieja to connect two meanders of the stream where the Aguadilla Levee will interrupt it (4 meters [13.12 feet] deep by 43.2 meters [141.73 feet] wide);
- Three paved roadway ramps across the levees;
- A borrow area located in Aguada;

Net creation of approximately 11 to 12 acres of wetlands for mitigation based on unavoidable impacts to approximately 10 acres of wetlands in the levee right of way.

b. Biological Characteristics of the Aquatic Ecosystem (40 CFR §§ 230.30-230.32) (Subpart D)

	N/A	Not Significant	Significant
(1) Effect on threatened/endangered species and their habitat	☐	☒	☐
(2) Effect on the aquatic food web	☒	☐	☐
(3) Effect on other wildlife (mammals, birds, reptiles, and amphibians)	☐	☒	☐

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 (40 CFR §§ 230.40-230.45) (Subpart E)

	N/A	Not Significant	Significant
(1) Sanctuaries and refuges	☒	☐	☐
(2) Wetlands	☐	☒	☐
(3) Mud flats	☒	☐	☐
(4) Vegetated shallows	☒	☐	☐
(5) Coral reefs	☒	☐	☐
(6) Riffle and pool complexes	☒	☐	☐

On May 21, 2019, the Corps, the Puerto Rico Department of Natural and Environmental Resources (DNER), Puerto Rico Planning Board (PRPB), and the mayors of Aguadilla and Aguada discussed the possible impacts of the project to the proposed Espinar Swamp Reserve. The project's Environmental Assessment (EA) considers concerns regarding the effects to the existing wetlands and the proposed reserve. The Recommended Plan is expected to result in unavoidable impacts to approximately 10 acres of wetlands within the levee right of way. The 2015 Detailed Project Report (DPR) Draft Addendum and EA proposed a conceptual mitigation plan which would create approximately 13 acres of wetlands. (A portion of the plan included excavation in existing wetlands to ensure hydrologic connection; therefore, the total net creation would be approximately 11 – 12 acres of wetlands.) The Corps prepared a 2020 proposed mitigation plan (included with the 2020 EA as Appendix D), which builds upon the 2015 DPR Draft Addendum's conceptual mitigation plan. The Corps will conduct a wetland habitat functional analysis during the project's Preconstruction Engineering Design (PED) phase to verify that the functional equivalent is still valid and ensure the appropriate performance measures are in place. Detailed calculations and exact acreages are not expected to change by more than 50% from the project's conceptual mitigation plan proposed in the 2015 DPR Draft Addendum. The final mitigation plan will be coordinated with the U.S. Fish and Wildlife Service (USFWS) as well as the Puerto

Rico Department of Natural and Environmental Resources (DNER). The plan will be developed by the Corps and provided to partner agencies for review and comment. The detailed mitigation plan will be finalized during the design phase when the project is reviewed on Biddability, Constructability, Operability, Environmental and Sustainability (BCOES) characteristics.

d. Human Use Characteristics (40 CFR §§ 230.50-230.54) (Subpart F)

	N/A	Not Significant	Significant
(1) Effects on municipal and private water supplies	☒	☐	☐
(2) Recreational and Commercial fisheries impacts	☒	☐	☐
(3) Effects on water-related recreation	☒	☐	☐
(4) Aesthetic impacts	☐	☒	☐
(5) Effects on parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves	☒	☐	☐

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 (40 CFR § 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 (40 CFR § 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 (40 CFR §§ 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 (40 CFR § 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 (40 CFR § 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