



Resilient Together: Let's Talk About Climate!

**(and...Weather)
(and ...Resilience)
(and...how these affect our
Senior Population)**

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The Center @ Belvedere

Quick Intro

Kristel Riddervold **Director, Office of Sustainability**



- Been in the area since late 1980s
- BA & Masters - Environmental Sciences
- 8 years - Environmental Consulting
- 23+ years - City of Charlottesville

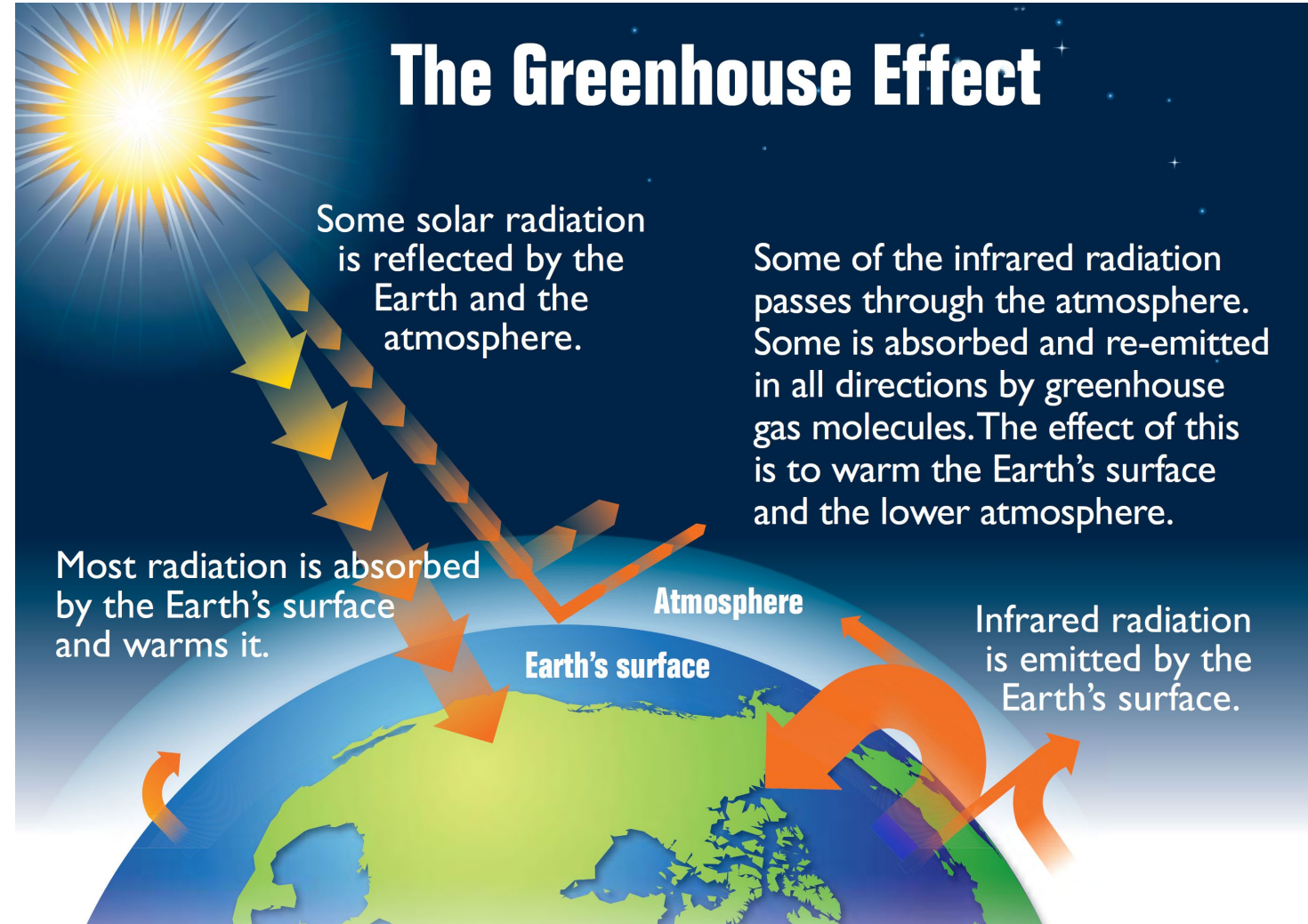
Climate vs. Weather

- Weather describes **short-term atmospheric conditions** such as temperature, rainfall, wind, and humidity that change hour by hour or day by day.
- Climate, in contrast, represents **long-term averages and patterns** calculated over at least 30 years, defining what conditions are typical for a region.

Climate 101

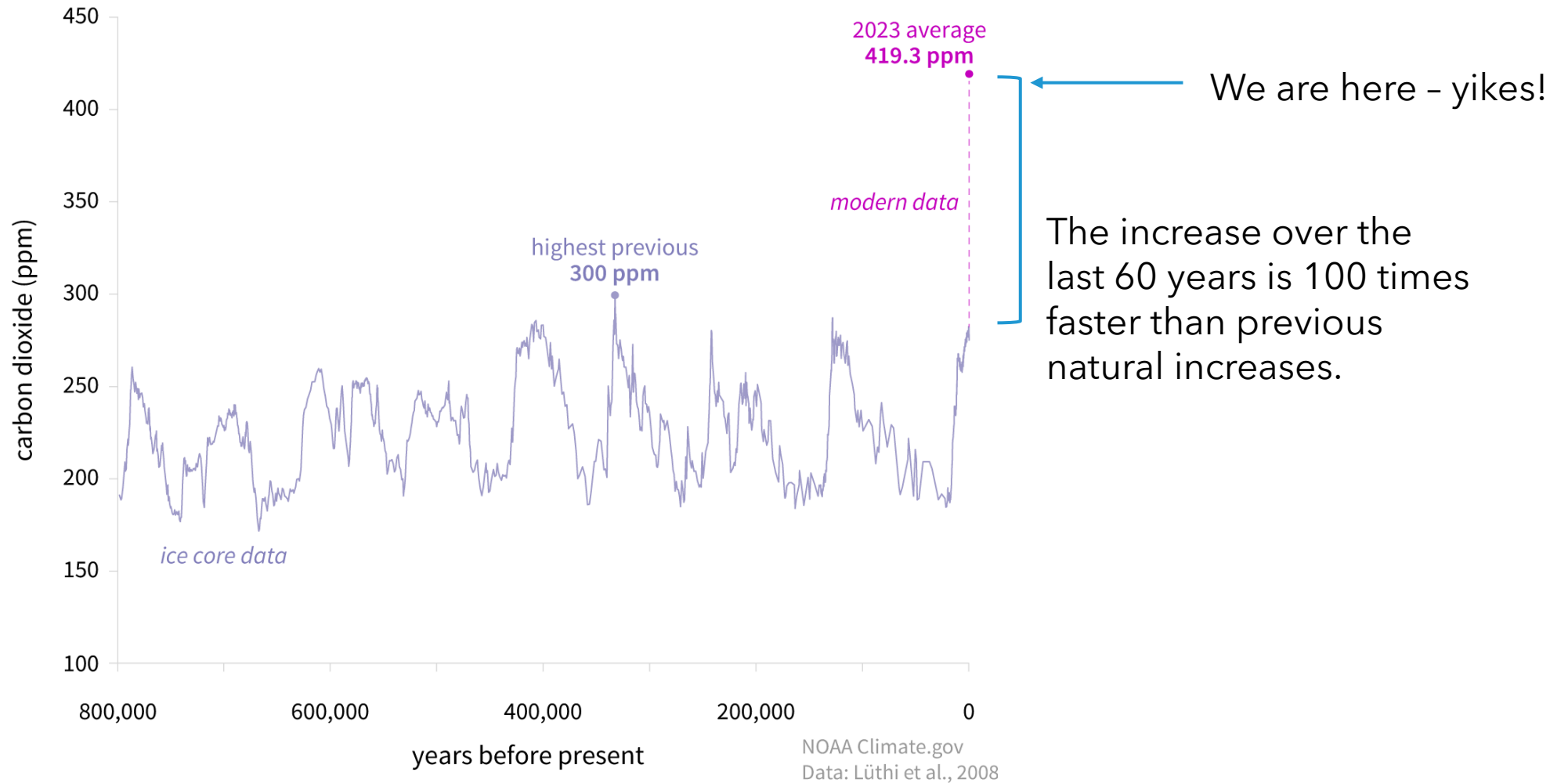
Climate Change refers to **long-term** shifts in global weather temperatures and weather patterns due to average warming of the earth's surface temperature.

- Greenhouse gases include carbon dioxide (CO₂), methane, nitrous oxide, and others.
- As greenhouse gases in the atmosphere increase, the atmosphere traps more heat from the sun.



Why Act: Global Context

CARBON DIOXIDE OVER 800,000 YEARS



Sustainability+

Sustainability

The ability of our community to meet the needs of the present without compromising the ability of future generations to meet their own needs.

Mitigation

Reducing sources and actions that contribute to climate change, for example reducing GHG emissions.

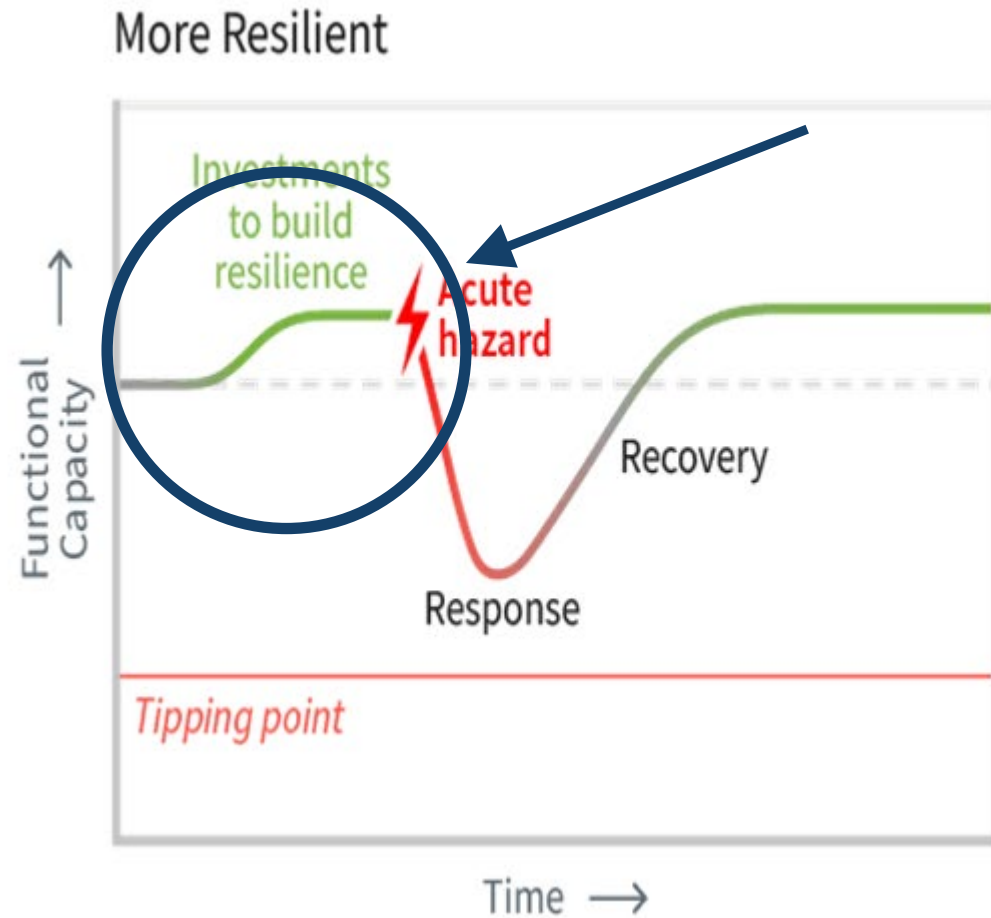
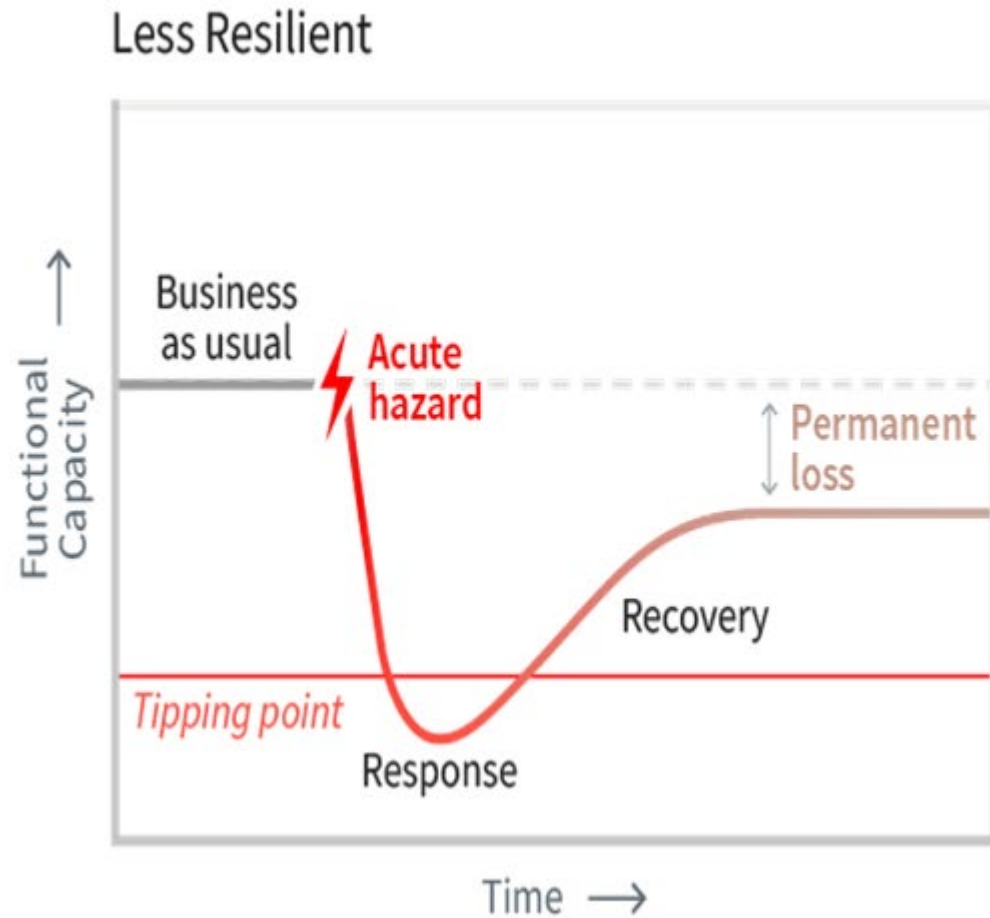
Adaptation

Changing human systems and behaviors to better withstand the effects of the changing climate

Resilience

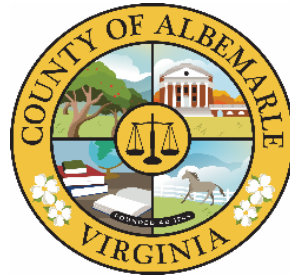
Strengthening community systems so that they can withstand climate driven shocks and stressors.

What does “Resilience” mean?



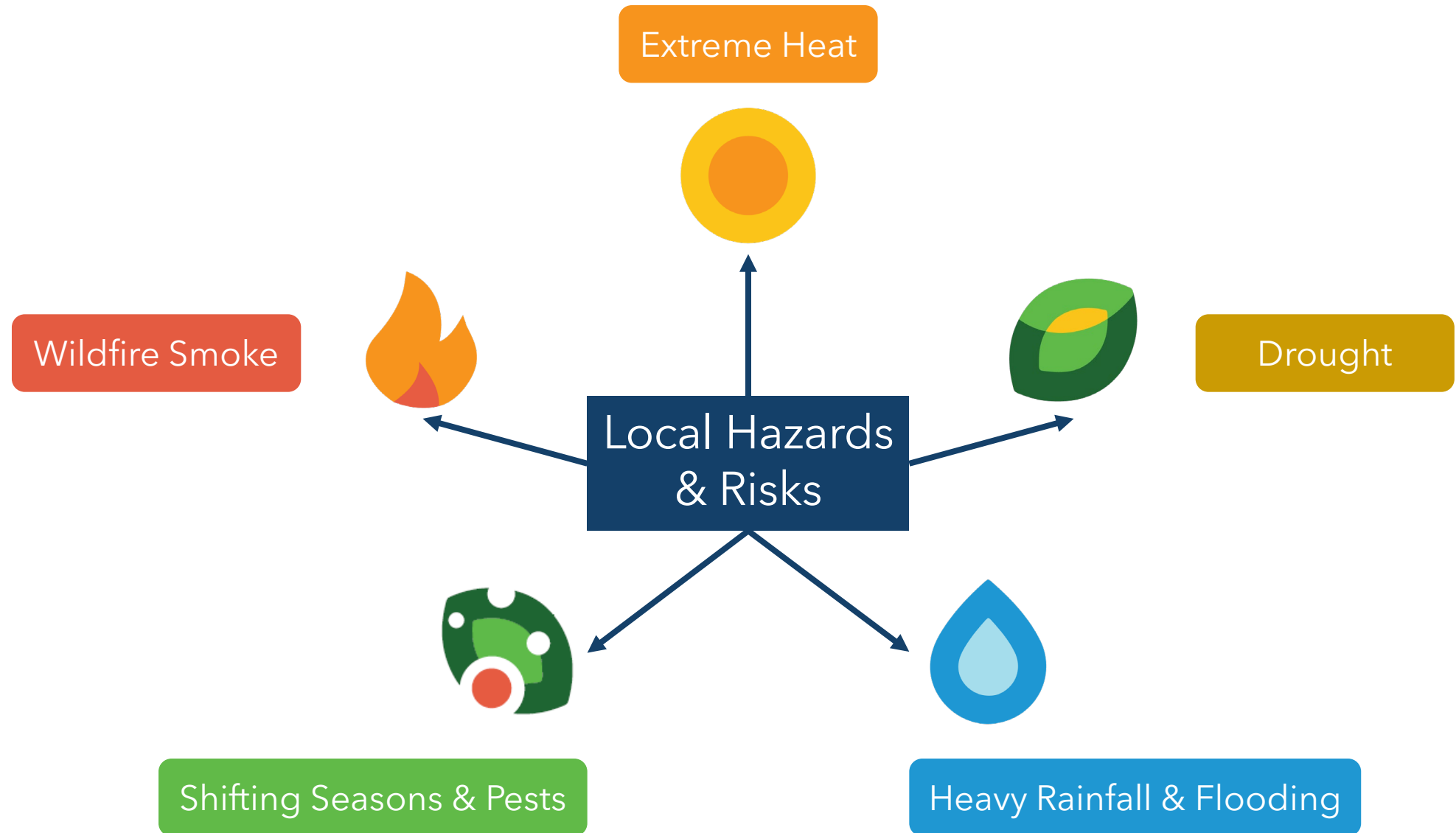
RESILIENT TOGETHER

One Climate, One Community



**Working together will result in
a more resilient community.**

Climate Hazards & Risks: Overview



Hazards & Risks: Extreme Heat

Number of Days per Year above 95°F

Current Climate

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

5 Days

 Observed 30 Year Average (1990-2020), Monticello Station

2050

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

25-35 Days

 Lower Emission Scenario (steep emission reductions)

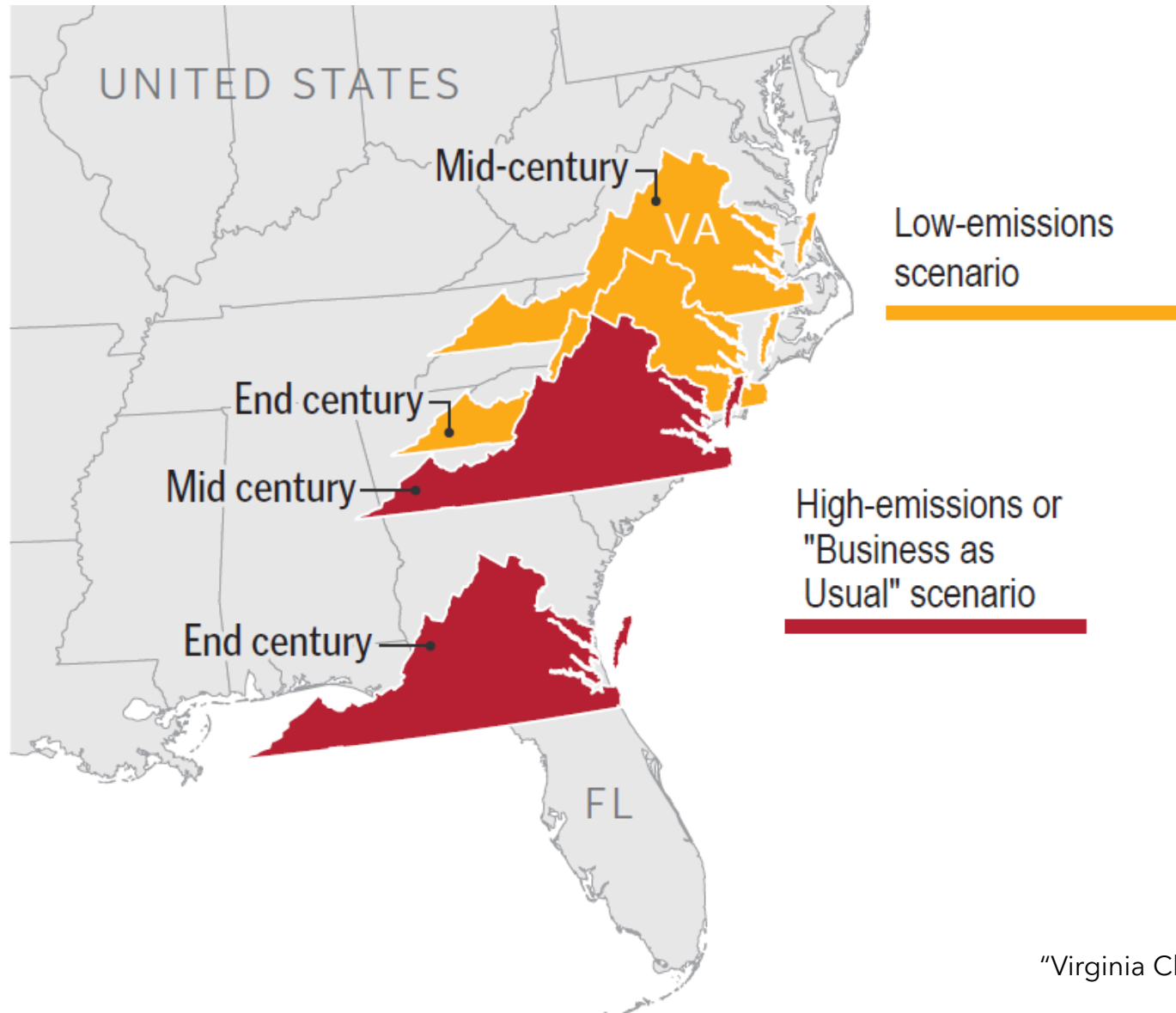
2075

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

32-56 Days

 Higher Emission Scenario (business as usual)

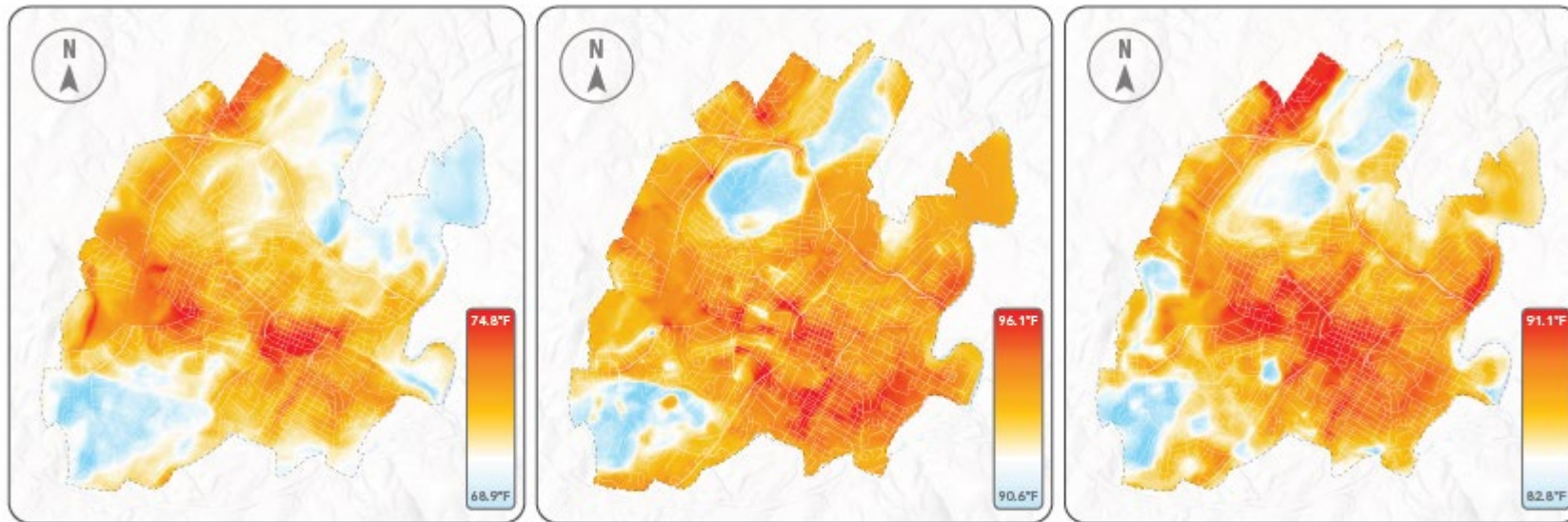
Hazards & Risks: Extreme Heat



"Virginia Climate Fever", *The Roanoke Times* 2014

Extreme Heat

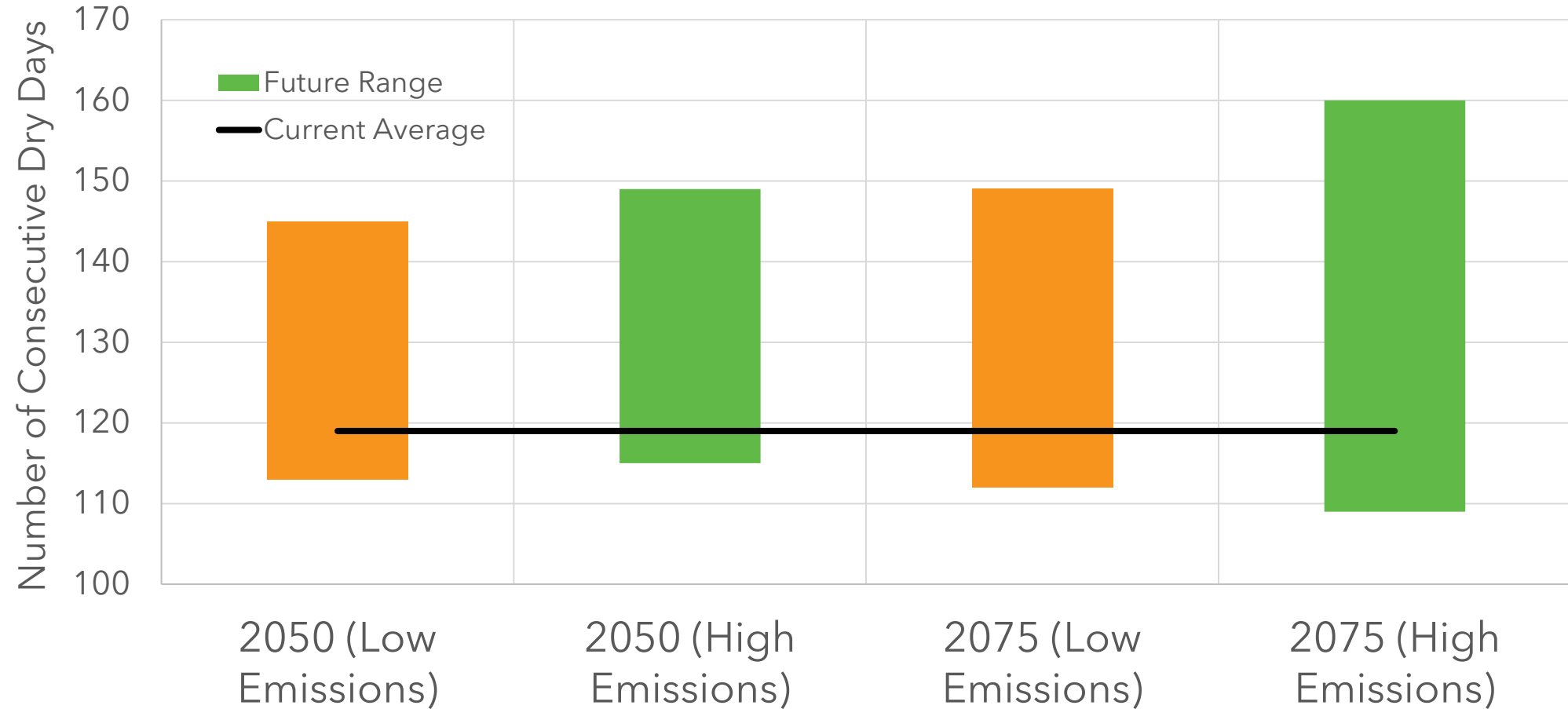
While heat alone poses a range of concerning threats, higher temperatures are also associated with an increase in air pollution, which affects the most economically and medically vulnerable residents of our communities , including children, the elderly, and those with pre-existing health conditions



Morning, afternoon, and evening area-wide models for distribution of near surface temperature (°F) in Charlottesville. Source: CAPA 2021 Heat Watch

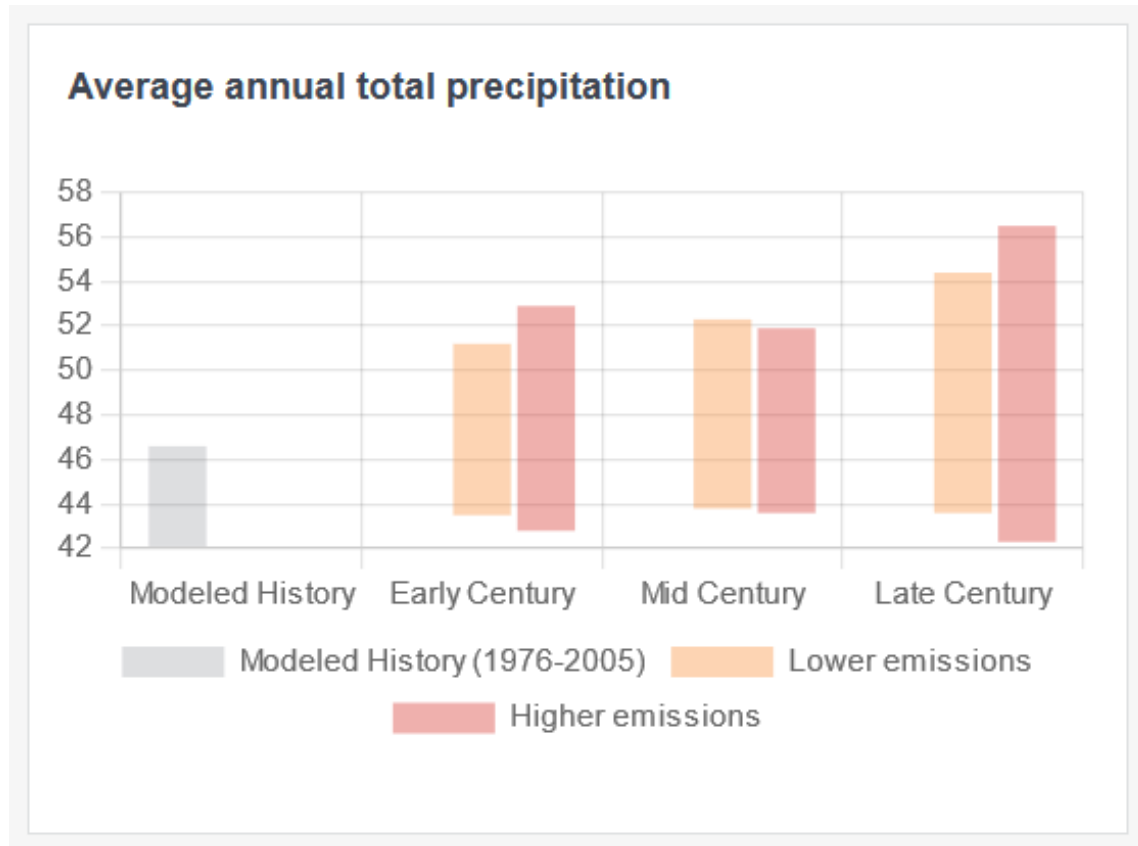
Hazards & Risks: Drought

Dry periods are predicted to increase



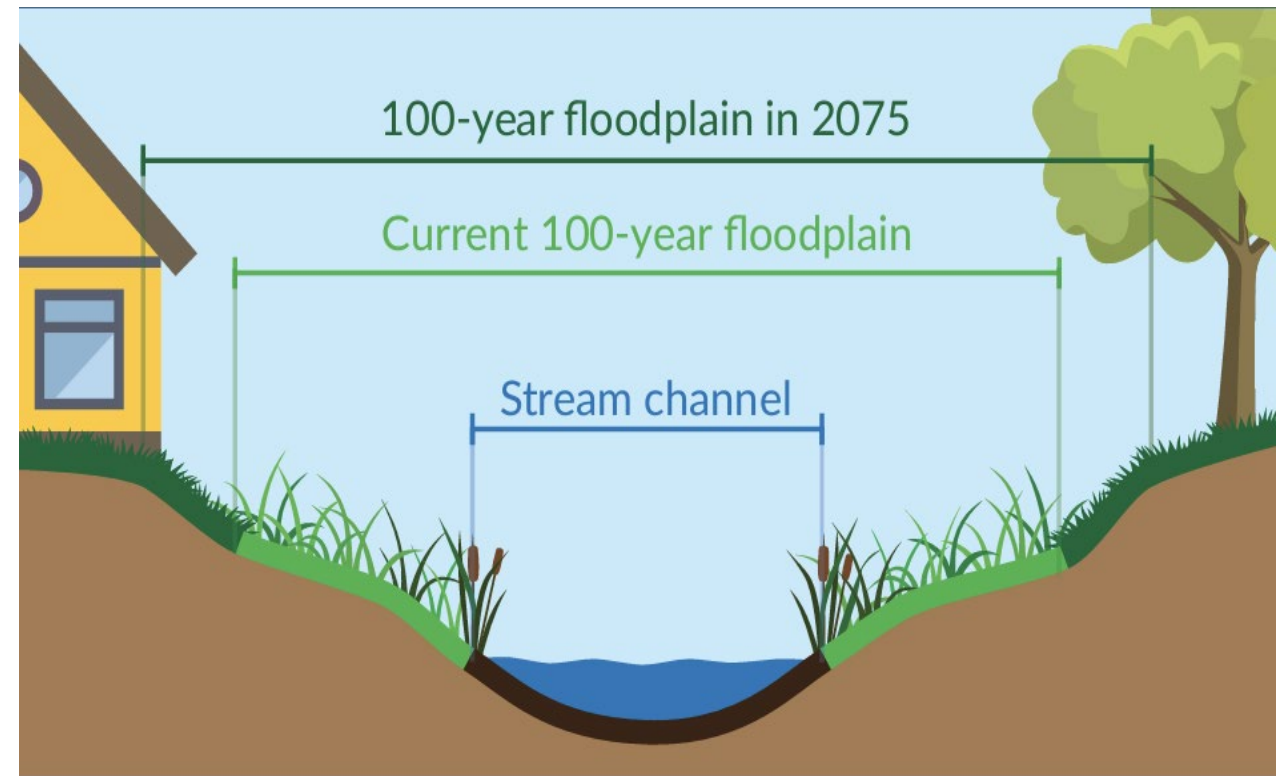
Hazards & Risks: Increased Flooding

Precipitation is increasing...



Data for Albemarle County, Climate Mapping for Resilience and Adaptation Tool (CMRA)

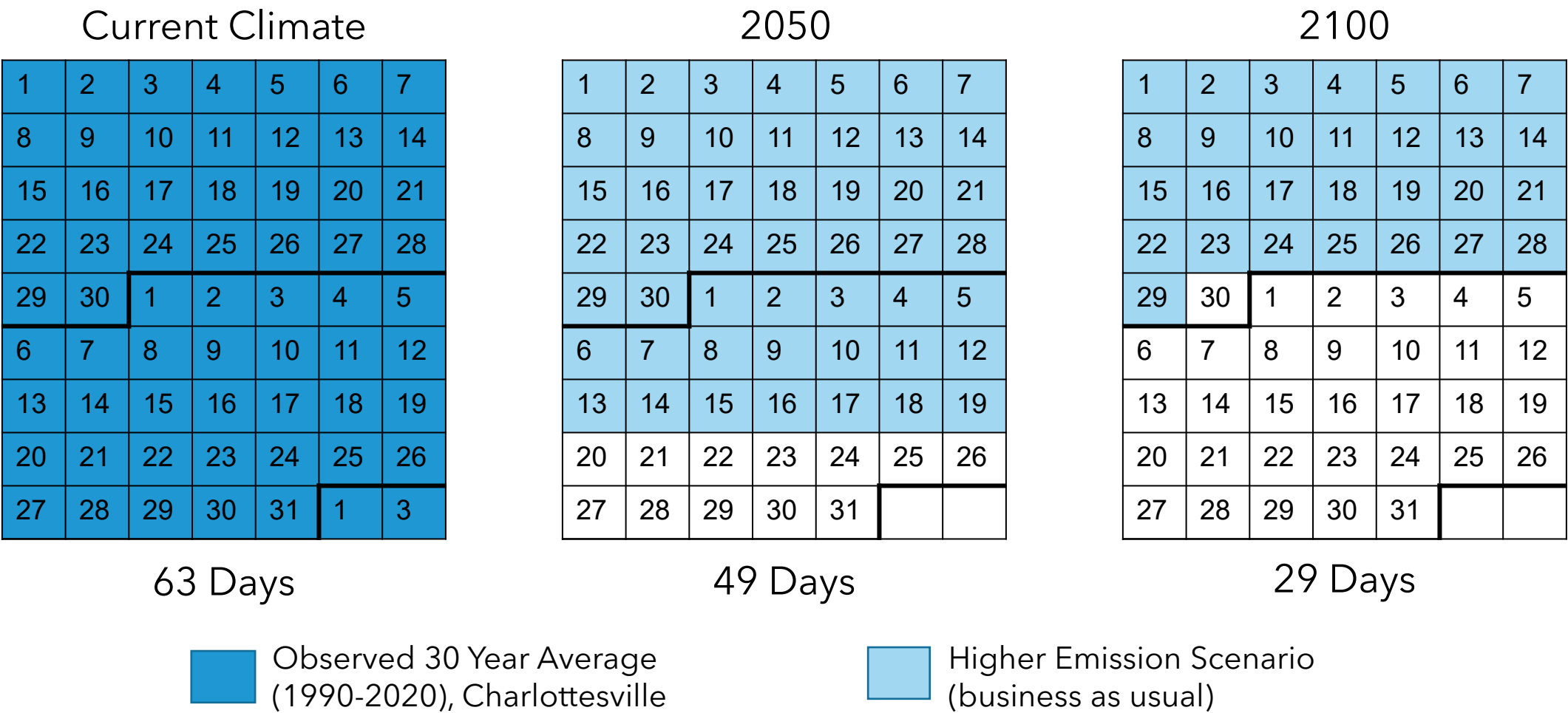
...and our floodplains are growing.



Note: Illustrative graphic; not an actual local stream channel

Hazards & Risks: Changing Seasons

Frost Days: Number of Days per Year with Minimum Temperature below 32°F



Hazards & Risks: Changing Seasons



Hazards & Risks: Wildfire Smoke

Allergies, respiratory issues spike from wildfire smoke in the air

Published: Jun. 5, 2023 at 6:09 PM EDT



CBS19 News 07/17/23

Air quality in Central Virginia impacted by wildfire smoke again

Monday, July 17th 2023, 1:36 PM EDT



NBC29 News 06/05/23

UNIVERSITY NEWS

Best Health Advice for Smoky Skies: Stay Inside and Wear a Mask When Outdoors

UVA Today 06/09/23



ABC13 News 06/29/23

How is our Senior Population involved?

- People over 60 are often more vulnerable to the effects of climate change due to a combination of physical and social factors.
- Older adults increasingly account for a larger share of our population
- Health Stressors (including mental health)
 - Air quality
 - Extreme heat
 - Exposure to pathogens and vector-borne diseases

How is our Senior Population involved?

- Greater numbers of older individuals face vulnerabilities and increased risk during weather events and due to climate change impacts
 - Chronic health conditions, aging immune systems and underlying conditions
 - Limited mobility and access
 - Social isolation
 - Gaps in health care workforce and caregivers
 - Gaps in communication systems
- Important considerations include age, underlying health conditions, economic resources, and location.

How can we enhance our resilience?

- Know your local climate risks
- Learn about local resources available for support
- Create an emergency plan
- Build a support network with family, friends, and neighbors for assistance
- Stock up on essentials supplies – including medications
- Participate in community programs

Think Globally, Act Locally

What Charlottesville is Doing on Climate



Strategies

Reduce

Building Efficiency

Transit/Bike/Walk

Waste Diversion



Switch

Renewable Energy

Building Electrification

Electric Vehicles



Drawdown

Land Use

Reforestation

Regenerative Ag



Buildings & Energy



- Solar on Bypass Fire Station and CATEC in 2025; working on strategy to get solar on CHS and Middle School
- Residential and Commercial Energy Efficiency & Renewable Energy incentives
- High Performance Building Standards

Transportation



- Electric School Buses & Electrification Transition Planning
- Transit Zero-Emissions Bus Transition
- EV Charging Infrastructure Grant Program
- Community EV Charging Infrastructure Study
- E-bike Incentive Program
- Micromobility
- Bicycle & Pedestrian Infrastructure Improvements

Other Initiatives



- Community Energy Resource Hub
- Resilient Together (climate adaptation)
- LED Streetlight Conversion
- Urban Forest Management Plan
- Annual Tree Planting & Invasive Species Mgmt
- Landscape Equipment Electrification Pilot
- Composting Programs



Questions Comments Discussion