Response to growing vulnerabilities along the Gulf Coast in the wake of coastal land loss, degrading landscapes and coastlines

Recent natural and man-made disasters demonstrate what future holds without planning, adaptation and investment in resiliency

New data on infrastructure vulnerabilities based on comprehensive five-state study and science showing advanced degradation

DELTAS2010: World Delta Dialogues recommendations to build local solutions
LEADERSHIP FORUM PREMISE

✓ Convene non-partisan, balanced regional dialogue on local coastal issues
✓ Identify specific vulnerabilities of the Houston region
✓ Bring in unique expertise to address the issues
✓ Honor core values and build local pride
✓ Serve as a catalyst for empowerment of individuals and communities
DATA SOURCES

NOAA – *How Resilient Is Your Coastal Community?*
- A guide for evaluating coastal community resilience vs. hazards
- A blueprint for establishing resiliency factors and web

Entergy/AWF – *Building A Resilient Coast Study*
- $350 billion in economic damage by 2030
- Provided detailed economic forecasting and future at-risk infrastructure in the region
THE PROCESS

Pre-Forum:
- Environmental scan of previous initiatives & studies
  - Meeting with local policy leaders
  - Individual interviews with diverse stakeholders
  - Focus group with diverse stakeholders

Forum:
- Research findings & expert presentations
  - Working sessions

Post Forum:
- Solicitation of public input
  - Report of Findings
- Follow-up on recommendations for action
“RESILIENCY”
Resiliency is defined as the ability of a community to adapt to change – including environmental, social and economic change.

“CORE VALUES”
Core values include what makes up the core of a community’s identity. These could be cultural values that exemplify lifestyle or way of life or what determines the economic prosperity of the community.

“COMMUNITY”
Community is defined as where you might live or associate in the greater Houston area.
Community awareness of vulnerabilities is closely tied to recent storm events.

Educating homeowners on flood plain and surge risks is necessary.

Sustainability needs to be emphasized along with Houston’s historically robust growth and development mindset.

“[Awareness] changes by the month. After Ike, people were very aware of this threat and now hurricane season started and we are still vulnerable. Had a couple of quiet hurricane seasons.”

“Street flooding and surge flooding and the latter is poorly understood by the public and there is no information made available to the public. Flood plain maps and hurricane surge risk are separate and apart.”

“Some governmental authority put surge markers in the Clearwater area for a category 5 storm. One of the City Councilman [worried] over this and said it was bad for business.”
FINDINGS: Values

✓ Values include the following:
  • Cosmopolitan and diverse community focused on jobs
  • Culture, wild areas, and recreation offerings
  • Regional prosperity, growth and job availability
  • Status as a port community
  • Entrepreneurial spirit of the community

“[Our] values have always been about growth…but people are growing more concerned about quality of life issues.”

“The community is very focused on the Gulf [of Mexico] from an economic and recreational point of view.”

“Houston’s status as a port is important to the community.”

“People live here because it’s a prosperous place and job growth has been strong.”

“The wild areas are the gem of this area—there are 10 different ecosystems in and around this region.”
FINDINGS: Strengths

✓ Improved evacuation routes and warning systems after recent storms

“They did update evacuation channels and coordination on the city and county level is good.”

✓ A robust, diverse economy and industry with cultural institutions and ecological assets

“[Houston is] diverse culturally and ecologically – I also think of it as being the center of energy industry.”

✓ Abundance of partnerships and organizations working on Houston resiliency (SSPEED, GHAC, GHP, BUG, etc)

“[A strength is] the research center at Rice SSPEED. The Governor has established a committee with county judges to look at coastal resiliency issues.”
✓ Flooding, wind damage and storm surge are threats that are compounded by a growing population that stresses local transportation infrastructure and utilities.

“[We] are most vulnerable to storm surge and evacuation during the city related to storms.”

“Part of the challenge is transportation and evacuation. Is it feasible to have a million people [evacuating safely]?”

“We have an antiquated drainage system that has not grown as fast as the population has grown.”

“Another [area of concern] is the lack of mass transit--highways keep filling up as fast as they widen them.”

 ✓ Large population growth, especially in low lying flood plain and coastal areas increases Houston’s vulnerability to these threats.

“...Low lying areas and highly industrial areas are impacted by storm surge and population growth...”
✓ Public education and transparency about coastal vulnerabilities can be improved.

✓ Increased coordination of regional management about coastal hazards will increase resiliency.

✓ Coordination of planning efforts and communication is difficult as groups operate independently.

“Regional cooperation and regional focus…is important.”

“Information is not out there in an accessible format. Maps are hard to get and people buying a house may not be aware [of potential hazards].”

“There is no comprehensive regional management about coastal hazards.”

“[Houston] has not been successful in coordinating [planning] efforts and synthesizing information for stakeholders and policymakers.”
FINDINGS: Threats & Vulnerabilities

✓ Important infrastructure at risk includes the following:

- Houston Ship Channel
- NASA infrastructure
- Medical district
- Energy generators
- Sewage treatment plants
- Petrochemical and oil refineries
- Addicks and Barker reservoirs

Note: Rated by USACE with highest risk of failure rating possible

“The real risk is the huge number of petrochemical and refineries that surround Houston.”

“After Alison we realized how important the medical district is -it’s a huge vulnerability.”

“The City [of Houston] came to its knees when it didn’t have power for 18 days.”

“All kinds of sewage treatment and drinking water facilities around the bay [are vulnerable].”

“The ship channel is a major infrastructure deal...that will need to be protected.”
FINDINGS: Overall Resiliency

✓ Transportation issues, at-risk infrastructure and low risk knowledge among the general public make it more vulnerable.

✓ Houston has the potential to become a highly resilient community if it can act on scientific research and tools that are at its disposal and adopt a holistic approach to planning.

“The outlook for 2030 is not good because policymakers are not looking this far ahead…If you look at [certain indicators] and how they play out, there are significant vulnerabilities there.”

“By 2030 we really need to get a hold of our growth and ensure it happens in a smart way.”

“With right leadership, this can happen – it is a function of bringing it together and we need the right champion in the community to make this happen. Given what we have learned from natural events, we need to be adaptive and iterative and we are not there yet.”
FINDINGS: Resilience Index

- Transparency, Public Education & Awareness
- Disaster Recovery & Emergency Response
- Warning & Evacuation
- Governance
- Society & Economy
- Coastal Restoration and Protection
- Land Use & Structural Design
- Risk Knowledge
✓ Buyouts and preserving more land to act as a buffer from storm surge.

“What is key is...preserving more land that can act as a buffer and realistic building codes based on storm surge.”

“The Port Agency Beneficial User Group is working with the port and USACE to promote marsh building and other activities but it is expensive.”

“Restore the natural filtration systems in the Gulf area...primarily oyster reef restoration.”

“If [wetlands] are regulated we have a chance of protecting them better.”

✓ Advocating for the proper use of the Harbor Maintenance Trust Fund for dredging of the channel.

“The continued dredging of the channel is strongly influenced by funding on the state and federal levels.”

“One of the problems is a funding source dedicated to harbor maintenance is raided.”
✓ Funding from a variety of sources is needed to pay for increasing financial costs to secure a resilient future in the face of growing threats and vulnerabilities.

“Enormous costs--seems like the federal government should pay due.”

“The insurance industry is thinking about liabilities and things that could be done to reduce losses…Industry working with insurance can help move this along.”

“Traditionally folks have wanted to rely on the Federal government but it will be harder moving forward. We will need to figure out how to pay for it locally.”

“The best option may be to work across silos and try to get a non-structural economic solution that does not involve the USACE.”
✓ Education and awareness-building of threats will increase community resiliency.

“Texas does not promote its land loss as well as Louisiana.”

“A lot of people don’t think to check with the flood district when buying property. They don’t know how high or low [the land] is.”

✓ Evaluation of structures along the western shore of Galveston Bay to determine ecosystem viability and effectiveness.

“We are looking at strategies for trying to implement a levee system along the western shore of Galveston Bay.”
✓ Determine the cost benefit of adaptation strategies to improve building codes and sustainable development.

✓ Provide public access to information on community vulnerabilities.

“[We] need to look into sustainable growth and curtail population growth in areas that are vulnerable and areas where there is significant storm surge.”

“Street and surge flooding is poorly understood by the public and no information is made available [to them.] The flood plain map and hurricane surge risk are separate and apart.”

“The barrier island is being redeveloped so fast its startling.”

“As long as we have the attitude of sharing the risk for a person’s bad decisions, we make it too easy for people to rebuild.”
Next Step: Working Sessions

Discussion Questions:

✓ How do we protect what we value based on how vulnerable we are and the risks we face?

✓ Aligning with what we value, how do we prioritize solutions based on our values?

✓ Where do we start?