

Sea Level Rise Adaptation Strategy Role-Play Game

➔ Background

The rising level of the ocean waters is a **significant concern** to coastal cities, working waterfronts, and natural areas.

Local leaders and planners are considering physical, legal, economic, and social strategies to **adapt to the impacts** of sea level rise.

The wide ranging impacts of sea level rise and the novelty of adaptation strategies necessitates public education and involvement to identify and select the **strategies**.

➔ The Game

This fact sheet describes one such public involvement tool, the **Sea Level Rise Adaptation Strategy Role-Play Game**, developed as part of the “Planning for Sea Level Rise in the Matanzas Basin Project” conducted by the Guana Tolomato Matanzas National Estuarine Research Reserve (GTM NERR) and the University of Florida.

(See PlanningMatanzas.org)

By June 2013, over 300 people, from middle school level to adults will have played

Why Use a Role-Play Game?

The game serves outreach purposes in an applied, problem-solving manner. First, the game *introduces participants to sea level rise adaptation strategies*, including their functions and economics. For example, groups may learn that living shorelines are less expensive than seawalls but provide some of the same functions.

The game *leads to transformative learning about collaboration*. By discussing the strategies from different perspectives, players learn how strategies can be mutually beneficial for multiple stakeholders, or where strategies may lead to conflict. For example, an inland developer and coastal resident may discover that they could both benefit from water storage easements.

For planners and researchers, observation of the game *provides an understanding of the participants’ preferences for different strategies*. Different participants may react differently to the game. For example, youth and adults may have different planning time horizons. Findings like these are important when developing long-term plans for sea level rise adaption.



Participants were challenged to take on different personas.



Local leaders from the Matanzas Basin region interact with trained facilitators during the Sea Level Rise Adaptation Strategy Role-Play Game.

So What Is The Objective?

In the Matanzas project, the game is administered during the last hour of a three-hour workshop, after participants have been informed about the science of sea level rise, local impacts, and potential adaptation strategies. The sea level rise adaptation planning primer is important for participants to make informed decisions during the game.

The objective of the game is for players to represent different stakeholder groups, through assigned personas, and to work together to “buy” different sea level rise adaptation strategies to create a 20-year plan for their community.

Learn more on back page...




➔ Game Materials

Game Description. This document is primarily for the facilitator to present the planning scenario and rules of play. It also includes game objectives, goals, and helpful tips.

Stakeholder Persona Cards. Five cards representing: Inland Developer, Environmental Scientist, Local Resident, Local Government Official, and Ecotourism Business Owner. These cards have background information about each persona and the money available.

Local Resident **\$100 million**


- You have been selected to represent your community on this issue.
- Your community is a beach community.
- Members of your community enjoy living where they do because they enjoy seeing wildlife in their backyards, watching dolphins swim into the sunset, and going to the beach.
- Your houses are near the water and your neighborhood floods during heavy storms.



Adaptation Strategy Cards. Eight cards explaining the following strategies, including cost:

- Beach Nourishment
- Habitat Migration Corridors
- Ecosystem Conservation
- Seawalls
- Elevating Structures
- Water Storage Easement
- Planned Relocation
- Living Shoreline

Living Shoreline **\$25,000/acre**



1. Reintroducing wetlands to areas that have lost them. Wetlands help absorb the impact of coastal dynamics by providing a place for the water to go, acting as a buffer between the sea and development.
2. Using organic and structural materials like wetland plants, sand, aquatic vegetation, oyster reefs and stone to create a protective shoreline and maintain valuable habitat.

Key benefits: Allow migration of habitats and threatened species, protect recreation and tourism, protect fisheries and rookeries; improve water quality via filtration of upland runoff

Individual Pre- and Post-Game Worksheets. For research purposes, these worksheets are sets of identical questions regarding adaptation preferences that group members fill out before and after the game. One objective is to document persona and personal strategy preferences. The second is to see if preferences changed or remained the same after playing the game.

Group Post-Game Evaluation. For research purposes, the group answers these questions as a whole. The questions gauge players' ability to reach a consensus. The evaluation also documents any issues that the group faced such as budgetary constraints or understanding the perspective of their stakeholder. This is representative of real world issues that stakeholders may encounter in the sea level rise adaptation planning process.

Other materials. Groups may use a timer, pens, notepads, and small calculators.



Using various game materials, participants collaborated and negotiated with each other on the sea level rise adaptation planning process.

How Does the Game Work?

Groups of five gather around a table with a facilitator who reads the instructions and assists the players as needed. The facilitator gives each participant a card assigning a unique stakeholder persona and a specific amount of “money” to spend. At the center of the table are eight different sea level rise adaptation strategy cards, each with a unit price indicated. The participants are also provided with a map of their local area depicting places vulnerable to sea level rise, and a conceptual map showing the types of places where different strategies may apply. Beyond these instructions and materials, playing the game is highly flexible.

If the game is conducted for research and planning purposes, the participants complete the individual pre-game worksheet.

To begin the game, each group member describes their persona and preferred adaptation strategies. Then the discussion opens up to everyone for negotiation. The facilitator or a group member takes notes about the emerging plan. Groups are given approximately 45 minutes to reach agreement on the plan. At the game's conclusion, the participants complete the individual post-game worksheet and the group post-game evaluation. Last, each group presents their plan.

Adapting the Game...

Younger Audience. Youth appreciate this interactive and creative learning experience that provides an opportunity to be involved in a planning process. To adapt the game materials, the wording of the instructions and playing cards can be edited to correspond with the reading level of the audience. If students become hung up on the money or are having difficulties budgeting, it's okay to weight the strategies with more abstract pros and cons rather than money.

Larger or Smaller Groups. If there are greater than five people in a group, more than one person can play the same persona, such as the local resident. Individuals playing the same persona can still advocate different strategies depending on what they believe to be in the best interest of their stakeholders. If there are four people in a group, the facilitator can play a persona.

Custom Strategies. If there is an adaptation strategy that is frequently used in your area feel free to include it. You can also include more conceptual strategies that haven't been implemented frequently in the past, but are becoming popular in the sea level rise adaptation strategy literature. Make sure to research the costs and lifespan of the strategy and display it on the card.

For additional information
Visit the project website at PlanningMatanzas.org.
For game materials or questions, contact Briana Ozor at briozor@ufl.edu or Dr. Kathryn Frank at kifrank@ufl.edu, the Department of Urban and Regional Planning, University of Florida, Gainesville.

