Game of Floods *Marin Island*

Instructions

Sea levels are rising world-wide as warming oceans expand and melt glaciers and ice sheets. Stronger storms coupled with rising seas can significantly damage— even destroy—property, infrastructure, public facilities, natural habitats, and other resources we depend on. In the face of these threats, planning commission members are tasked with collaboratively developing an Adaptation Plan using the strategies (game pieces) for the scenarios provided.

1. To begin, the facilitator reads the scenario aloud.

2. Role the di to determine who goes first. The highest roll goes first. If a tie for first occurs, the tied players re-roll. Take turns clockwise around the table.

3. In turn, each player selects an asset to accommodate, defend, or retreat from. No need to duplicate   assets. Use the worksheet provided to record your choice, costs, and pros and cons.

4. Next, in turn, each player places and states aloud their preferred adaptation strategies on or around the island. Conflicting strategies are allowed.

5. Use the remaining time to finalize the group's proposal by resolving conflicts. Consider the following factors to inform the proposal: (1) Costs/funding, (2) Private property impacts, (3) Environmental impacts, (4) Equity/social justice concerns, (5) Others. Use your worksheet to take notes.
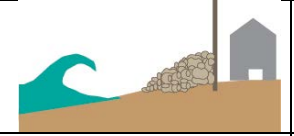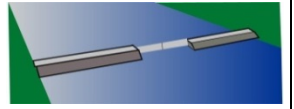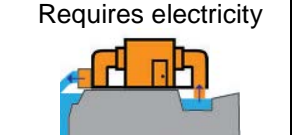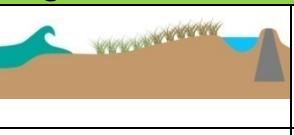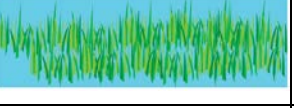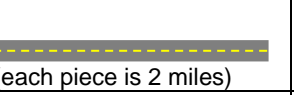
SEA LEVEL RISE SCENARIO: 2050
Red = Permanent Sea Level Rise Flooding
Orange = Temporary Annual Storm Flooding
Yellow = Temporary 100-year Storm Flooding

Asset Legend

H Hospital	P Parking	School Site	Water	Grocery
F Fire Station	Library	Restaurant	Roadway	Public Well
Post Office	Religious	Boat Launch	Beach	Home
Ranch	Mammal Habitat	Marina	Evacuation Route	
Agriculture	Seabird Colony	Gas Station	Storm Shelter	
Sheriff	Aquaculture	Sewage Lift Station	Electrical Sub-Station	

Adaptation Game Piece Reference Sheet

Name	Piece	Piece Units	Cost ($)	Enviro. Impact EEE (neg.) EE (caution) E (positive)	Flood Protection Short, med, or long-term	Protects against					Feasibility	
						Temp. flooding	Storm surge	Sea level rise	Wave impacts	Erosion	Sheltered Areas	Open Coast
Hard (Traditional) Engineering												
Traditional Levee		1 Mile	$$$$	EEE	med ◗	x	x	x			x	
Seawall or Revetment		1 Mile	$$$	EEE	med ◗		x		x	x	x	x
Tidal Gate		Creek width	$$$$$	EEE	med ◗	x	x	x			x	
Flood wall & pump station	Requires electricity	1 Mile	$$$	EEE	short ○	x	x	x			x	
Soft Engineering												
Horizontal Levee		1 Mile	$$$$	E	long ●	x	x	x	x		x	
Wetland/ shoreline vegetation		1 Acre	$$$	E	med ◗	x	x		x		x	
Beach Maintenance & Dune Restoration		1 Mile	$$$	EE	short ○	x	x		x		x	x
Offshore structure		1 Mile	$$	EE	med ◗	x	x		x		x	x
Accommodate (flood tolerant)												
Elevate buildings		4 Buildings	$$$	EE	med ◗	x					x	x
New/elevate road	(each piece is 2 miles)	1 Mile	$$$$$	EEE	long ●	x		x			x	x
New floodable development		Neighb-orhood	$$$$$	EE	long ●	x					x	x
Manage Retreat (relocate/zoning and policy changes)												
Retreat		4 Buildings	$$$	E	long ●	x		x		x	x	x
Move here		4 Buildings	$$$	EEE	long ●	x	x	x	x	x	x	x
Post-storm prohibitions		Indirect Cost	$	EE	long ●						x	x
Stricter land use zoning	Z	Indirect cost	$	EE	short ○						x	x