

Bottom – Up Community Assessment Exercise – Galveston Bay, TX

ASBPA Coastal Resilience Course – Oct 13, 2015

In this exercise we will use tools and climate projections available online to create solutions to address a hypothetical problem for a Galveston Bay area community. Please keep in mind that this exercise is intended to explore a resilient solution to a coastal problem – for the first stage, we will not worry about issues of funding, land acquisition, permitting, etc. At this point in the course, we would hear your ideas for planning a project that incorporates the different strategies that are necessary to achieve resilience for infrastructure, the environment, and the community.

Definitions:

- **Bottom-Up** assessments are typically based on direct input from local communities and utilize anecdotal information, experience, and expert judgment in addition to available data. Results from Bottom-Up assessments are intended for use by the community to identify vulnerabilities and build capacity to respond and recover. These results are generally not transferable to other locations and often are not broadly shared with others.
- **Top-Down** assessments typically have a larger spatial domain and are externally generated using regional, state and local data sets. Top-Down results can be utilized to inter-compare regions, understand implications of policy, and engage stakeholders. Ideally Bottom-Up results would be utilized in Top-Down assessments; however, non-uniformity of applications, proprietary considerations and the subjective nature of Bottom-Up results have limited aggregation (Knight and Link 2015).

Online tool:

- The Nature Conservancy Coastal Resilience Tool for Gulf of Mexico – provides a wealth of information on community planning, future flood and sea level rise, future habitat restoration, and risk. This tool incorporates several of the other agency's data sets, so is a valuable resource.
 - <http://maps.coastalresilience.org/gulfmex/>

Bottom – Up Exercise Background:

The Texas General Land Office has received funds for multi-benefit ecosystem restoration and flood risk reduction projects in Galveston Bay. The GLO would like to incorporate storm protection and environmental features such as oyster reefs, marshes, or dunes that would add diversity to an existing ecosystem. Officials have decided to use some of the project funds to provide benefits for three neighborhoods in the west end of the Island: Bay Harbor, Terramar Beach, and Sea Isle. These neighborhoods are neither protected by the Galveston Seawall or any of the recent beach-dune restoration projects that have begun just west of the seawall and are exposed to coastal storms and future Sea Level Rise (SLR). Residents are concerned that they have limited protection from storm surge and back-bay flooding and are requesting storm

surge protection. They have decided that they would be open to dune restoration projects that potentially block beach views, as long as public access is maintained. Any proposed project designs must include consideration of SLR at the rate of 1 meter by the year 2100.

Work within your group to use the information provided from The Nature Conservancy's Coastal Resilience Tool and NOAA's SLR indicator to familiarize yourself with the constraints of the system. Next, work together to design a potential plan for the area that incorporates resilience principles (Prepare, Absorb, Recover, and Adapt) and incorporates projections of future SLR.

Please describe your proposal in the grey box below. Next, record your thoughts on how that design generally addresses the resilient concepts of prepare, resist, recover, and adapt.

Galveston Island Bottom-Up Exercise Location and Design:			
Prepare	Resist	Recover	Adapt

