

# Natural Infrastructure: A Smart Investment



**CATERPILLAR<sup>®</sup>** **AECOM**



US Army Corps  
of Engineers<sup>®</sup>



**EWN<sup>®</sup>**



The Nature  
Conservancy



# Mid-Barataria Sediment Diversion Project

- Decades of coastal development, including levee construction, have “starved” the Lower Mississippi Delta of its natural sediment load.
- Resulted in dramatically reduced sediment transport to coastal areas, exacerbating continuing land loss also due to land subsidence, sea level rise and extreme weather events.
- Land loss in the Delta continues at the equivalent of one football field per 100 minutes.
- Project will slow land loss by capturing up to 15% of the approx. 200 million tons of sediment otherwise “lost” to the deep Gulf waters.



**Michael J. Donahue, Ph.D., Vice President, AECOM**

# International “Changing Course” Design Competition

- Dozens of teams worldwide competed to design a sustainable, 100 year vision for the Lower Mississippi Delta.
- Sea level rise, land subsidence and extreme weather events have resulted in dramatic, continued land loss.
- Each of three winning teams (one included AECOM) independently identified natural infrastructure as a key element in optimizing the economy, ecology and quality of life future of the Lower Mississippi Delta and its people.



**Michael J. Donahue, Ph.D., Vice President, AECOM**

# Texas Coastal Resiliency Master Plan

- Among the nation's most ambitious comprehensive master plans, addressing approximately 400 miles of coast and 3,300 miles of bays and estuaries.
- Features dozens of recommended "Tier One" projects to address natural and human-induced coastal impacts.
- Strong emphasis on natural as well as conventional infrastructure projects to enhance coastal resiliency while restoring and protecting natural and built assets.



**Michael J. Donahue, Ph.D., Vice President, AECOM**

# Jupiter Island Shoreline Restoration

- A 1500' reach of undeveloped shoreline along Florida's Indian River with severe shoreline erosion problems due to dredging, wave action, storms and recreational use.
- Designated as the first "Outstanding Natural Area" east of the Mississippi River.
- Partnership with the Bureau of Land Management to design a natural shoreline using ecological restoration techniques.



# Transmitter Park

- Highly urbanized site in Brooklyn, NY; former location of a radio station and ferry terminal.
- Highly eroded shoreline addressed via rip rap, natural vegetation/bio-filtration and sand filters to treat stormwater.
- Resolved shoreline erosion, brownfield contamination, stormwater runoff and water quality issues, while addressing public access/ parkland needs.



Michael J. Donahue, Ph.D., Vice President, AECOM

# Brooklyn Bridge Park

- Design of an 80 acre park along 1.3 miles of shoreline that has been historically underutilized and without public access.
- Natural design (i.e., “living shoreline”) features providing for enhanced shoreline and shallow water habitat.
- Multi-objective design includes floating walkways, connecting piers, recreational harbor, active and passive recreational areas, and extensive public access.



# Greenpoint Monitor Museum

- Assessed environmentally-beneficial alternatives for shoreline stabilization/protection and related flood control along the Brooklyn, NY waterfront.
- Component of the Museum's Environmental Master Plan.
- Consideration of natural infrastructure alternatives such as gentle slopes, marsh creation, re-vegetation, vegetated buffers, live staking, contour wattling, brush layering, brush matting and erosion control matting.



**Michael J. Donahue, Ph.D., Vice President, AECOM**