

Adapting to the effects of Climate Change Through Regional Resilience

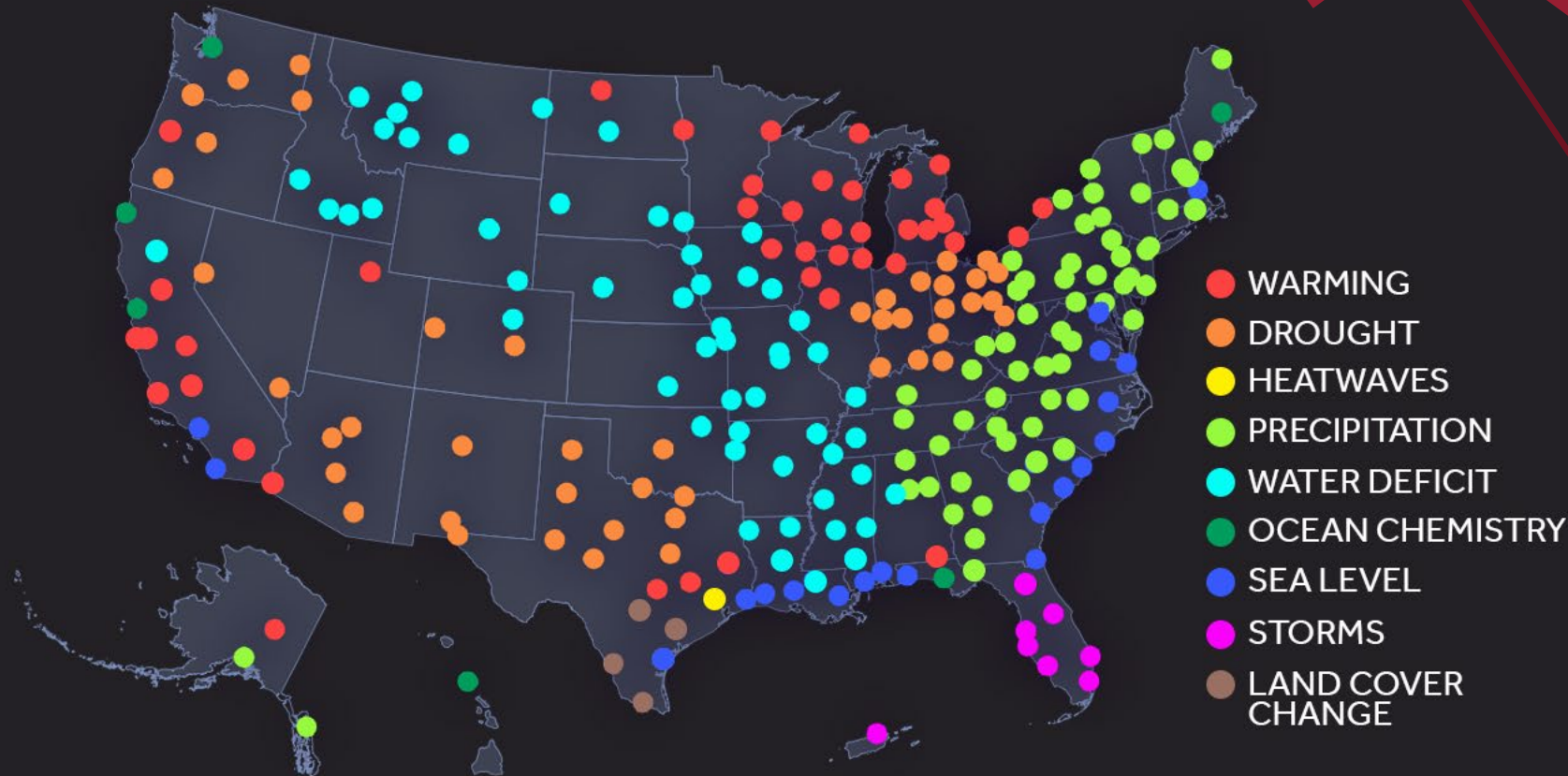
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UNITED STATES TOP CLIMATE HAZARDS IN 2050



2022

Produced: 2/20/2019. Source: Mora et al. 2018. Projected hazards under RCP 8.5. Climate Central removed sea level & ocean impacts at locations with fewer than 0.1% structures exposed to annual flooding in 2050 under RCP 8.5, using 95th percentile sea level projections from Kopp et al. 2017.

Agenda



Definitions

What is happening and why?

What is the region doing?



Definitions

Climate Change- long-term changes in the average weather of a region

Weather- short term atmospheric conditions

Resiliency - the ability to adapt and thrive despite changing conditions

Flooding – an instance where water pools somewhere it’s not supposed to be

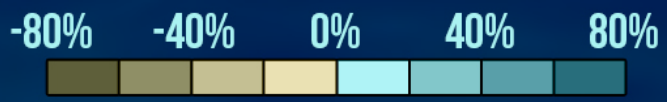
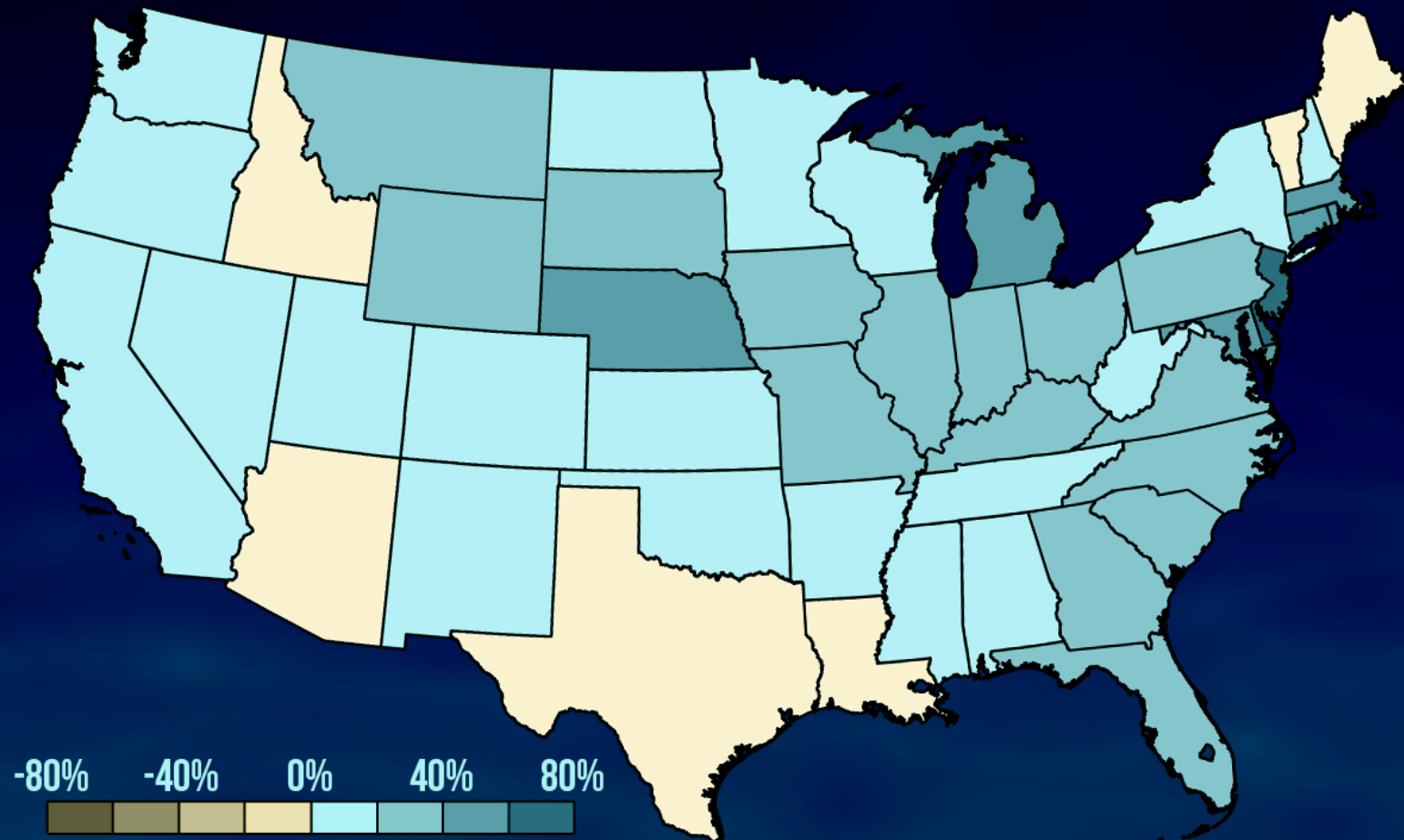
Hazard Mitigation- reducing the risk of property and people damage



Why so “extreme”? More variation, more intense

MORE INLAND FLOODING

Projected change in heavy runoff by 2050



Index based on runoff volume exceeding 95th percentile of a 1990-2010 baseline
Source: Climate Central States at Risk report



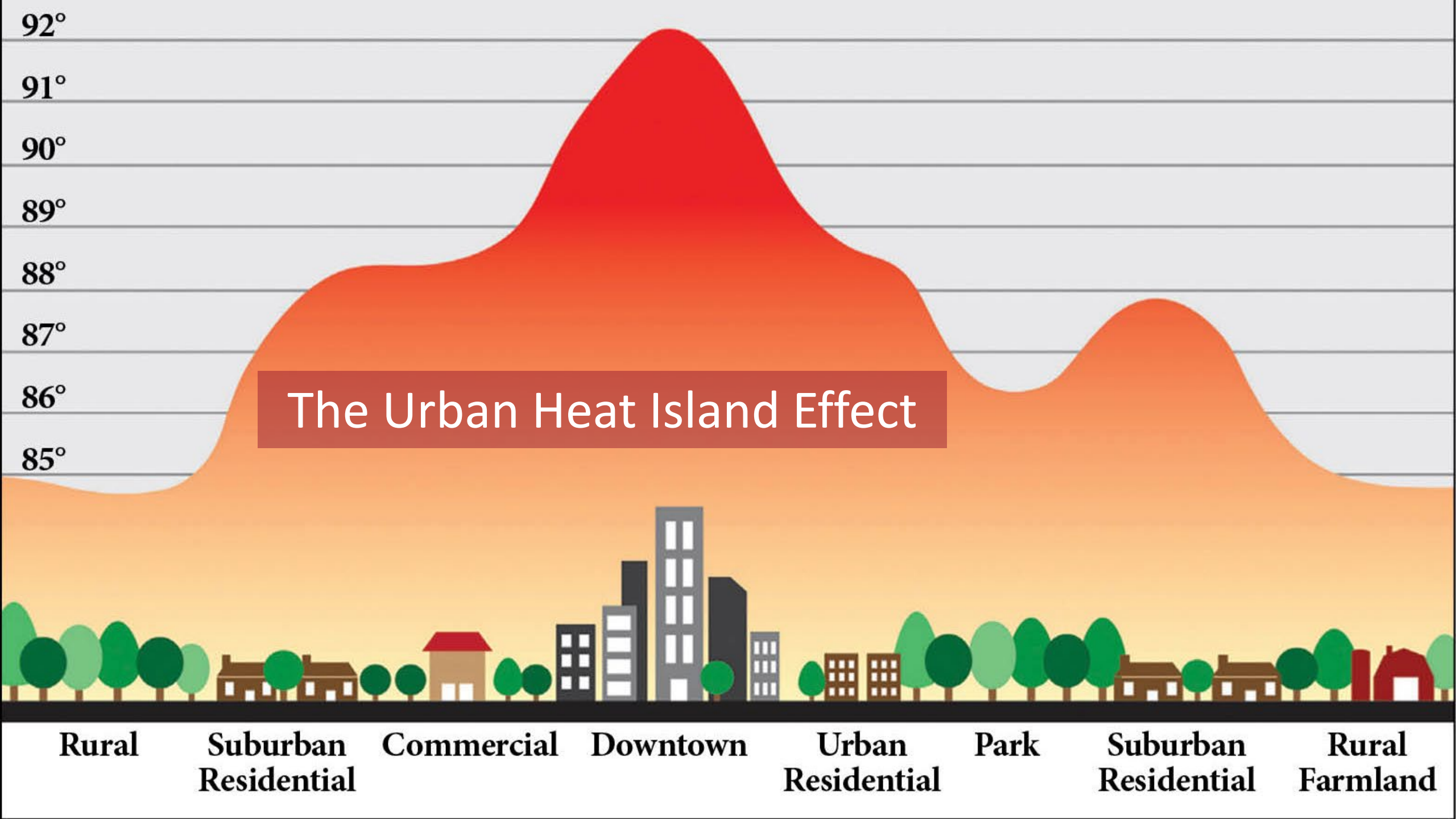
The sky is falling...

Bomb cyclones

Microbursts

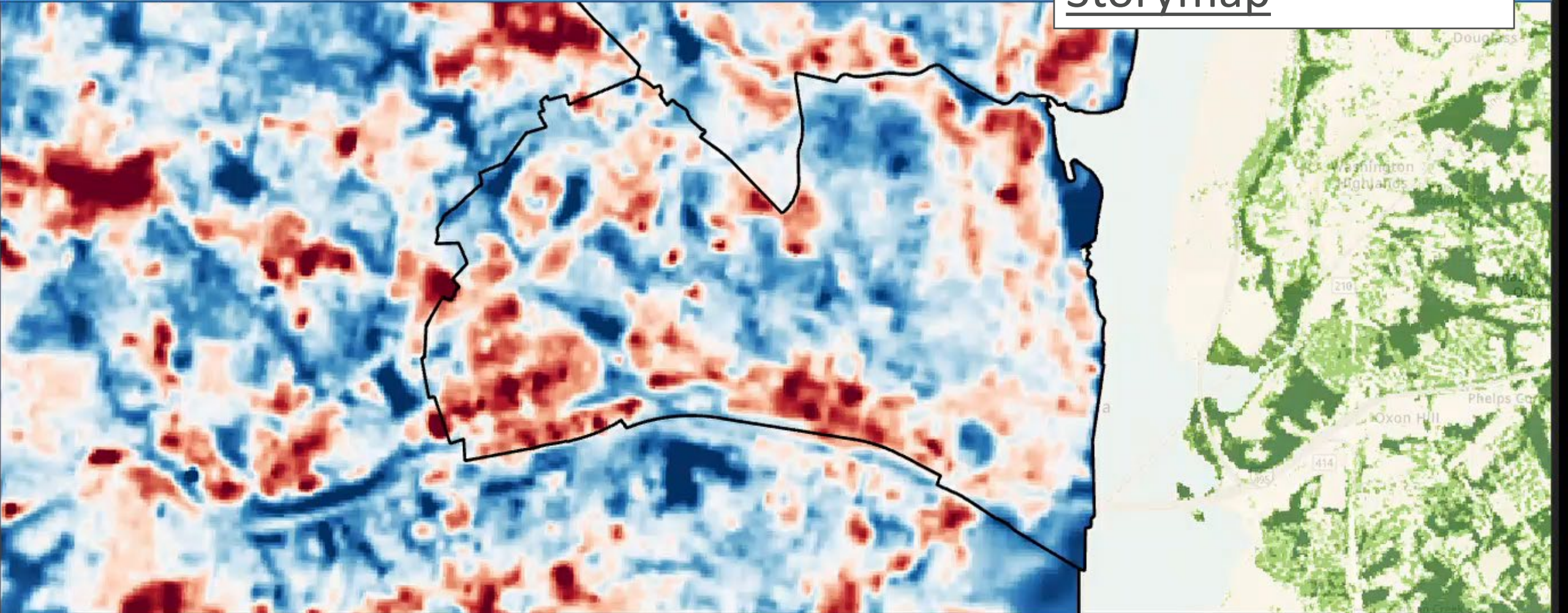
Rain bombs



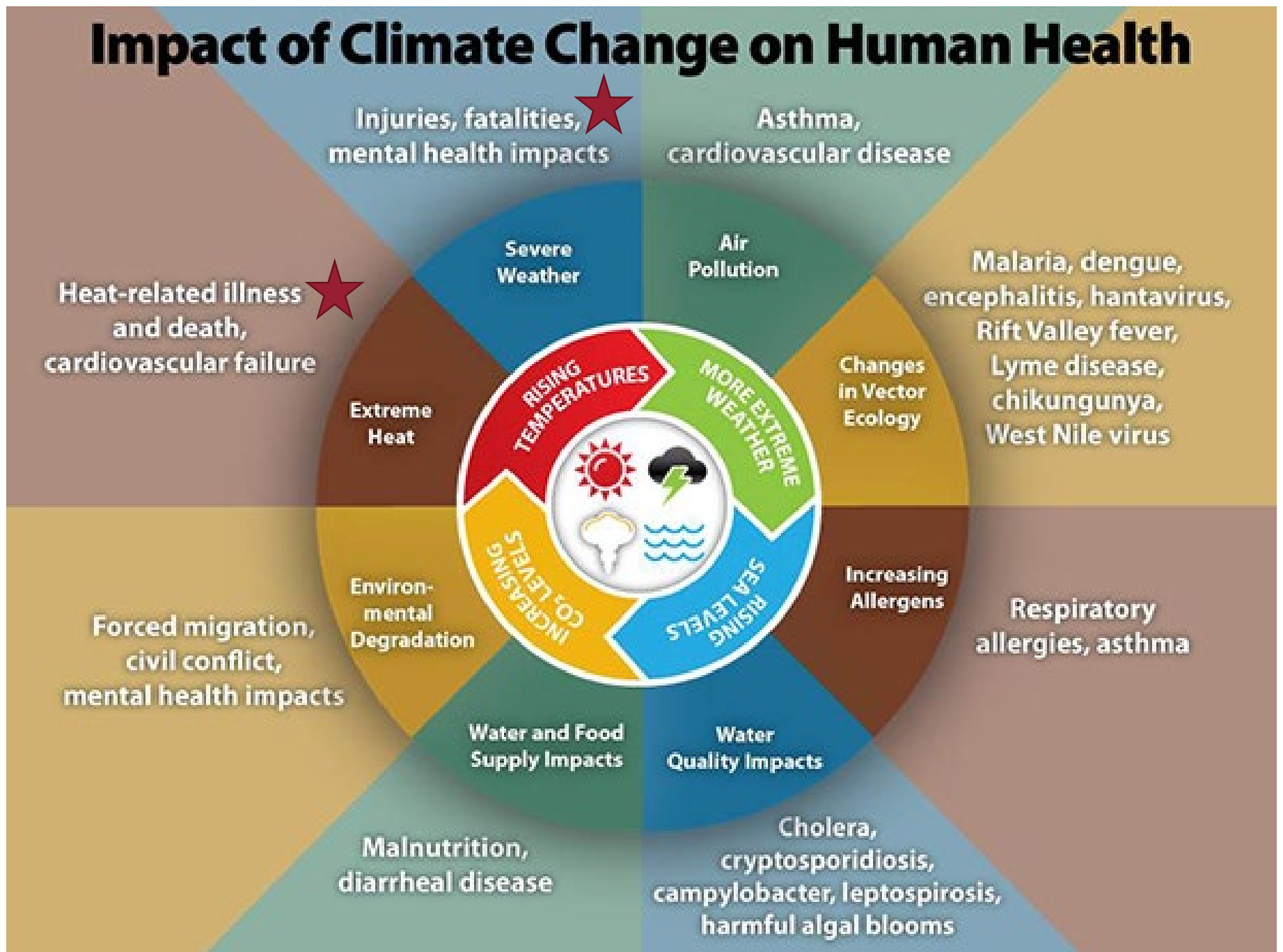




Heat Islands in Northern Virginia: Storymap



Impact of Climate Change on Human Health



Why do we care?

Agenda



Definitions

What is happening and why?

What is the region doing?

Federal, State and Local Programs

- HMP- Hazard Mitigation Plan
- FEMA- Federal Emergency Management Agency
- VDEM- Virginia Department of Emergency Management
- NFIP — National Flood Insurance Program
- VACRMP- Virginia Coastal Resilience Master Plan
- Resilient Fairfax — Climate Projections Report

Most severe:

Extreme heat, heavy precipitation and inland flooding



Just 1 inch of water
can cause **\$25,000**
of damage to
your home.



FEMA NATIONAL FLOOD INSURANCE PROGRAM

Hazard Mitigation Plan- Flooding



Increase capacities of stormwater systems.

Identify infrastructure that should be elevated or relocated to avoid future inundation.

Continue acquisition, elevation, and relocation projects for property owners.

“Flood-proof” mechanical systems and/or components of industrial and commercial structures.

Update flood hazard mapping



Hazard Mitigation Plan- Extreme Heat

Increase urban tree cover.

Install cool roofs to reduce negative health impacts from heat.

Implement urban designs that facilitate air movement and alleviate heat.

Increase standards for insulation of buildings and homes.

Increase preparedness education about heat-related health issues for healthcare providers and the public.



#BeatTheHeat

Stay in the shade or indoors during extreme heat!



Flash Flood Warning and Alerts

Regional Rain Gauge Network

Community Flood Preparedness Fund



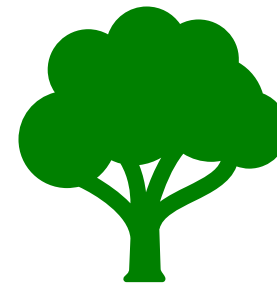
Shifting to “smart” planning



What contributes to heat and runoff?



What cools the air and helps absorb water?





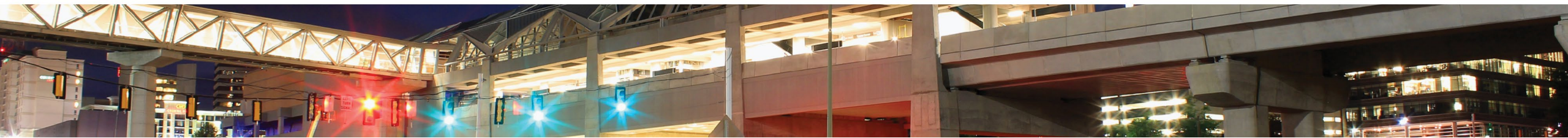
What should I take away from this?

We are unique, the issues we face are not.

We may not have the answer, but we are getting less wrong

Warmer=Weirder





Thank you!

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