Nature-Based Shoreline Restoration Techniques
Chris Christie: Remember, Resolve, Rebuild

- Forbes 9/17/2013
“Striking a tone of defiance, Mayor Michael Bloomberg said today that New York City will not retreat from its coastline despite the threat of rising sea levels and the possibility of storms more catastrophic than Hurricane Sandy.

On the contrary, he argued, the city should not only continue to build along the waterfront but build better.”
Bite me Sandy! We are Jersey strong!
Ash Wednesday Storm
March 7, 1962
Kitty Hawk, N.C.

Avalon NJ | dune living
Union Beach NJ | no storm barrier, no house
Dune Living | sense of place
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Fresh Kills | old landfill
Freshkills Park | living shoreline construction
Freshkills Park | coastal upland – first growing season
Great Kills Harbor | urban shoreline restoration
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MODELING SCENARIO A
- Combine maximized shoreline intervention (shoreline elevation, revetment, living edges, dry buffer, wet buffer) and minimized in-water intervention for wave reduction and erosion control (breakwater types, wave screen, submerged vegetation)

MODELING SCENARIO B
- Combine minimized shoreline intervention (shoreline elevation, revetment, living edges, dry buffer, wet buffer) and maximized in-water intervention for wave reduction and erosion control (breakwater types, wave wall)

Reduce Flooding | using natural habitats
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Eelgrass
Learned what works and doesn’t work
Able to determine best planting methods
Water quality not limiting – bioturbation and hydrodynamics

Oysters
Reef Ball pilot projects successful
Future oyster sites in NY harbor require:
  Lower energy
  Greater depth
  Structural protection

Jamaica Bay NY | aquatic habitats
Lessons Learned | using natural systems
Lessons Learned | dunes as storm barrier

Brant Beach, NJ

Bay Head, NJ
Lessons Learned | wetlands as risk reduction
Lessons Learned | creating resiliency