



Sustainable and Resilient Regionally Integrated Infrastructure (SRRI) **ERDC**

USACE Galveston District



- 50,000 square mile district boundary
- 28 ports handling 500+ M tons of commerce annually
- 1,000+ miles of channels
 - 750 miles shallow draft
 - 270 miles of deep draft
- 367 miles of Gulf coastline
- 30-40 M cubic yards/yr material dredged
- 16 Congressional districts
- 48 Texas counties
- 18 Coastal counties - bays / estuaries
- 9 watersheds
- 2 Louisiana parishes

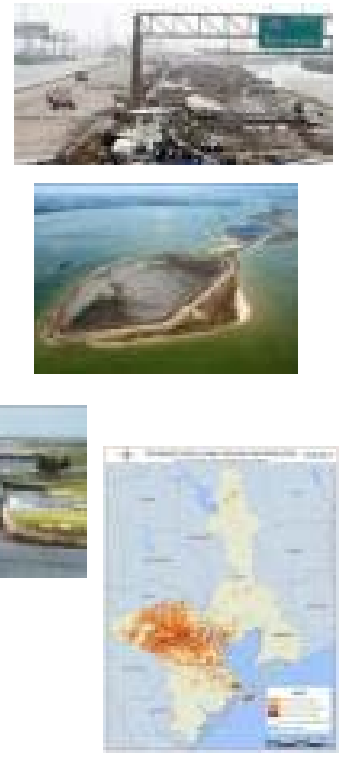


- Navigation
- Flood Risk Management
- Regulatory
- Ecosystem Restoration
- Emergency Management
- Interagency & International Support

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Contributors Civil Works Program Risks and Uncertainties

- Stressors:**
- Extreme storm water levels (rivers, coast)
 - Dynamics of coastal shorelines, islands, wetlands, sediments, and debris
 - Drought effects on water availability and quality
 - Aging, outmoded, and/or exhausted infrastructure & equipment (e.g., locks, PAs, dredges)
 - Program funding levels
- Drivers:**
- Relative sea level change
 - Changing legislation/policies
 - Resource availability (e.g., energy, land)
 - Development patterns/rates and modifications to natural systems



Delivering Navigation Program Value to the Nation on America's Energy Coast

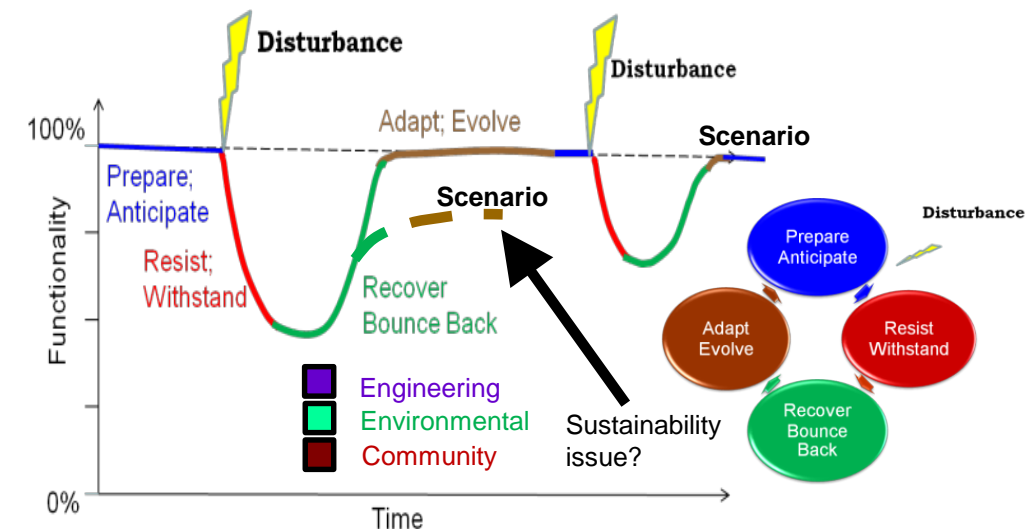


- Gulf Intracoastal Waterway (GIWW)
 - 3rd busiest US inland waterway
 - Transports 79.2 M tons/yr in TX
- 40% of US petrochemical industry
- 25% US petroleum-refining capacity

LEADING U.S. PORTS (2014 Tonnage)

Houston (#2 - 234.3 million tons) #1 Foreign Tonnage & #2 Total Tonnage
Beaumont (#4 - 87.3 million tons) #1 Military Port in the World
Gulf Intracoastal Waterway (126.1 million tons) #3 Inland Waterway
Corpus Christi (#6 - 84.9 million tons) America's Energy Gateway
Texas City (#15 - 47.9 million tons) Services Largest Petrochemical Complex
Port Arthur (#20 - 36.7 million tons) Vital Break-Bulk Port
Freeport (#32 - 22.3 million tons) Connecting Global Services Via Caribbean Relay Port
Matagorda to include Port of Port Lavaca and Port of Point Comfort (#48 - 11.3 million tons) Generates Annual Business Revenues of Nearly \$2 Billion
Galveston (#52 - 10.7 million tons) #4 Cruise Ship Port
Brownsville (#67 - 6.9 million tons) #1 Ship Recycling Port
Victoria (#70 - 6.5 million tons) #2 Shallow-Draft Port for Domestic Crude Petroleum

Concepts of Resilience against Disturbances and System Sustainability



Goal is for Texas Coast to be:

- A resilient community with healthy ecosystem
- Positioned for sustainable economic growth
- Supported by strategic partnerships that support Non-Federal investment

Addressing Problems and Opportunities in the Coastal Protection and Restoration Program



- Economic damage from coastal storm surge
- Inland shoreline erosion
- Gulf shoreline erosion
- Loss of T&E Critical Habitats (migratory bird habitat, critical T&E habitat, shellfish habitat)
- Loss of Natural Delta Processes
- Disrupted Hydrology



SRRI Vision

- Interconnected portfolio of partnered projects across business lines.
- Incorporates Regional Sediment Management (RSM), Engineering with Nature (EWN), Natural and Nature Based Features (NNBF), and Multiple Lines of Defense (MLD).
- Nested/networked infrastructure interoperating regionally to deliver broad spectrum of enduring economic, environmental, and social values.
- Value proposition for pursuit via inter-operational synergies:
 - Transformed organizational technical, business, and management processes,
 - High performing workforce culture, and
 - Parties who understand, contribute to, and value the concepts and support infusion into practice.

