

## Basins Wide Initiatives for Improved Coastal Resilience Subject Matter Expert Exchange

November 13-15, 2019

**OVERVIEW:** In this workshop, participants will receive hands on training that highlights both conventional, engineered flood prevention structures as well as nature-based, environmentally sensitive designs to manage and mitigate flood risk. Focus will be on discussing solutions to Puerto Rico coastal hazards that can help prepare for and adapt to ongoing and future changes while strengthening long-term coastal resilience. Participants will incorporate the latest policies, regulations, and best management practices (BMPs) to implement comprehensive stormwater management strategies to help create a sustainable, resilient, and enduring watershed level approach to flood reduction.

REGISTER HERE!

<https://forms.gle/oQY3z8YaZ8M9Fh759>

Day 1	
Basin Wide Coastal Resilience Opportunities	
8:30–9:00 AM	Arrival and refreshments
9:00–10:00 AM Ernesto Díaz Ismael Pagán Ricardo López	<p><b>Introduction – Puerto Rico Risks and Opportunities</b></p> <p><b>Current Climate and Ocean Condition, Trends and Projections:</b> A Blueprint for the Next Generation of Puerto Rico's Infrastructure</p> <p><b>Uniqueness of Puerto Rico Hydrology:</b> Topography, Rainfall-Runoff, Riverine Flash Floods, Urban Development, Coastal Risks, Sediment Loads</p> <p>Green Infrastructure, Low Impact Development, Nature and Natural Based Features</p> <p><b>Consideration for Coastal Communities Key Vulnerabilities:</b> Sea Level Rise, Coastal Flooding, Inland Flooding, Erosion/Sedimentation, and Debris.</p>
10:00-10:15 AM	<b>BREAK</b>
10:15-12:00 Rumanda Young Carlos E. Ruiz	<p>Puerto Rico Context of GI-LID, NNBF</p> <p><b>Integration of Nature Based Solutions:</b> Wetlands, Farm ponds, Stormwater Detention Basins, Terraces, Sediment Detention Basins, Floodplain Restoration, Channel Bank Stabilization, Buffer Strips, Saturated Buffers, Bioreactors and Scalable Low Impact Development</p> <p><b>Lessons learned:</b> planning, design, construction, inspection, operation and management</p> <p><b>Green infrastructure myth busting:</b> Dealing with site constraints, Cost, Utilities and Performance</p>
12:00-1:00 PM	<b>LUNCH</b>
1:00–2:30PM Todd Bridges Jeff King	<p>Engineering with Nature – NNBF</p> <p>Case Studies</p>
2:30 – 2:45 pm	<b>BREAK</b>
2:45–4:45 PM Milán Mora Alberto Gonzales	<p>USACE Jacksonville District Perspectives</p> <p><b>Projects:</b> Río Guayanilla, Río Guanajibo, Río Portugués, Río Bucaná, and Río Puerto Nuevo</p>
4:45–5:00 PM	Q&A / Adjournment

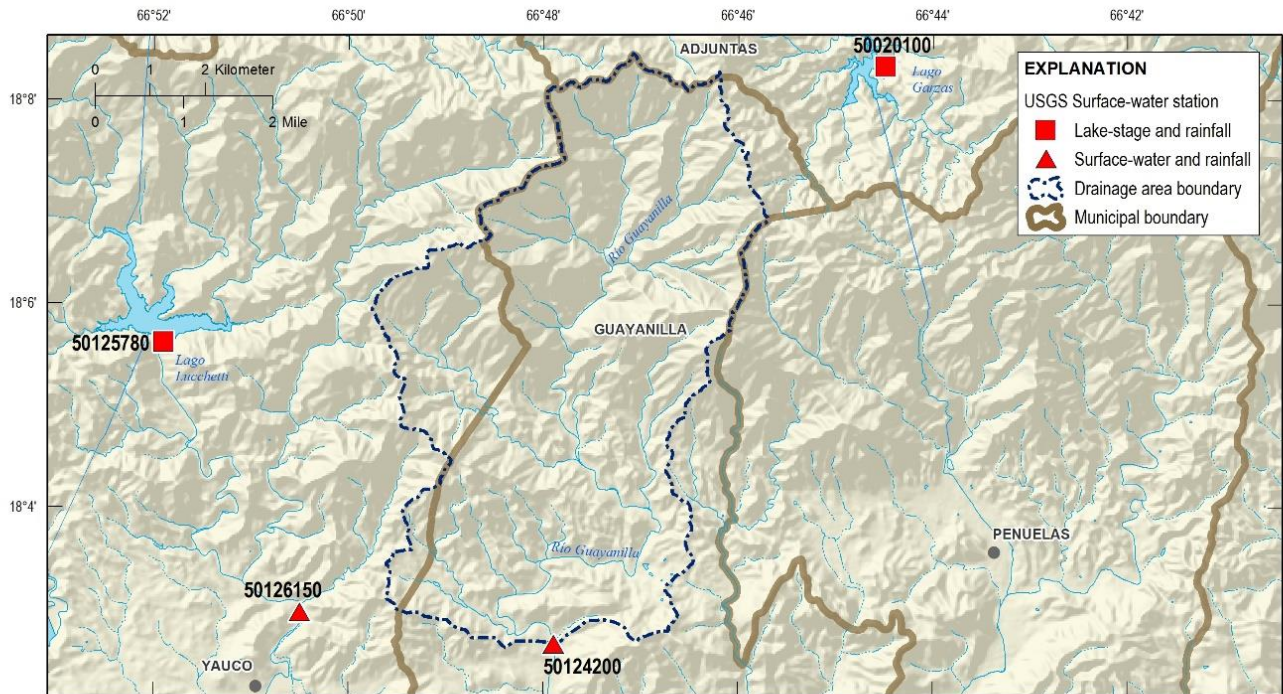
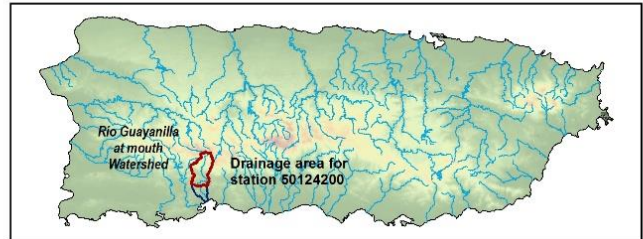


<b>Day 2</b>	
<b>Basin Wide Coastal Resilience Opportunities</b>	
8:30–9:00AM	Arrival and refreshments
9:00–9:05AM	Introduction and housekeeping
9:05–9:15AM	Recap of Day 1
9:15–10:00AM Eric Harmsen	Additional Case Studies: Research Needs in Basin Wide Flood Forecasting
<b>10:00 – 10:20 AM</b>	<b>BREAK</b>
10:20AM–12:00PM	<b>Group think:</b> Each watershed will identify eligible subwatersheds to construct and implement built projects, both conventional hard engineered and soft engineered solutions. <b>Topics:</b> Determine Applicability, Discuss Options, and Discuss Policy Issues
<b>12:00 – 1:00 PM</b>	<b>LUNCH</b>
1:00–2:30PM	Group think continued.
<b>2:30 – 2:45 PM</b>	<b>BREAK</b>
2:45–3:30PM	Group presentations.
3:30–4:00PM	Translating design to construction and O&M
4:00–4:30PM	Q&A / Adjournment

<b>Day 3</b>	
<b>Basin Wide Coastal Resilience Opportunities</b>	
8:30–9:00AM	Arrival and refreshments
9:00-12:00PM	Site Visit to Watershed; Río Guayanilla
12:00PM	Q&A / Adjournment



**50124200 - RIO GUAYANILLA  
NEAR GUAYANILLA, PR  
Drainage area of 18.8 square miles**



Base from USGS digital data  
Lambert conformal conic projection Puerto Rico Datum  
Map prepared by the US Geological Survey

*Provisional subject to revision*

**Sponsored by University of Puerto Rico – Mayagüez DHS Coastal Resilience Center of Excellence**

*Presented by the United States Army Corps of Engineers (USACE) Engineer Research & Development Center, in partnership with the Water Operations Technical Support (WOTS) Program*