



CLIMATE READY BOSTON

Boston's Climate Vulnerabilities & Solutions
Symposium



AGENDA

- I. **Overview**
- II. Climate Projection Consensus
- III. Vulnerability Assessment
- IV. Resilience Initiatives
- V. Q + A

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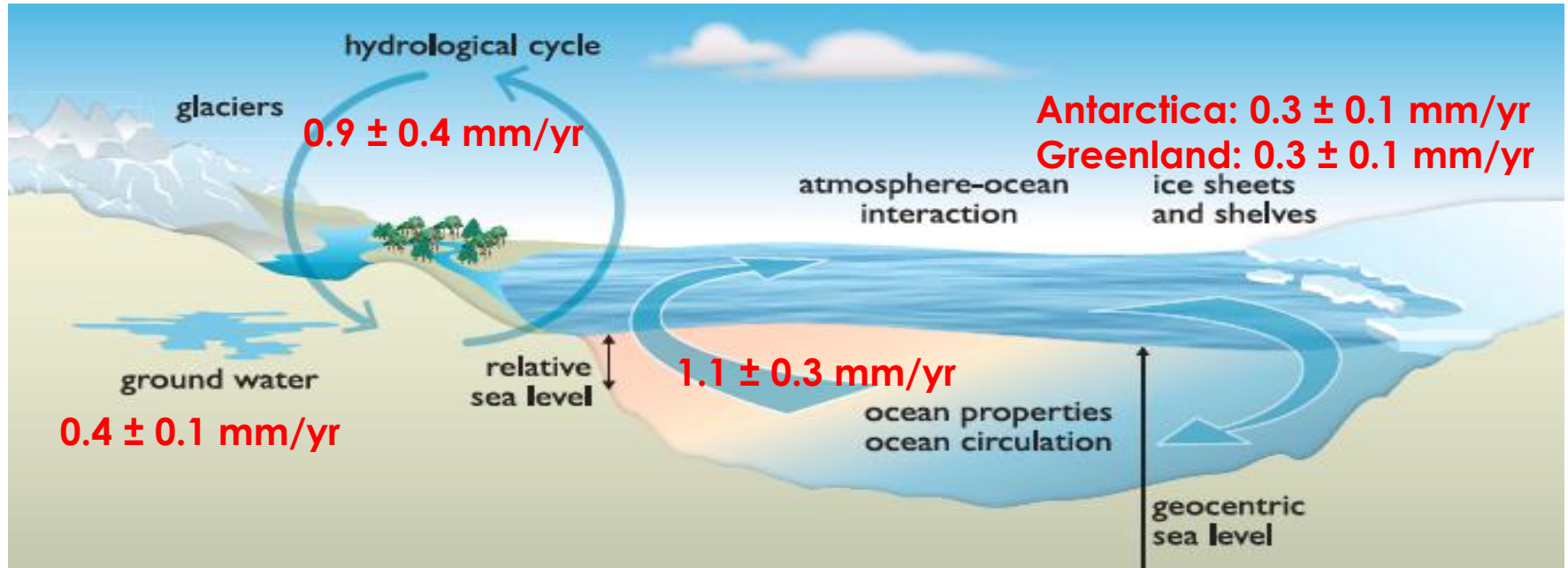
Is it hot in here or is it just me?

Theoretically, records will always be broken, but the time between record events should increase.

Climate change is causing just the opposite:

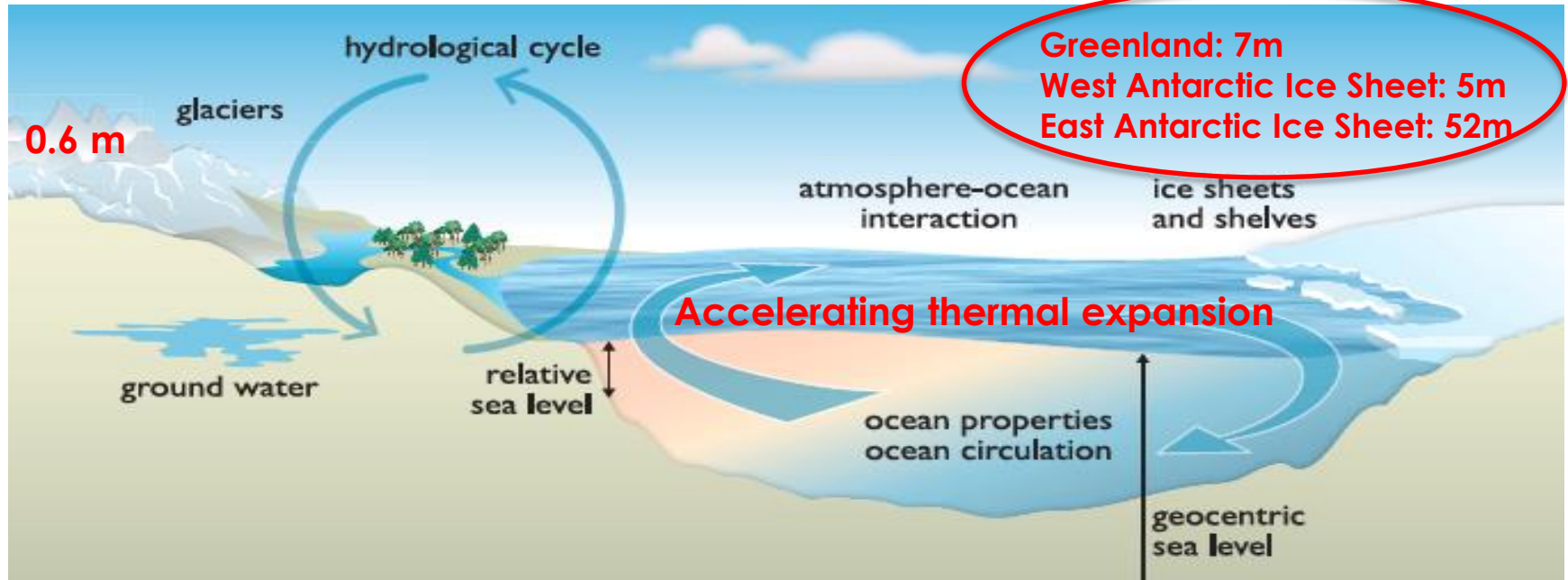
- 15 of the last 17 years have each been the “warmest year on record”.
 - April 2016 became the warmest April on record across the planet.
 - April 2016 also was the 12th consecutive “record month” across the planet.
 - April 2016 crushed the April 2015 record by 0.5 °F
- July 2016 was the warmest month on record...EVER!

20th century contributors to sea level rise



Thermal expansion of ocean water and glacier melt has been the biggest contributor to global mean sea level rise (GMSL).

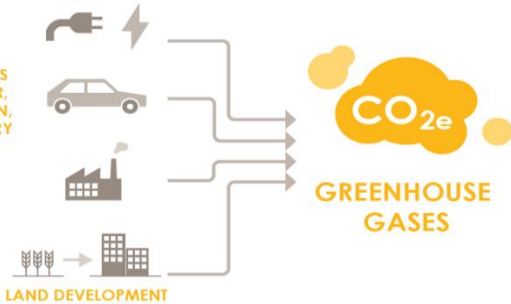
Potential 21st century contributors to GMSL rise



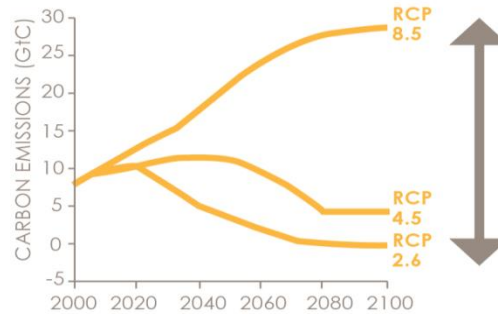
Ice sheet melt and the ice-sheet “finger print is potentially the biggest contributor in 21st century.

FUTURE CONDITIONS DEPEND ON OUR ACTIONS TODAY

FUEL SOURCES FOR POWER, TRANSPORTATION, & INDUSTRY



TODAY'S CHOICES



EMISSION SCENARIOS

The more greenhouse gases in the atmosphere...

MORE HOT DAYS



INCREASED EXTREME PRECIPITATION



GREATER AMOUNTS OF SEA LEVEL RISE



FUTURE IMPACTS

For full report, see climateready.boston.gov/findings

WHAT'S IN
STORE FOR
BOSTON'S
CLIMATE?

CLIMATE RISK FACTORS



**Sea Level
Rise**



Coastal Storms

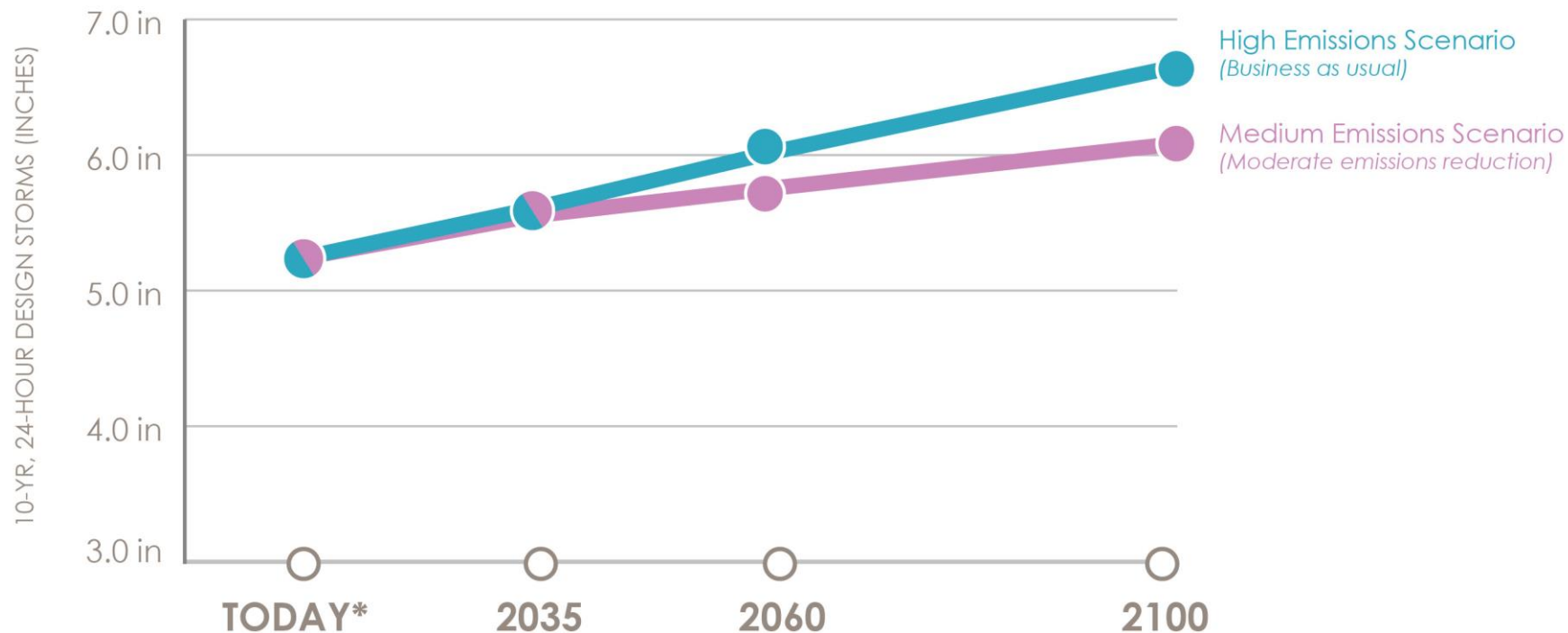


**Extreme
Precipitation**



**Extreme
Temperatures**

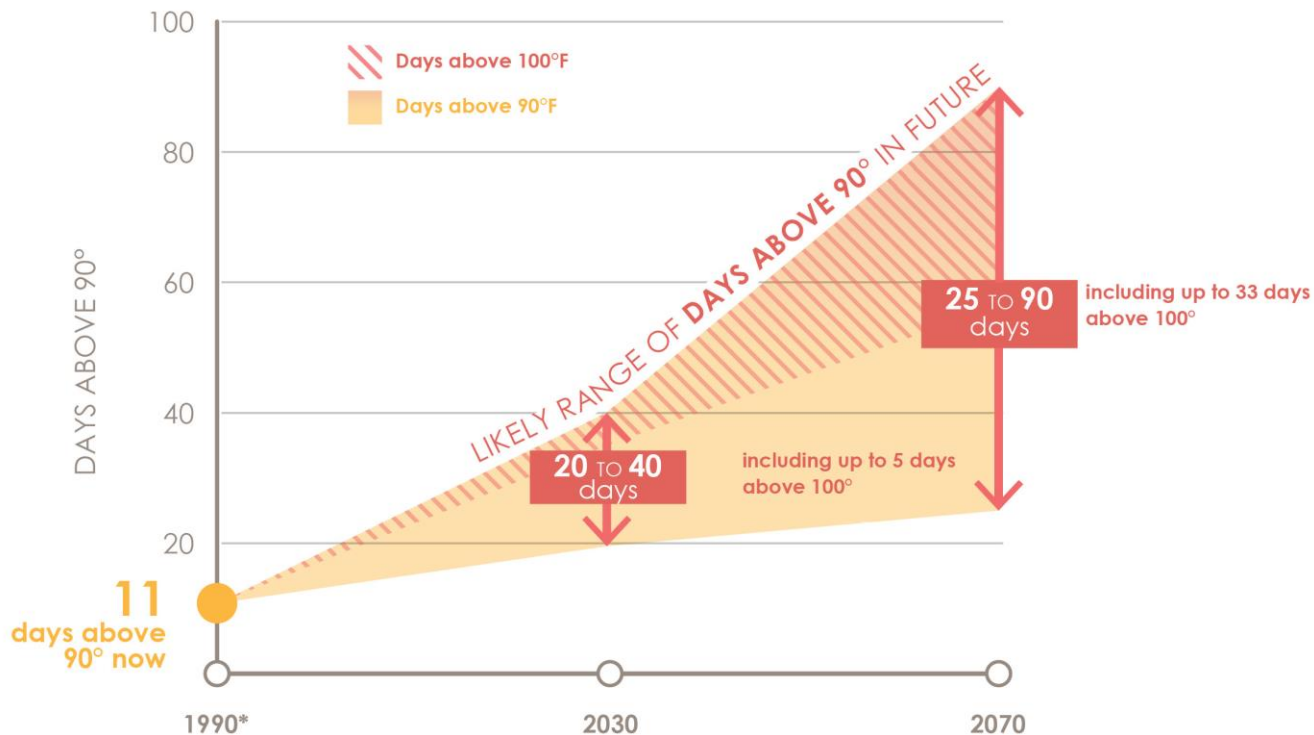
RAINFALL FROM STORMS WILL INCREASE



* "Today" baseline represents historical average from 1948-2012
Confidence intervals are not available for these projections but are likely large, so these numbers should be considered as the middle of a large range

Data Source:
Boston Water & Sewer Commission

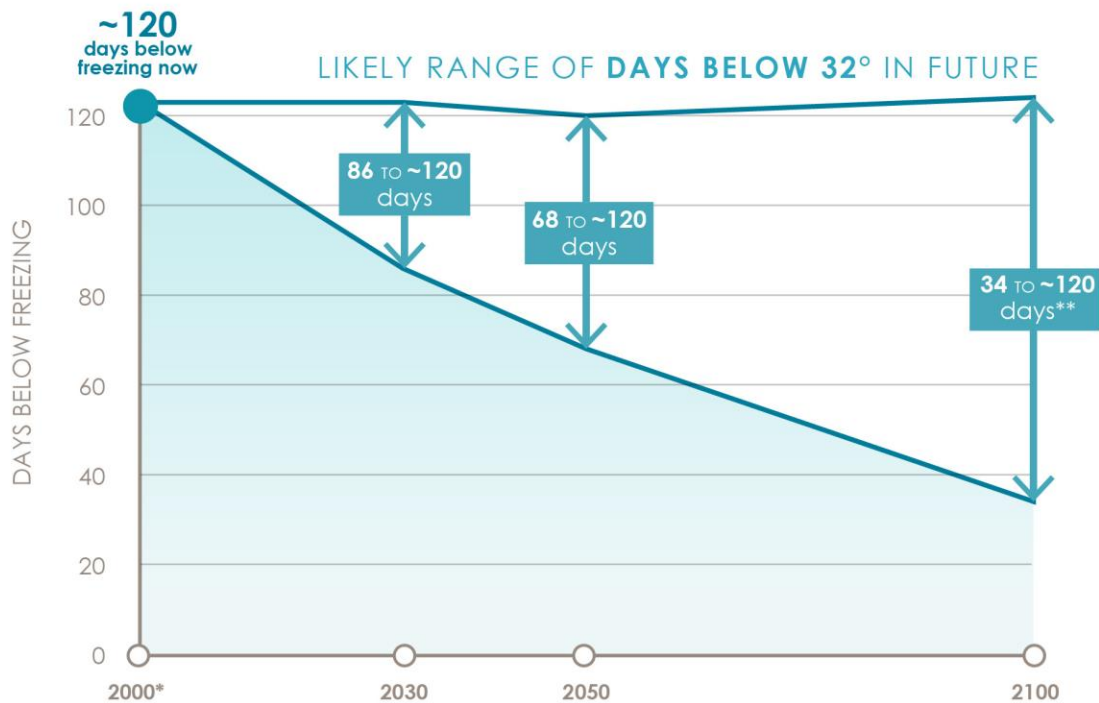
THE NUMBER OF VERY HOT DAYS WILL INCREASE



* Baseline represents historical average from 1971-2000

Upper values from high emissions scenario. Lower values from low emissions scenario.

THE NUMBER OF VERY COLD DAYS MAY DECREASE



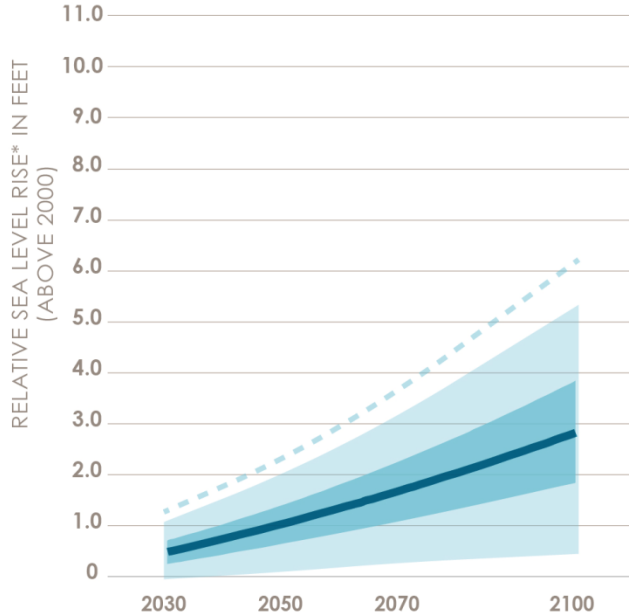
* Baseline represents historical average from 1981-2010

** Upper values from high emissions scenario. Lower values from low emissions scenario.

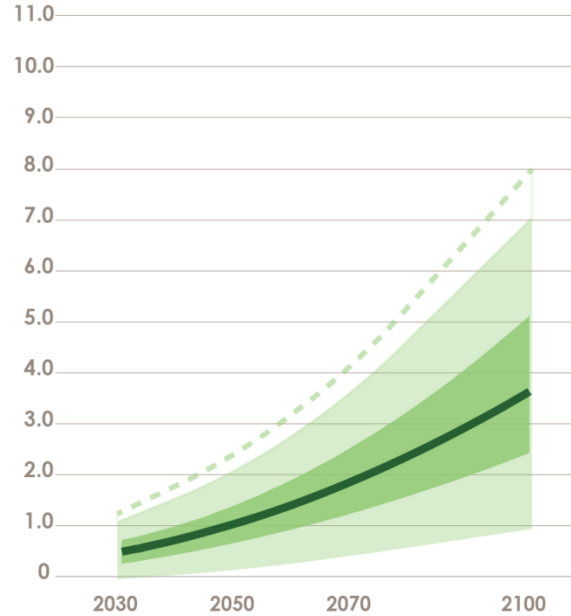
Data source: Houser et al 2015

GREENHOUSE GAS EMISSIONS REDUCTIONS IMPACT FUTURE SEA LEVELS IN BOSTON

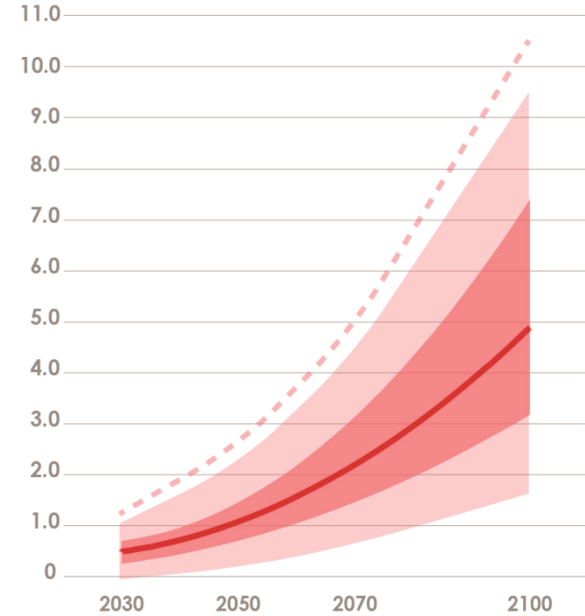
LOW EMISSIONS SCENARIO (MAJOR EMISSIONS REDUCTION)



MEDIUM EMISSIONS SCENARIO (MODERATE EMISSIONS REDUCTION)

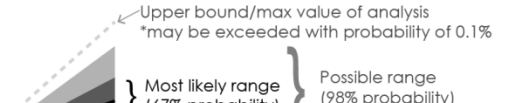


HIGH EMISSIONS SCENARIO (BUSINESS AS USUAL)



* Relative sea level rise is the change in sea level resulting from a combination of increases in ocean height and decreases in land surface elevation ("subsidence").

LEGEND



THAT'S IT IN A NUTSHELL!

QUESTIONS?