

Current and Future Flooding in Edisto Beach

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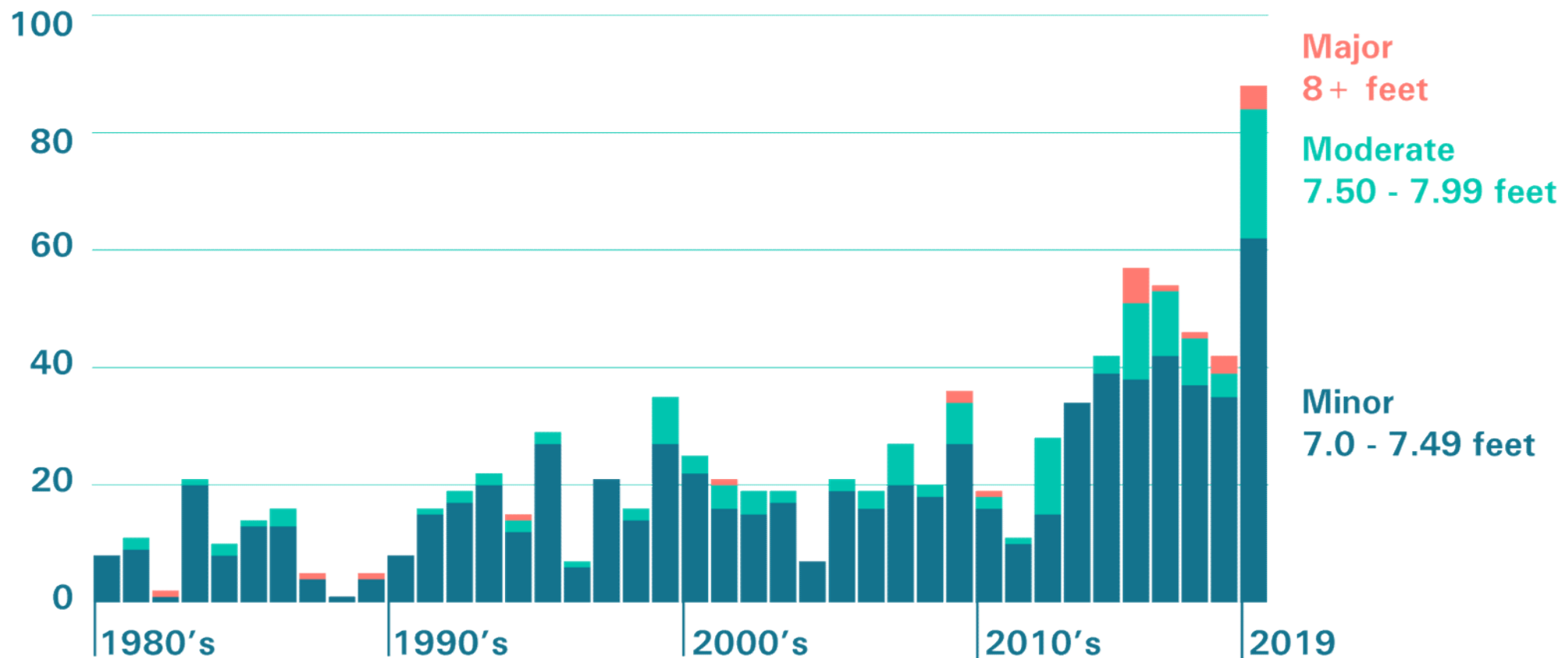
Tidal Flooding



August 29, 2019, 8pm. Charleston Gauge 8ft.

Photo: Casey Bell, submitted to S.C. DHEC/MyCoast

Total number of flood events at Charleston gauge



Major
8+ feet

Moderate
7.50 - 7.99 feet

Minor
7.0 - 7.49 feet

Source: National Ocean Service/NOAA; S.C. Sea Grant Consortium

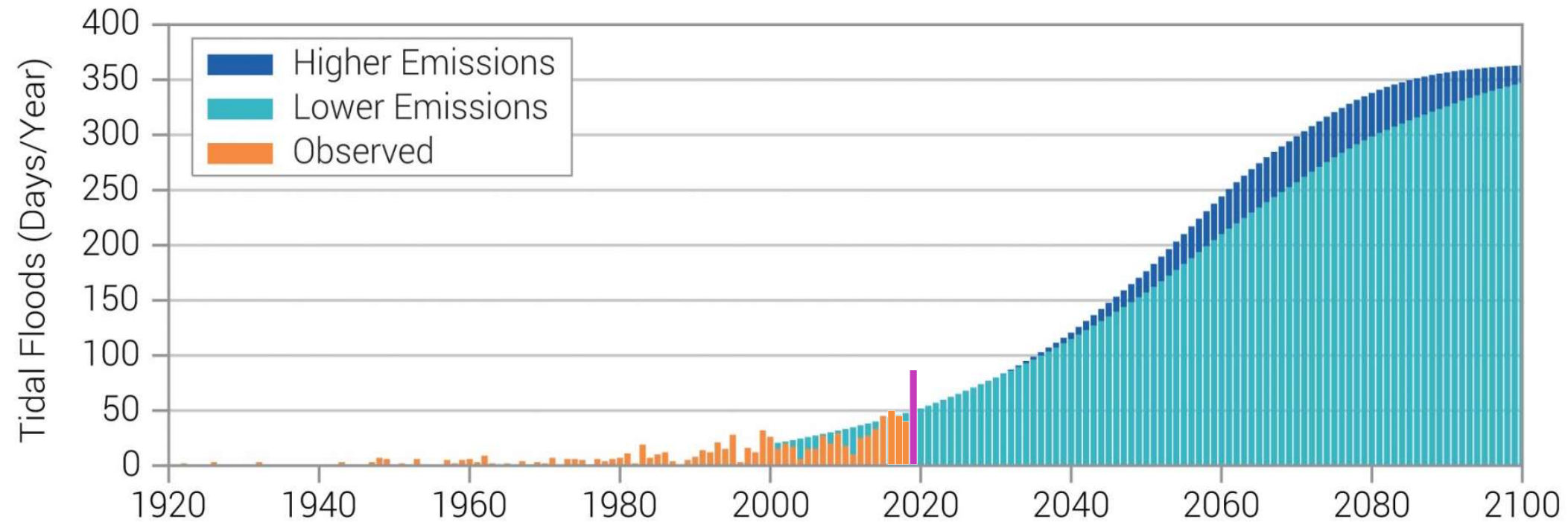
Top 6 Heights at Charleston Gauge

Date	Event	Above MHHW
09.22.1989	Hurricane Hugo	6.76 feet
08.11.1940	1940 Hurricane	4.47 feet
09.11.2017	Tropical Storm Irma	4.16 feet
10.08.2016	Hurricane Matthew	3.53 feet
01.01.1987	1987 New Year's Day storm	3.05 feet
11.24.18	Thanksgiving Weekend king tide	3 feet

Recent Heights at Charleston Gauge

Date	Event	Above MHHW
09.11.2017	Tropical Storm Irma	4.16 feet
10.08.2016	Hurricane Matthew	3.53 feet
11.24.2018	Thanksgiving Weekend King Tide	3 feet
10.27.2015	October 2015 King Tide	2.93 feet
08.30.2019	August 2019 King Tide	2.32 feet
12.24.2019	Christmas Eve 2019 King Tide	2.3 feet

Observed and Projected Annual Number of Tidal Floods for Charleston, SC



Source: NOS/NOAA

How Sea Level Rise Affects Communities

**Erosion
increases**

**Saltwater begins
infiltrating into
septic systems
and sewers**

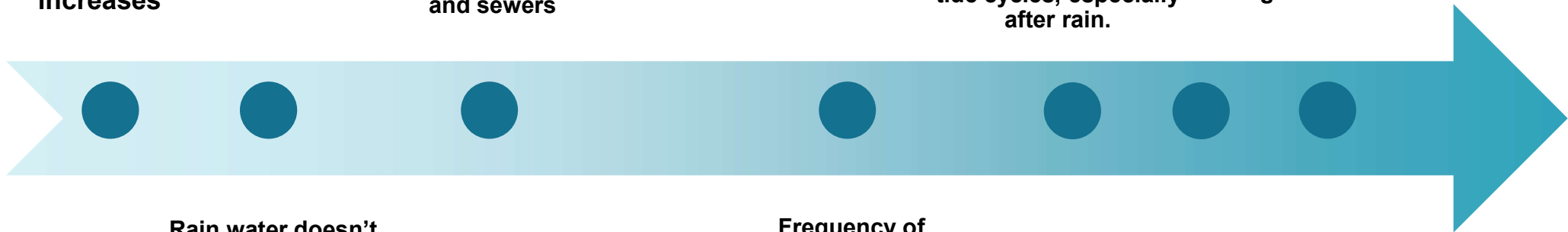
**Saltwater floods roads
and yards during mid
to high tides.
Disruptive flooding
may persist beyond
tide cycles, especially
after rain.**

**Un-elevated
buildings and critical
infrastructure flood
from lower-
magnitude storms**

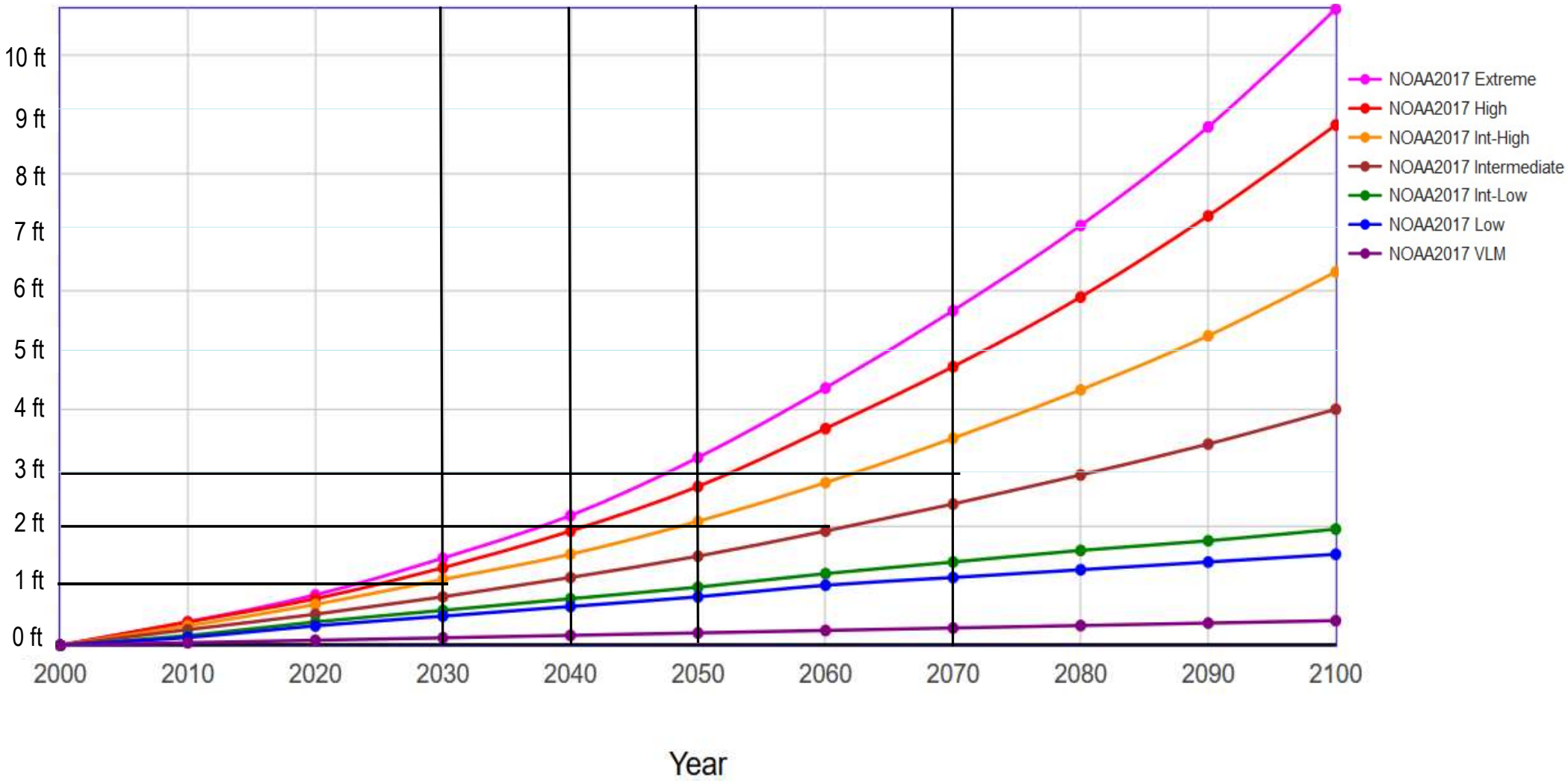
**Rain water doesn't
drain efficiently after
storms due to higher
groundwater and
higher tides**

**Frequency of
disruptive street
flooding gradually
increases and
becomes more
than a nuisance**

**Salt marshes
migrate landward.
Marsh areas that
can't elevate
begin to die off.**



NOAA 2017 Sea Level Rise Scenarios for South Carolina



1 ft above MHHW = Full/New Moon Tide or MHHW + 1ft SLR

2 ft above MHHW = King Tide or Full/New Moon + 1ft SLR

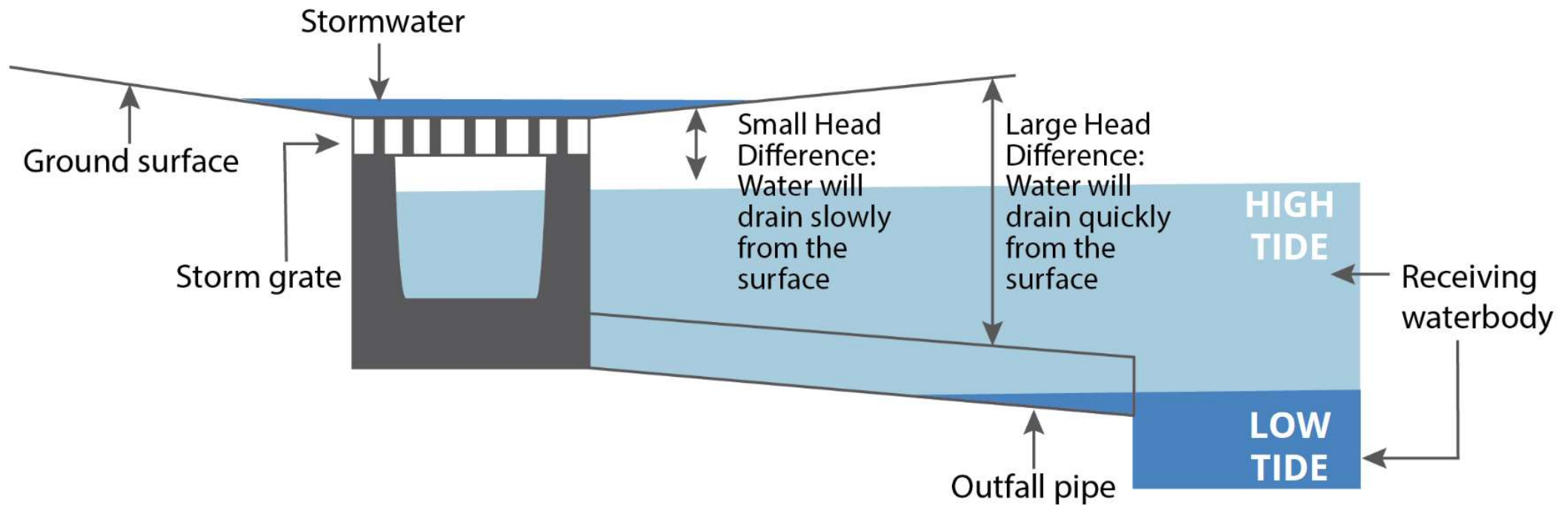
3 ft above MHHW = Thanksgiving King Tide or king tide + 1ft SLR

4 ft above MHHW = Irma or Thanksgiving King Tide + 1ft SLR

5 ft above MHHW = Irma + 1ft SLR

6 ft above MHHW = Irma + 2ft SLR or ~ Hugo

How Tides Affect Stormwater outfalls

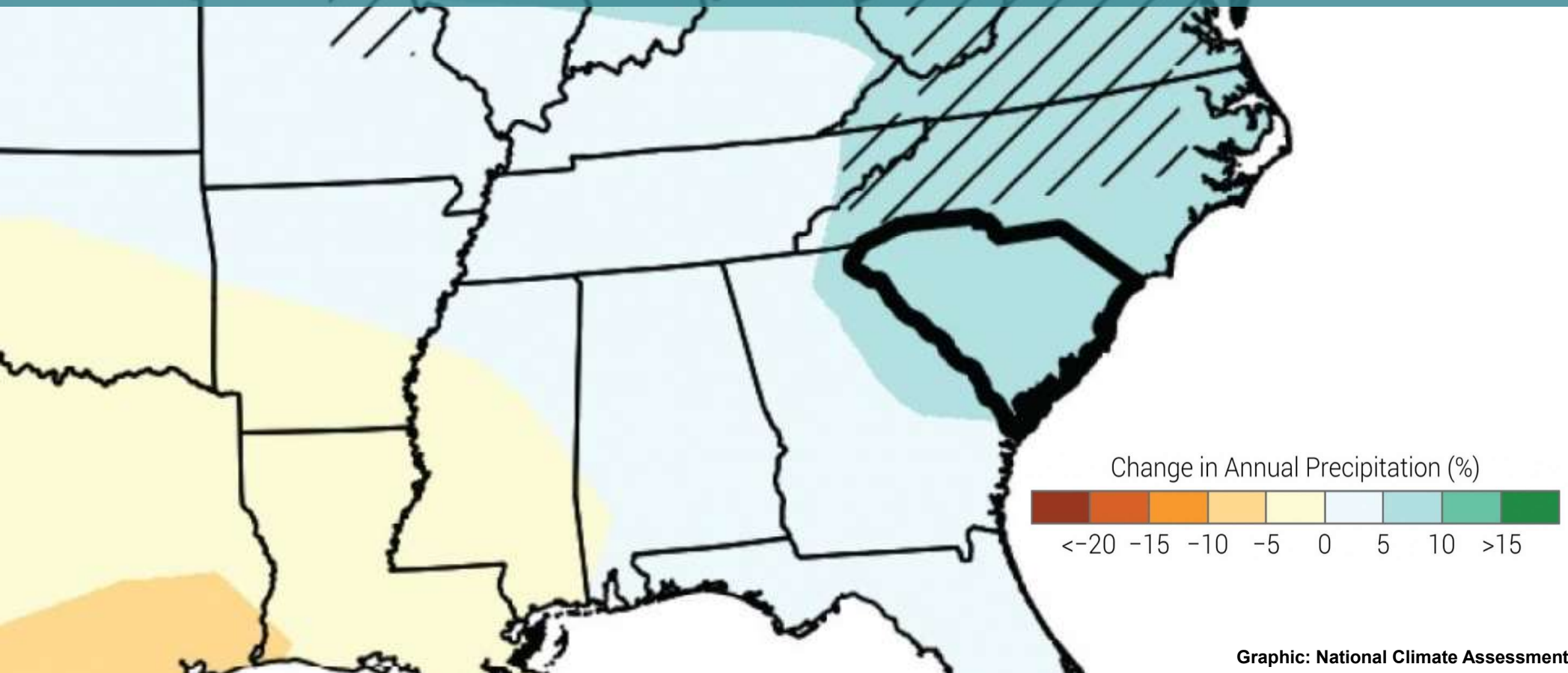


Graphic: City of Charleston 2019 Sea Level Rise Strategy

Increasing Heavy Rain



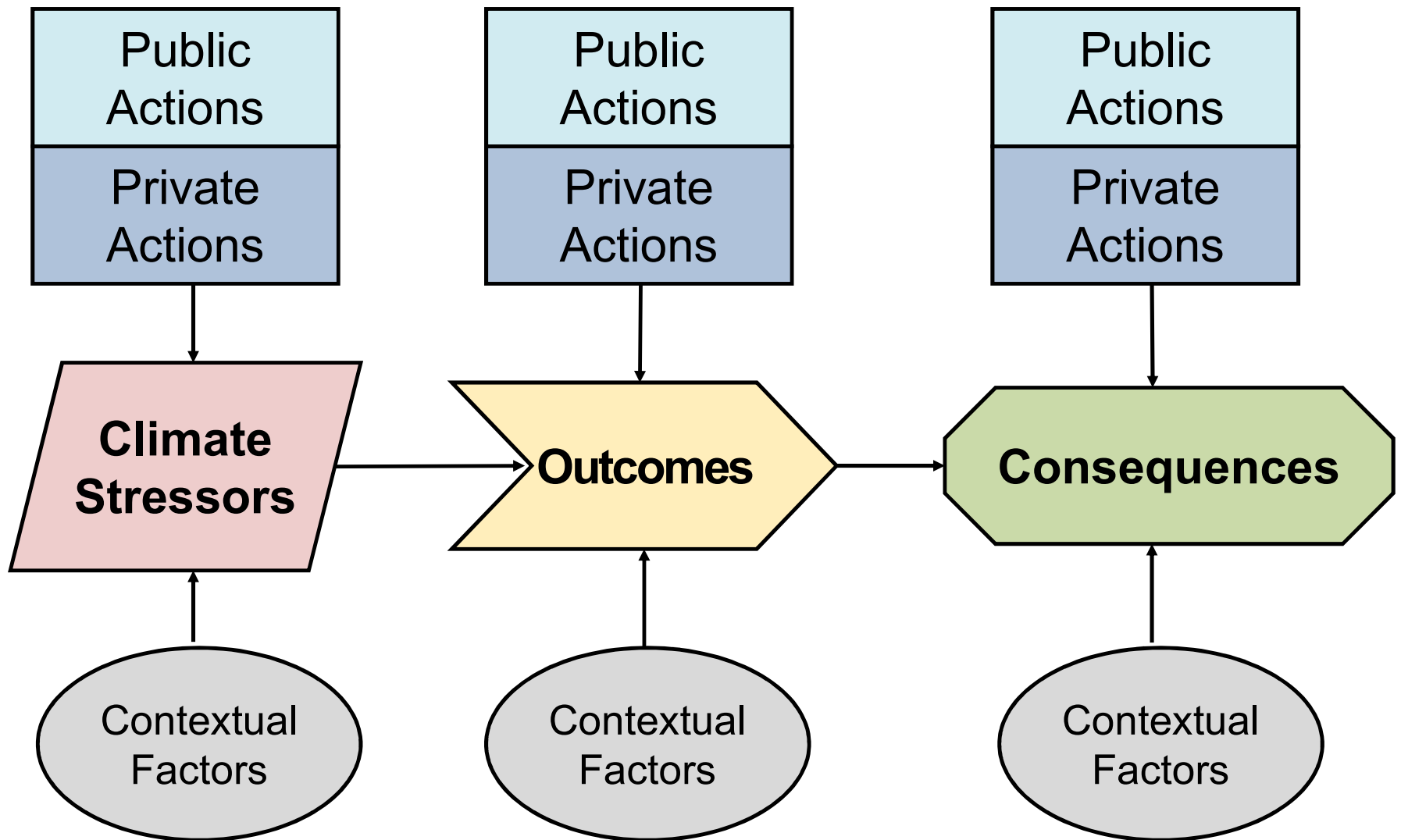
Projected Change in Annual Precipitation



Graphic: National Climate Assessment

A large pile of colorful jigsaw puzzle pieces is scattered across a white surface. The pieces are in various colors including blue, yellow, orange, red, pink, purple, green, and white. Some pieces feature cartoon characters like SpongeBob SquarePants. Two puzzle trays are visible: a blue one on the left and a yellow one on the right, both containing some puzzle pieces. The text "Now what?" is overlaid in the center of the image.

Now what?



Questions?

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Photo: Sarah Watson