

**PUERTO RICO GOVERNMENT
PUERTO RICO PLANNING BOARD**

PUBLIC NOTICE

**Application for Federal Consistency Certification with the
P.R. Coastal Zone Management Program
CZ-2021-1209-041**

**Puerto Rico Coastal Study
Draft Integrated Feasibility Report and Environmental Assessment**

According to sections 306(d) 14 and 307(3)(A) of the Coastal Zone Management Act of 1972, as amended, and applicable Federal Consistency Regulations at 15 CFR Part 930, the Puerto Rico Planning Board informs that the following project is under Federal Consistency review with the P.R. Coastal Zone Management Program:

Applicant: U.S. Army Corps of Engineers (USACE)

Description and purpose: Hurricanes and storms cause significant damage to property and infrastructure on the coast, due to the attack of waves, floods and erosion. Hurricanes Irma and Maria and Winter Storm Riley were extraordinary events that caused significant damage to properties and critical infrastructure located in the coast and beaches of Puerto Rico. In addition, climate change and expected sea level rise will exacerbate the vulnerability of Puerto Rico coasts. In response to this situation, the United States Army Corps of Engineers (USACE) carried out a study using funds available through the “Bipartisan Budget Act 2018” (BBA 2018), to evaluate possible alternatives to manage vulnerabilities and incidental opportunities that may exist for habitat maintenance and recreation in the coasts of Puerto Rico. As part of the Disaster Declaration issued by the President of the United States after the passage of Hurricanes Irma and Maria, the United States congress assigned a minimum allocation of \$ 75,000,000 to the USACE to carry out studies aimed at reducing the damage caused by these storms in the impacted states and island areas of the nation. In addition, the congress allocated 1.5 billion dollars for the construction of the projects recommended through the feasibility studies carried out by the USACE. The main purpose of the Puerto Rico Coastal Study is to determine if there is the economic justification and Federal interest to develop a plan with alternatives to reduce damage to property and infrastructure in certain coastal areas of Puerto Rico. In order to qualify for these funds, the projects or proposed alternatives must demonstrate economic viability (the Benefit / Cost ratio must be greater than or equal to 1), viability from an engineering point of view, environmental viability and social viability.

Geographic Area Covered by the Study: Initially, the study area included the coasts of San Juan, Carolina, Vega Baja, Arecibo, Aguadilla, Aguada, Rincón, Añasco, Mayaguez, Cabo Rojo, Loiza, Luquillo, and Humacao. After conducting the preliminary evaluations, the USACE determined that the areas that meet the necessary criteria to develop a plan with project alternatives are the following:

Municipality	Coastal Sector	Limits
San Juan	Condado Pocket Beach	From Ventana Al Mar park to Cervantes street.
	Punta Piedrita Headland	Beach area from Cervantes Street to “Parque del Indio”.
	Ocean Park Pocket Beach	From Parque del Indio to the east side of the recreative area of Park Boulevard Residential Building.
	Punta Las Marias Headland	From Park Boulevard building to Punta Las Marías.
Rincón	Rincon B	From the river mouth of Quebrada Los Ramos in Corcega Beach to Sunfish Beachfront Building.

2 | Public Notice

Application for Federal Consistency Certificate
CZ-2021-1209-041



Evaluation of Alternatives for the Tentatively Selected Plan (TSP): As part of the Feasibility Study, the USACE evaluated possible structural and non-structural alternatives to handle vulnerabilities within the selected reaches. The USACE evaluated different alternatives in terms of the way in which each one meets the planning objectives established within a horizon of fifty (50) years. The primary objective is to manage the risk of damage from wave attack, flooding and erosion caused by storms in coastal areas, and the secondary objective is to maintain the quality of the environment and recreation in these areas.

The criteria used to evaluate and select the TSP alternatives were the following:

- 1- Meet the planning objectives
 - Manage the risk of damage from wave attack, flooding and erosion.
 - Maintain the recreational use of beaches and coasts.
 - Maintain environmental quality in coastal areas.
- 2- The execution of the alternatives must not violate Federal laws.
- 3- Economic, environmental and social criteria.
 - Benefit / cost analysis.
 - Value of the ecosystem, facilities, public services, aesthetics, natural resources, water and air quality, cultural and historical preservation and other aspects covered by the Federal Environmental Policy Act (NEPA).
 - Safety and preservation of life, health, cohesion and growth of the community, property values and taxes, business travel, public facilities and other matters related to the accessibility or availability of recreational activities.
 - Impact on the economy, employment, income and sales volume at the regional level.

The USACE carried out the evaluation comparing the scenario of damages expected in the future without the projects (FWOP) with the economic costs and benefits that the projects or alternatives will have. However, it is worth mentioning that the evaluation carried out at this feasibility study stage does not yet contain all the details, so the projects or alternatives included within the TSP do not constitute a final design, these are conceptual designs. The alternatives selected for the TSP are the following:

Tentatively Selected Plan

Area	Alternative and Description	Future Without Project in Present Value (FWOP)	Estimate of Project Cost in Present Value	Benefit/Cost Ratio	Preferred or Selected Alternative
Condado Pocket Beach	Alt-3c. "Beach Nourishment": includes initial construction of a beach fill of 110,000 cubic yards and two future renourishments of 51,000 cubic yards each. The proposed volume is based on a 50' berm or equivalent volume.	\$15,512,077	26,967,000	Less than 1	X
	Alt-4. Breakwaters: An initial configuration is based on 2 detached breakwaters. Further analysis of this alternative will determine the optimized dimensions and configuration of the structures.		23,399,000	Less than 1	
Punta Piedrita Headland	Alt-2. Revetment: A stone revetment of 14 ft-PRVD02 crest elevation on the western side, contiguous to a revetment of 11 ft-PRVD02 crest elevation on the eastern side. This will protect the entire headland, reducing erosion, flood and wave risk.	\$48,305,756	\$21,334,000	1.11	X
Ocean Park Pocket Beach	Alt- 3a "Beach Nourishment": Beach nourishment with a 100' berm. It requires an initial deposit of 800,000 cubic yards of sand and 2 renourishments of 368,000 yardas cúbicas.	\$131,655,125	\$122,000,000	More than 1	
	Alt-3b. "Beach Nourishment": Beach nourishment with a 50' berm. It requires an initial deposit of 350,000 cubic yards of sand and 2 renourishments of 161,000 cubic yards.		\$69,436,601	More than 1	
	Alt-4. Breakwaters: An initial configuration is based on 8 detached breakwaters. Further analysis of this alternative will determine the optimized dimensions and configuration of the structures.		\$56,056,736	More than 1	
	Alt-5a. "Beach Nourishment" + Breakwaters: A set of 8 breakwaters is initially proposed to reduce wave energy; combined with beach nourishment of 350,000 cubic yards, a 50' berm and one future renourishment of 161,000 cubic yards.		\$109,081,603	More than 1	X
Punta Las Marias Headland	Alt-2 Revetment: A stone revetment of 11 ft-PRVD02 crest elevation on the western side of this headland will be considered to reduce erosion, flood and wave risk.	\$16,225,155	\$13,100,612	1.07	X
Rincon B	Alt-2 Revetment: A stone revetment of 11 ft-PRVD02 crest elevation on the entire reach will be considered to reduce erosion, flood and wave risk.	\$33,621,000	\$27,900,109	1.12	X
	Alt-5 "Beach Nourishment + Breakwaters: A set of 20 breakwaters is initially proposed to reduce wave energy; combined with beach nourishment to address flooding and erosion. The beach nourishment includes initial construction of a beach fill (120,000 cy) and four future renourishment of 82,000 cy each. This volume was based on a 25' berm or equivalent volume, but the template optimizations will be finalized during FWP phase.		\$89,255,022	Less than 1	

4 | Public Notice

**Application for Federal Consistency Certificate
CZ-2021-1209-041**

According to the completed evaluation, the alternatives considered for the Condado Pocket Beach area do not show economic justification. However, some of the alternatives can be refined and have the opportunity to be economically justified once the modeling is completed and the damages estimated with all the details. The areas of Punta Piedrita and Punta las Marias have been impacted by hard structures constructed by landowners in the past, eliminating the dry beach that provides habitat for wildlife, so revetments are considered the best alternative. In the Ocean Park area, most of the evaluated alternatives demonstrate economic justification, so there is more opportunity to select the one that offers the greatest benefits and best public acceptance. In the case of the Rincón B area, the analysis indicated that construction of a revetment is the only alternative with economic justification. This area has been impacted by hard structures constructed by landowners in the past, causing the elimination of dry beach. Although alternative 5 does not demonstrate economic justification at this time, the USACE will continue to consider it in future analyzes.

Environmental Impacts: the "Draft Integrated Feasibility Report and Environmental Assessment" includes a preliminary evaluation of the possible environmental impacts that the recommended projects within the Tentatively Selected Plan (TSP) may have. Within the completed analysis, the USACE considered potential impacts on water quality, shoreline, seagrass, hard bottom habitat, corals, essential fish habitat, protected and endangered species, birds, invasive species, quality of the air and noise among others. The recommended projects will require a Water Quality Certificate according to section 401 of the Federal Clean Water Act, which will be processed in the next phases of the project. The USACE determined that the projects would have no direct impact on seagrasses (SAV). Impacts on SAV will be indirect due to the increase in water turbidity during the construction phase. On the other hand, the USACE estimated that there might be a total impact of 14.78 acres of hard bottom habitat, considering all the project reaches. Regarding protected and endangered species, the USACE made the following preliminary determination:

2020 PUERTO RICO COASTAL CSRMS STUDY ESA TABLE			
Common Name	Scientific Name	Status	Determination
Marine Mammals			
Antillean manatee	<i>Trichechus manatus</i>	T	MANLAA
Sea Turtles			
Loggerhead sea turtle NW Atlantic DPS	<i>Caretta caretta</i>	T	MANLAA
Hawksbill sea turtle	<i>Eretmochelys imbricata</i>	E	MANLAA
Leatherback sea turtle	<i>Dermochelys coriacea</i>	E	MANLAA
Green sea turtle South Atlantic DPS	<i>Chelonia mydas</i>	T	MANLAA
Fish			
Nassau grouper	<i>Epinephelus striatus</i>	T	NE
Scalloped hammerhead shark	<i>Sphyrna lewini</i>	E	NE
Giant manta ray	<i>Manta birostris</i>	T	NE
Invertebrates			
Elkhorn coral	<i>Acropora palmata</i>	T	MANLAA
Staghorn coral	<i>Acropora cervicornis</i>	T	MANLAA
<i>Acroporid Coral Designated Critical Habitat</i>			NLAM
Pillar coral	<i>Dendrogyra cylindrus</i>	T	MANLAA
Lobed star coral	<i>Orbicella annularis</i>	T	MANLAA
Mountainous star coral	<i>Orbicella faveolata</i>	T	MANLAA
Boulder star coral	<i>Orbicella franksi</i>	T	MANLAA
Rough cactus coral	<i>Mycetophyllia ferox</i>	T	MANLAA

T: Threatened
E: Endangered

MANLAA: May Affect but is not likely to Adversely Affect
NLAM: Not Likely to Adversely Modify
NE: No Effect

The USACE will conduct a more detailed evaluation and complete the required consultations with the Fish & Wildlife Service and the National Marine Fisheries Service during the next phases of the project. The required mitigation will be determined once the final design of the structures or projects is established.

Climate Change and Sea Level Rise: According to provisions at USACE Letter 1165-2-211, this agency took into consideration three (3) scenarios to estimate the effects of sea level rise within of the study areas. Projections for sea level rise (SLR) are based on a start date of 1992, which corresponds to the midpoint of the 1983 - 2001 National Tidal Datum. Based on this, the USACE estimated that expected sea level rise scenarios for the next 50 years within the project areas will be the following:

5 | Public Notice

Application for Federal Consistency Certificate
CZ-2021-1209-041

Study Reaches	Scenarios		
	Low	Intermediate	High
San Juan	0.57 feet	1.21 feet	3.25 feet
Rincón	0.51 feet	1.15 feet	3.19 feet

In this study, the USACE considered the intermediate scenario to estimate expected future damages without projects (FWOP). However, in this phase, net benefits of proposed alternatives have not estimated considering sea level rise.

Impact on cultural and Historic Resources: at this phase of the feasibility study, it is not possible to carry out a complete evaluation of the possible impacts on cultural and historical resources, as the proposed alternatives are only conceptual designs. The USACE is in the process of consulting with the State Historic Preservation Office and the Puerto Rican Culture Institute to establish a Programmatic Agreement (PA) to comply with section 106 of the National Historic Preservation Act (NHPA).

The documents related to this application will be available for public review and comments from the notification date of this in notice, through the Puerto Rico Planning Board Web Page at www.jp.gov, at "Certificación de Compatibilidad Federal". Documents can be accessed through the following link: <https://jp.pr.gov/Planificaci%C3%B3n-F%C3%ADsica/Compatibilidad-Federal-con-PMZCPR>.

Comments or recommendations about this project must be submitted within a period of **fifteen (15) days from this public notice notification**. Any comment or information in relation to the application at reference must be submitted in writing by e-mail at: comentariosjp@jp.pr.gov

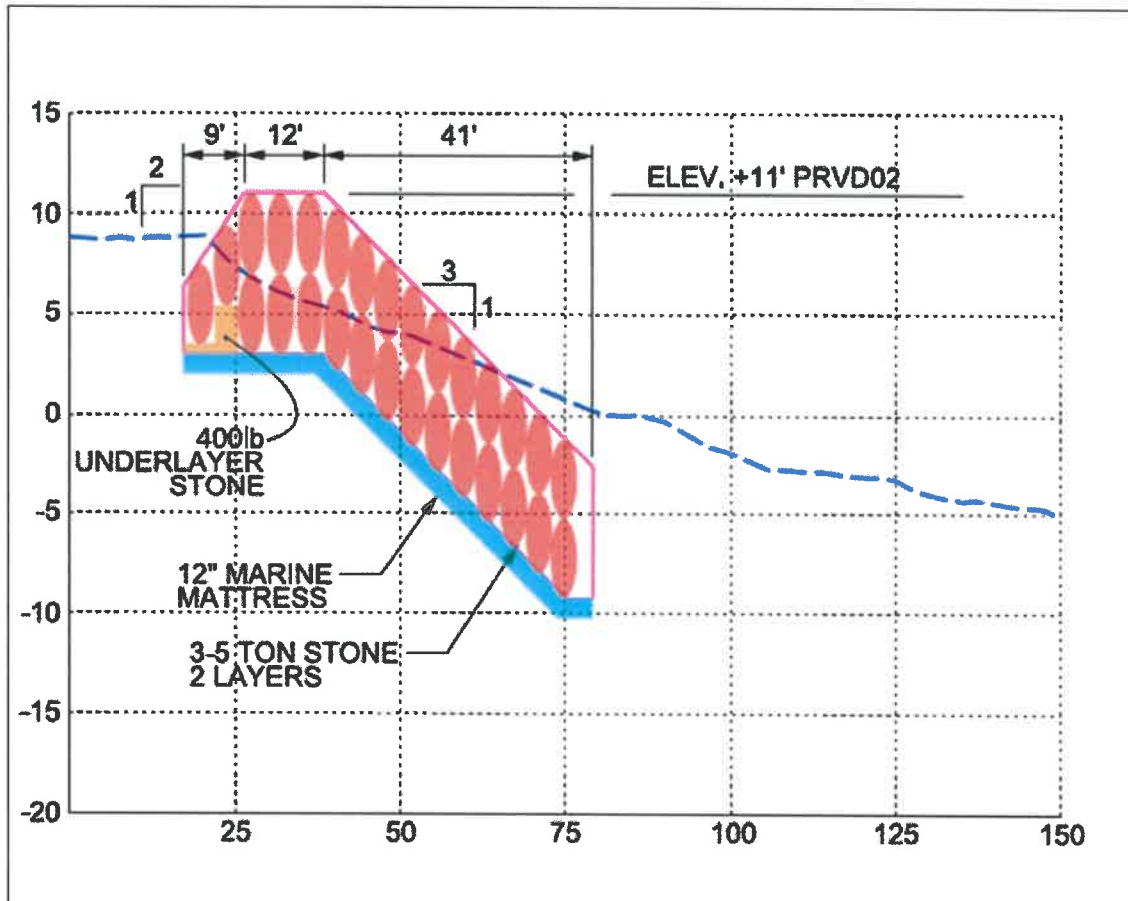
Please, refer to the application number in your comment letter. For any question or orientation in relation to this case, you may contact Rose A. Ortiz through e-mail: ortiz_r@jp.pr.gov

I Certify and Notify today: FEB 05 2021

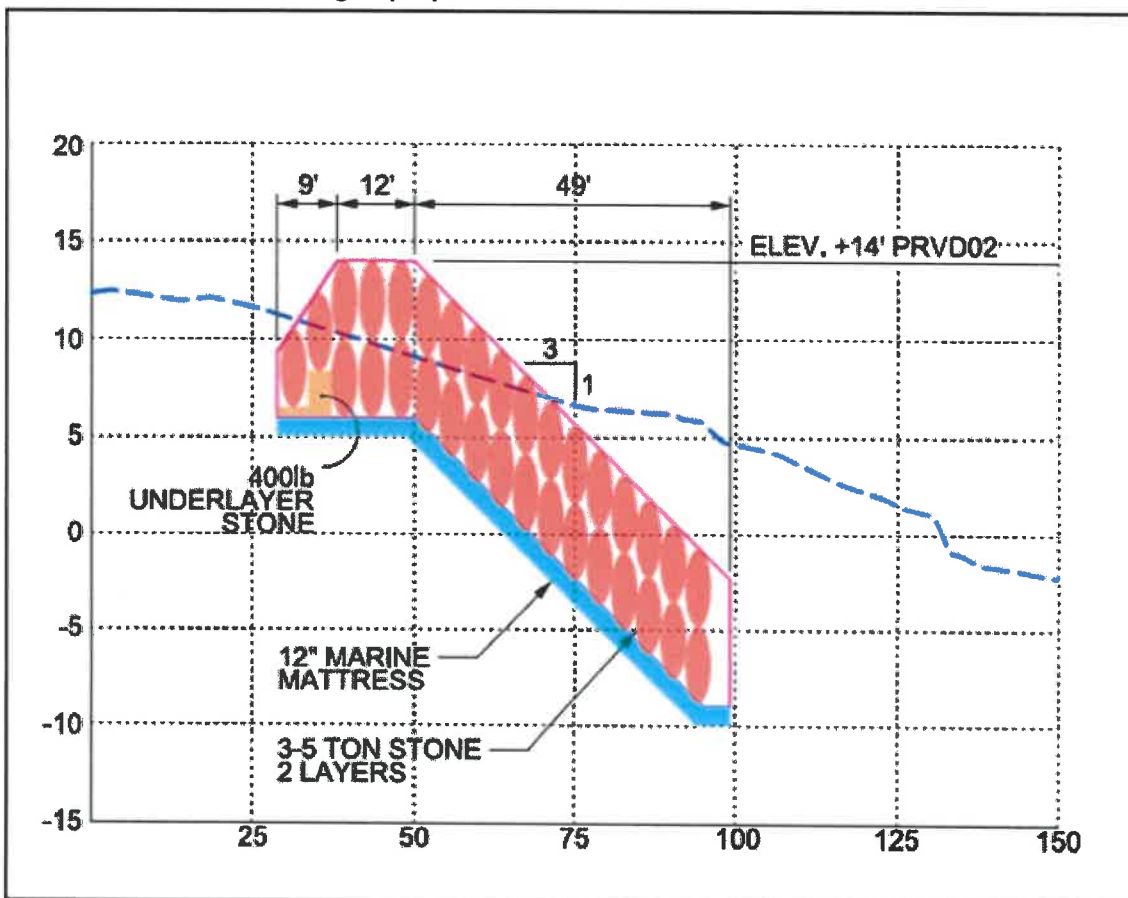

Loida Soto Nogueras
Secretary

Conceptual Design of the Proposed Alternatives

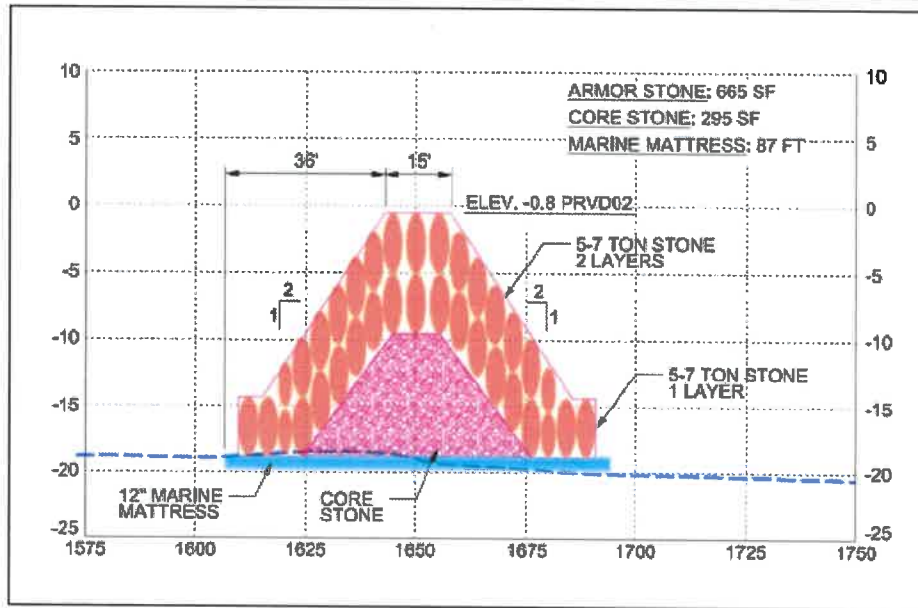
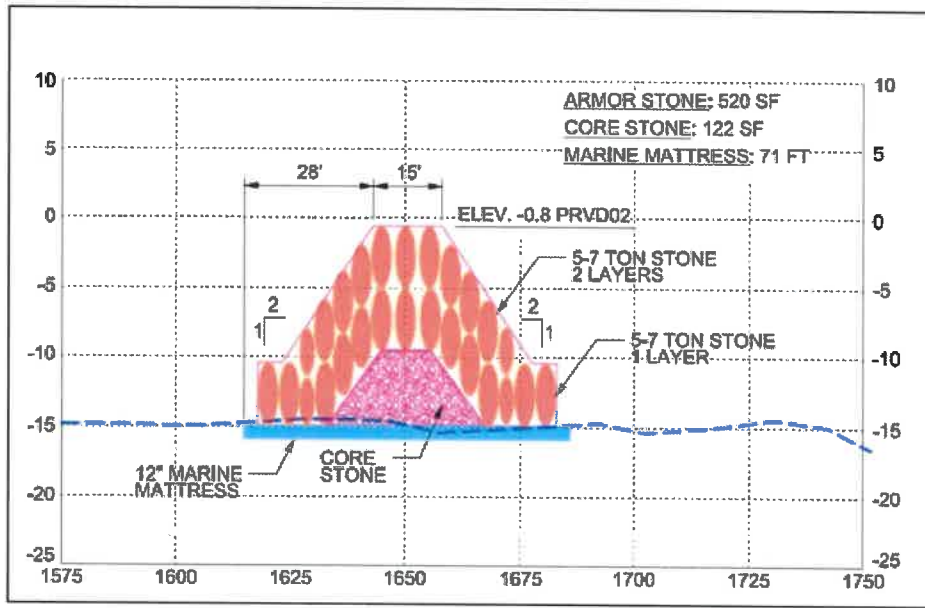
Cross section drawing of proposed revetments for the east side of Punta Piedrita and Punta Las Marias Headlands



Cross section drawing of proposed revetments for the west side of Punta Piedrita



Cross sections of the Ocean Park Breakwaters



Cross section of the proposed Rincon revetment

