



## YOUR MISSION AS A COMMUNITY

Your mission as a community is to work together to find a solution or set of solutions to the flooding impacting Spartina Beach. You may select as many solutions that work for you, keeping in mind both a limited budget and environmental impact. Be prepared to share why you've selected particular solutions with the class!



## PUBLIC WORKS PROFESSIONALS

This group of individuals is responsible for maintaining and improving infrastructure within the community. This entails maintenance of public spaces, parks and facilities, road repairs and traffic control, drainage structures, solid waste. These measures are all important for public safety within the community.



## HOMEOWNERS

Middle class homeowners in Spartina Beach are concerned about the risks of flooding in their neighborhoods. They are worried that property values will decrease over time and that flood insurance will increase.



## SMALL BUSINESS OWNERS

Tourism is one of the main industries in Spartina Beach. Flooding makes it difficult for small businesses to stay open and attract customers. Many are faced with the difficult decision of relocating to a new area or losing revenue.



## LARGE DEVELOPERS

The priority for large developers is to maximize profits and develop homes and businesses in tourist areas like Spartina Beach. Homes with marsh views sell for more money, so these are the most desirable lands to develop.



## ENVIRONMENTAL SCIENTISTS

Environmental scientists are concerned that loss of habitat and increased runoff, pollutants, erosion and other hazards are threatening local wildlife as well as public health. These environmentally-minded individuals prefer more natural solutions to Spartina Beach's ongoing problems.





**WHAT IT IS:** Moving citizens away from barrier islands and high-risk areas so that homes do not continue to be destroyed by natural disasters.

- PROS:**
- The environment can get back to its natural state
  - Habitat restored
  - Homes do not continue to sustain damage from storms
  - Reduced property loss

- CONS:**
- People do not want to leave where they live, especially if they were raised there
  - Relocating is a major expense and hassle
  - Businesses and other industries will lose significant amounts of money

**COST**  
**\$\$\$\$\$**  
 This relocates 2 families.

**ENVIRONMENTAL  
 QUALITY  
 RATING:**



**WHAT IT IS:** A hard, stationary wall that is used to prevent flooding and shoreline erosion.

- PROS:**
- Shields the shoreline against erosion from waves
  - Helps prevent flooding as long as water does not rise higher than the wall

- CONS:**
- Interrupts natural processes
  - Reduces nursery habitat
  - Increases erosion on adjacent properties
  - Prevents runoff from being filtered by wetlands
  - Removes wildlife habitats
  - Construction changes natural shoreline

**COST**  
**\$\$\$\$\$**  
 50-75 feet of shoreline modification

**ENVIRONMENTAL  
 QUALITY  
 RATING:**







## LIVING OR SOFT SHORELINE

**WHAT IT IS:** Stabilized shoreline using natural materials including oyster shell, rocks, logs, plants and sand.

- PROS:**
- Provides important new habitat
  - Helps maintain the natural dynamics of the shoreline
  - Helps to improve water quality
  - Protects land from wave action
  - Helps to absorb storm surge
  - Allows marsh to migrate as sea levels rise
  - Protects and creates critical habitat

- CONS:**
- Not effective in high energy environments
  - May take time to establish
  - Less protection from major flooding

**COST**

\$\$

150 square feet  
of soft shoreline

**ENVIRONMENTAL  
QUALITY  
RATING:**



## ELEVATED HOMES

**WHAT IT IS:** The process of elevating your home so that living areas are far above ground, preventing flooding and storm damage.

- PROS:**
- Protects home against floods
  - Allows for the natural flow of rain
  - Minimizes ecological impact of construction
  - Less susceptible to pest and water damage

- CONS:**
- Expensive for the homeowner
  - Pilings need to be replaced over time
  - Limitations due to construction rules, such as height restrictions
  - Not all homes can be raised

**COST**

\$\$\$\$

Elevates 4 homes

**ENVIRONMENTAL  
QUALITY  
RATING:**







## EDUCATION & OUTREACH CAMPAIGNS

**WHAT IT IS:** Professional educators and scientists teach the general public of all ages about coastal hazards and resiliency.

- PROS:**
- Creates knowledge and awareness among the public
  - Gives people confidence to solve local environmental problems
  - Increases interest in the environment and STEM careers

- CONS:**
- Requires knowledgeable educators to deliver quality programs
  - Can be time consuming
  - Providing opportunities for students to get into the field can be a challenge

**COST**  
\$

Reaches 500 people  
through 20 programs

**ENVIRONMENTAL  
QUALITY  
RATING:**



## UPDATE TO "GREEN" INFRASTRUCTURE

**WHAT IT IS:** Updating roadways and other spaces to include pervious (porous) surfaces, native plant spaces, solar power, and other "green" building techniques.

- PROS:**
- Reduces coastal flooding by slowing the flow of stormwater
  - Reduces pollutants entering waterways
  - Reduces erosion
  - Creates wildlife habitat
  - Makes the community look nice

- CONS:**
- Requires major effort to update existing infrastructure
  - Continued maintenance
  - Cost increases with scale of project
  - Requires government support

**COST**  
\$\$\$

Improves drainage  
for 1 city block

**ENVIRONMENTAL  
QUALITY  
RATING:**

