



San Juan Metro Area (Back Bay) Coastal Storm Risk Management Study



Environmental Considerations

National Environmental Policy Act (NEPA)

NEPA is a Federal law enacted in 1969. As required by NEPA, the Corps will evaluate potential environmental effects of the array of alternatives and recommended plan to the human environment.

Cultural Resources

The Corps will conduct archeological analysis to assess any potential cultural resources within the reduced study scope.

Analysis to Identify Species of Concern & Sensitive Habitats

The Corps will conduct: 1) Coordination with applicable environmental regulatory agencies; 2) Avoid and minimize effects to the maximum extent practicable.



The San Juan Metro Area Coastal Storm Risk Management Study is authorized under Section 204 of the Flood Control Act of 1970, Public Law 91-611, and funding for the study was appropriated as part of the Bipartisan Budget Act of 2018 (PL 115-123). The purpose of the San Juan Metro (back bay) study is to determine if there is Federal interest in a recommended plan to reduce damages to infrastructure as a result of flooding from storm surge, tide and waves (rather than inland rainfall and stormwater runoff) during coastal storms and hurricanes along the back bay areas in the municipality of San Juan and adjacent communities. Corps feasibility studies under this authorization are completed in 3 years and with \$3M or less.



Planning & Engineering

Once problems, opportunities and objectives are refined within the study area, an array of alternatives will be assessed and iteratively modeled in the Corps certified model to determine the alternative which best addresses the primary study objective to reduce coastal storm damages. Alternatives could include, but are not limited to, combinations of the following types of measures.

STRUCTURAL	NON-STRUCTURAL	NATURAL AND NATURE-BASED (NNBF)
<ul style="list-style-type: none"> Floodwalls/Seawalls Levees Storm surge gates/Tide gates Pumps Backflow preventers 	<ul style="list-style-type: none"> Relocation of infrastructure Elevation of critical roads and infrastructure Flood proofing (wet/dry) Acquisition 	<ul style="list-style-type: none"> Greenways Mangrove Fringe Living Shoreline



PR Coastal Study Area

San Juan Metro (Back Bay) Area Study Area

Economics

COASTAL STORM RISK MANAGEMENT (CSRM) KEY FORMULAS

Plans recommending Federal action should represent an alternative that reasonably maximizes net benefits consistent with protecting the environment

$$\frac{\text{BENEFITS}}{\text{COSTS}} > 1$$

In addition, plans must have a positive benefit to cost ratio.

BENEFITS

Primary: Storm damage reduction

COSTS

- Cost of alternative over a 50 year period of Federal participation
- Associated costs

$$\text{CSRM BENEFITS} = \frac{\text{ESTIMATED \$ DAMAGES WITHOUT PROJECT}}{\text{ESTIMATED \$ DAMAGES WITH PROJECT}}$$

ESTIMATED STUDY SCHEDULE



*Contingent on authorization and appropriations