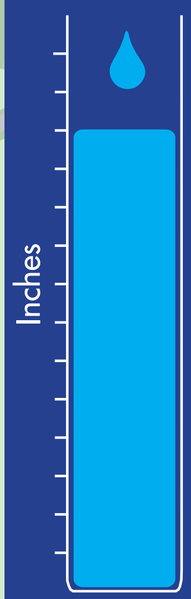
TYBEE ISLAND | SEA LEVEL RISE ADAPTATION BRIEF

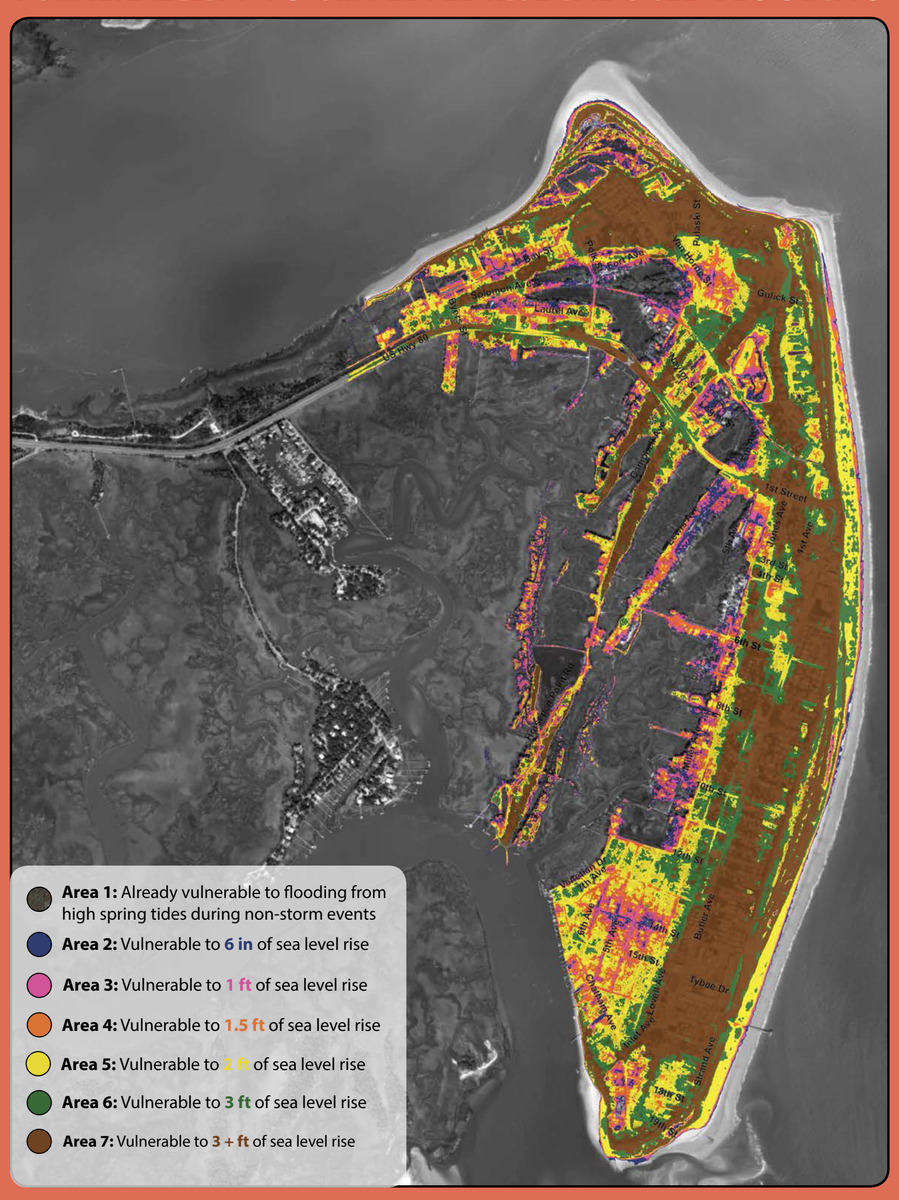
TYBEE ISLAND Sea Level Rise ADAPTATION PLAN

REGIONAL SEA LEVEL RISE



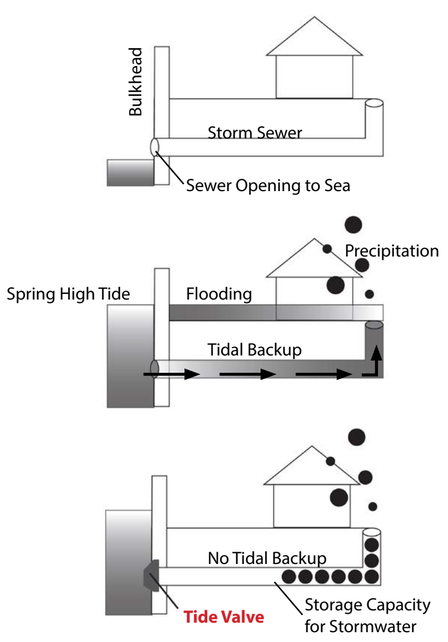
A gauge at Fort Pulaski reveals a sea level rise trend of 2.98 mm/yr since 1935, which amounts to approximately 1 foot of sea level rise over 100 years without expected rate increases from climate change.

VULNERABILITY TO SEA LEVEL RISE INDUCED FLOODING



- **Area 1:** Already vulnerable to flooding from high spring tides during non-storm events
- **Area 2:** Vulnerable to **6 in** of sea level rise
- **Area 3:** Vulnerable to **1 ft** of sea level rise
- **Area 4:** Vulnerable to **1.5 ft** of sea level rise
- **Area 5:** Vulnerable to **2 ft** of sea level rise
- **Area 6:** Vulnerable to **3 ft** of sea level rise
- **Area 7:** Vulnerable to **3 + ft** of sea level rise

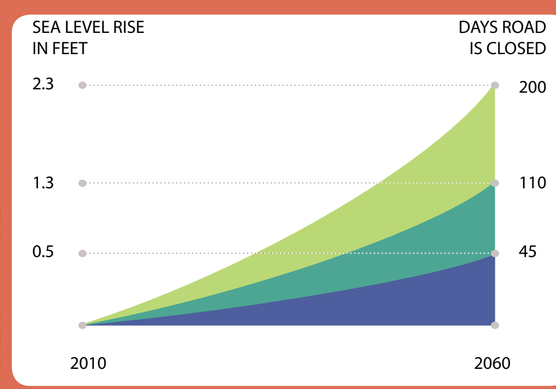
TIDE VALVES



ACTION 1 United States Highway 80

The Georgia Department of Transportation is currently evaluating new plans for bridge replacements and other major improvements on US80. This process provides the City of Tybee Island with an opportunity to work with GDOT and other partners on potential options for elevating US80 several feet above its current grade, thereby mitigating current and future hazards associated with tidal flooding of the road corridor.

THE FUTURE OF US 80



ACTION 2 Beach Nourishment

The beaches of Tybee Island are currently renourished on a 7-year schedule. Although the sand-sharing and erosion system along Tybee Island is influenced by many variables, sea level rise may result in the need for more frequent and/or higher volumes of sand renourishment. Pro-active research and planning is required to ensure that future renourishment projects are appropriately scaled and that adequate funding is identified.

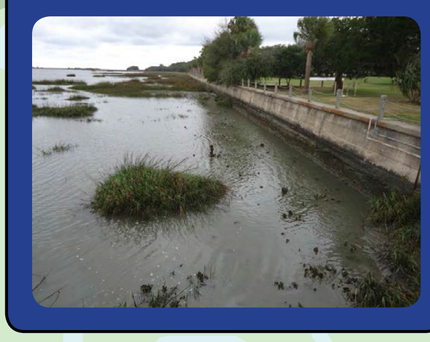
DUNES

Dunes offer some protection, but will erode over time due to increasing wave run up levels and frequency.

ACTION 3 Shoreline Stabilization

A number of developed areas on Tybee Island are vulnerable to increased flooding risk associated with sea level rise. Traditional approaches for stabilizing shorelines and holding back high water events include bulkheads and sea walls. While generally quite effective in holding back tidewaters, such structures are expensive to construct and are known to have a variety of impacts on coastal hydrology that can adversely effect natural resources. Balancing the site-specific benefits and costs of armoring is likely one of the most difficult issues that Tybee Island faces in relation to sea level rise. For this reason, a key goal of the adaptation plan is to discuss and suggest comprehensive policy options and novel methods for the City to consider regarding coastal armoring.

COASTAL SQUEEZE



ACTION 4 Elevating Well

In light of the threat of sea level rise, Tybee Island is moving forward to elevate critical city infrastructure such as well infrastructure. In addition, raising and floodproofing wastewater lift stations may arise as a planning need of the City.

FLOODING

1871, 1881, 1885, 1896, 1898, 1911, 1940, 1944, 1947, 1952, 1959, 1979

Tybee Island has been subject to flooding caused by hurricanes and tropical storms. The highest surges occurred during the hurricanes of 1881 and 1893 which caused flood heights of up to 15 and 18 feet respectively on Tybee Island.

ACTION 5 Stormwater Retrofit

Tybee Island has recently retrofitted a section of its storm-water drainage system with larger capacity pipes and tidal valve gates. These improvements lessen the risk of local flooding from extreme high tide and heavy rainfall events. Ongoing sea level rise will likely necessitate a series of other stormwater improvements over the next several decades. Prioritization of when to retrofit specific stormwater of when to retrofit specific stormwater basin, evaluation of different retrofit options, and identification of sustainable mechanisms to fund improvements are major planning needs.

ACTION 6 Community Ratings System

To improve their Community Rating within the National Flood Insurance Program, Tybee Island should consider innovative methods to deal with Repetitive Loss Properties located on the island.

COMMUNITY RATING SYSTEM

CRS Class	Credit Points	Premium Reduction
1	4,500+	45%
2	4,000-4,499	40%
3	3,500-3,999	35%
4	3,000-3,499	30%
5	2,500-2,999	25%
6	2,000-2,499	20%
7	1,500-1,999	15%
8	1,000-1,499	10%
9	500-999	5%
10	0	0%

The City of **Tybee Island** began **participation in the CRS Program** October 1, 1993. On May 1, 2015, the City of Tybee Island was awarded a rating of 5, providing each of its residents in the SFHA with a **discount of 25% on their flood insurance premiums.**

MAP: Jason Evans and Wick Prichard
VULNERABILITY FINDINGS: Jason Evans
GRAPHIC: Wick Prichard and Kelsey Broich
SOURCE: NOAA and The City of Tybee Island

Sea Grant Georgia North Carolina | Carl Vinson Institute of Government, The University of Georgia | City of Tybee Island GA, Incorporated October 15, 1887 | The University of Georgia College of Environment + Design: landscape architecture, historic preservation, env. planning + design, environmental ethics | Lamar Dodd School of Art | MAREX, The University of Georgia Marine Extension Service | Public Service & Outreach, The University of Georgia | Chatham County - Savannah Metropolitan Planning Commission, mpc, Georgia 1955