

Review: Concepts of Resilience for Coastal Systems

Prepare Anticipate
Resist Withstand
Recover Bounce Back
Adapt Evolve

Engineering
Environmental
Community

Resilience

Resilience: the ability of a **system** to **Prepare for, Resist, Recover, and Adapt** to achieve functional performance under the stress of disturbances **through time**.

Study	Definition
National Academy of Sciences (2012)	"Resilience is the ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events."
Presidential Executive Order on Climate Change (2013)	"resilience means the ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions."

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Risk, Vulnerability, Sustainability, and Resilience

Event Risk of any one disturbance

Vulnerability = how much functionality is lost for a given disturbance

Resilience

3

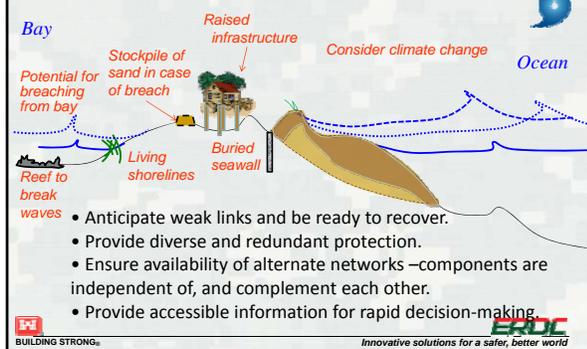
What is a resilient coastal system?

Hypothetical Example: Galveston, TX

- Natural (“green”, including sediment) measures
- Nature-based (constructed “green”) measures
- Non-structural measures
- “Gray” (traditional structural) measures



Best Practices & Multiple Lines of Defense



Questions?