Community-Scale Climate Resilience

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Public-Private Partnership for Resilience Solutions

Accelerating adaptation + maximizing resilience

FERNLEAF INTERACTIVE

Private solutions firm

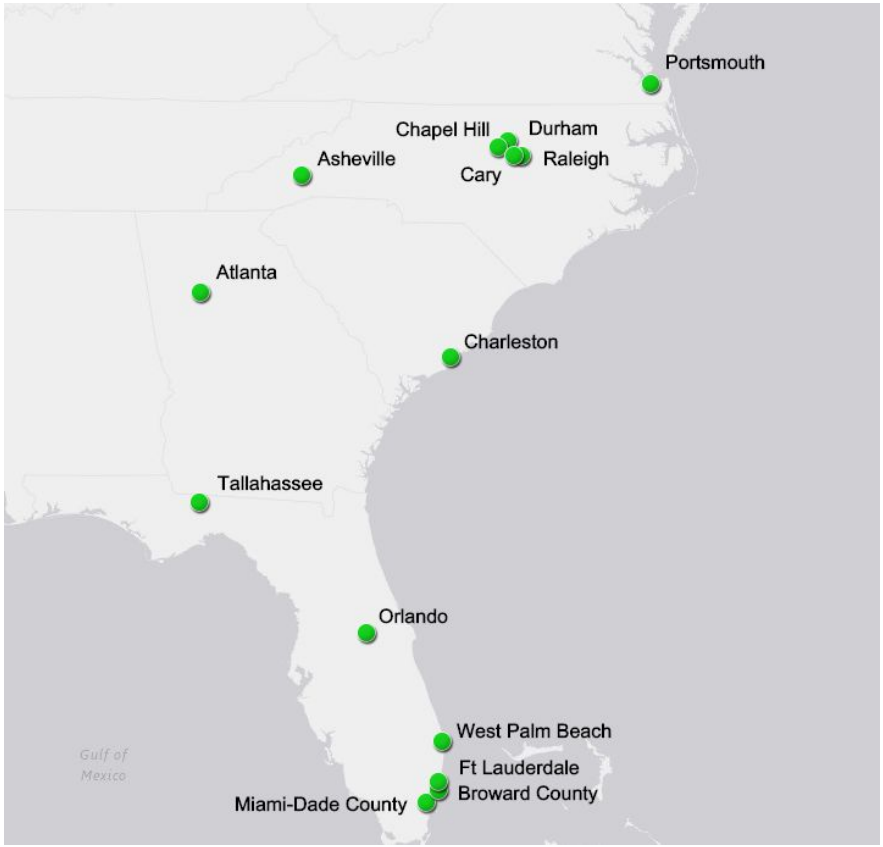
Analysis and tools

UNC Asheville | NEMAC National Environmental Modeling & Analysis Center

Applied research center

Decision support

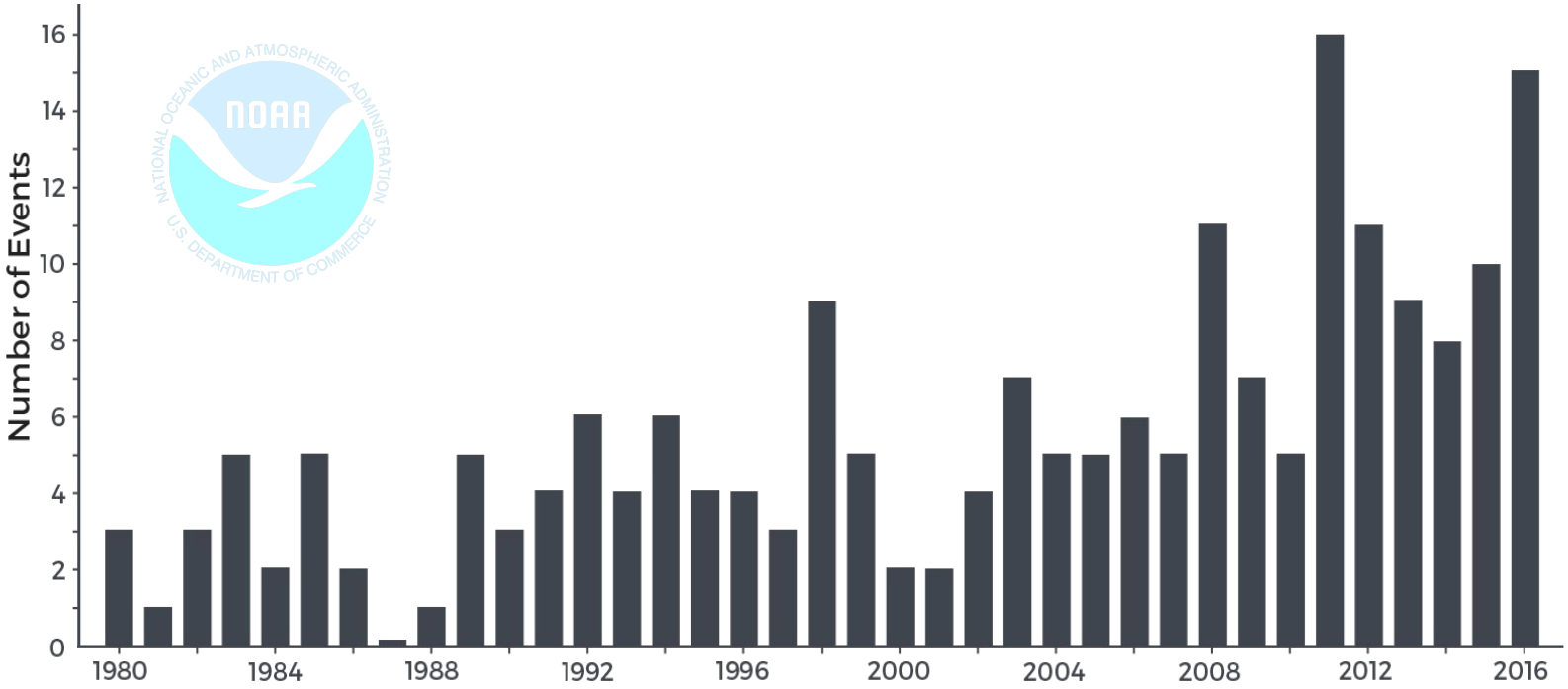
Where we're active



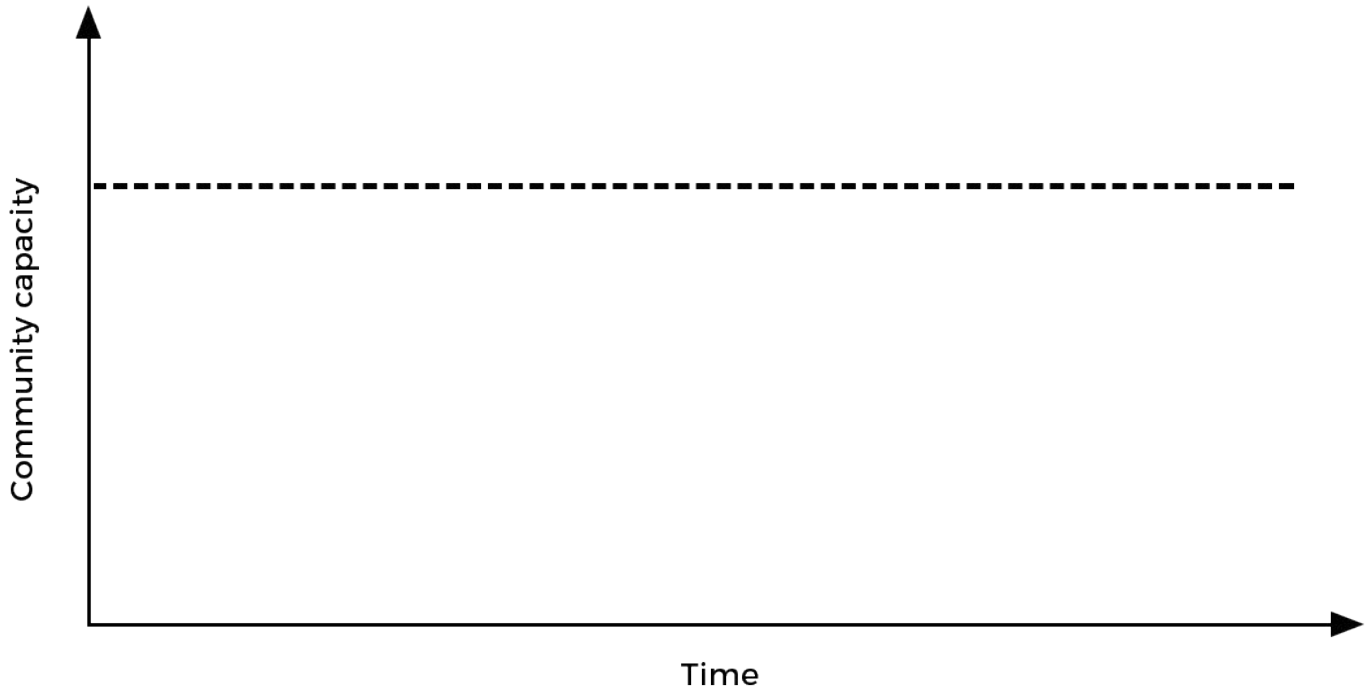
Changes in wildfire, flooding, climate, energy, population, economy, and other realities are stressing our communities, landscapes, and livelihoods.

Billion-dollar disaster events per year

Our risk is increasing, and we must own this problem at a local scale.



What is resilience?



Modified from Resilience Loss Recovery Curve, Source: White et al. (2015), p. 203, Adapted from model derived by M.E. Hynes, b. Ross and CARRI (2008), presented at the DHS University Summit, Washington, DC

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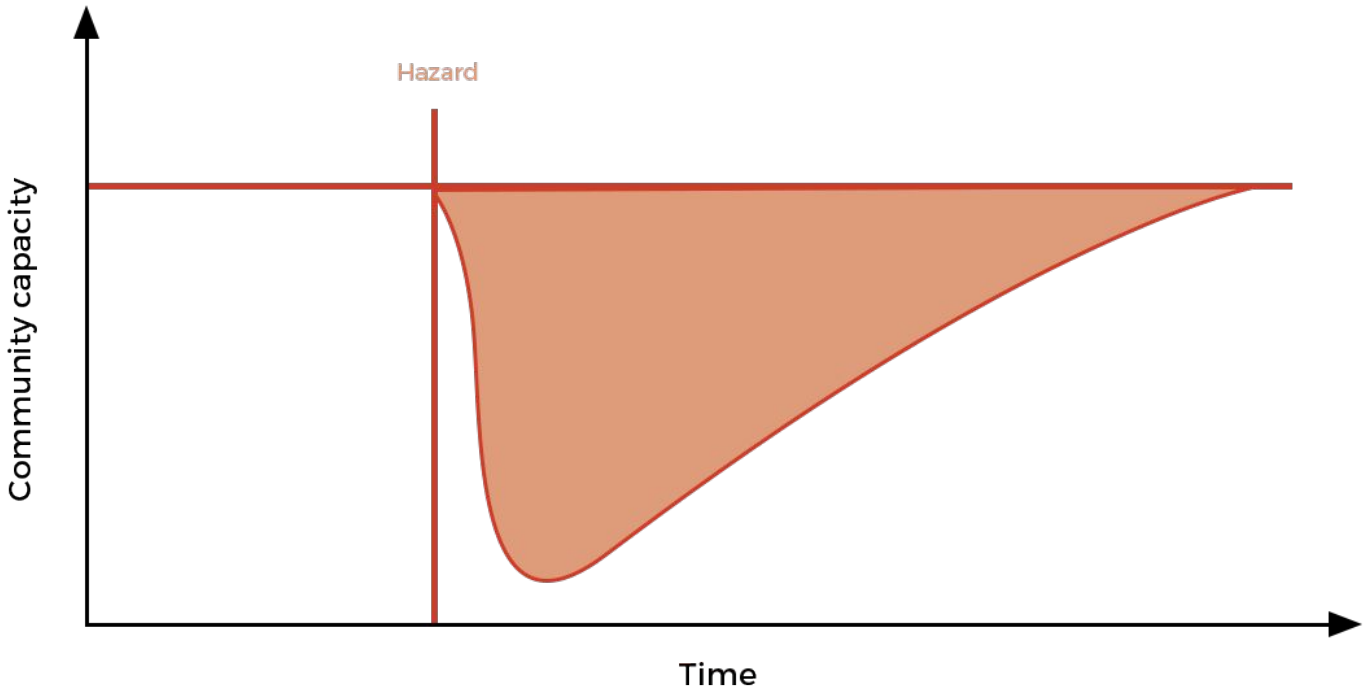

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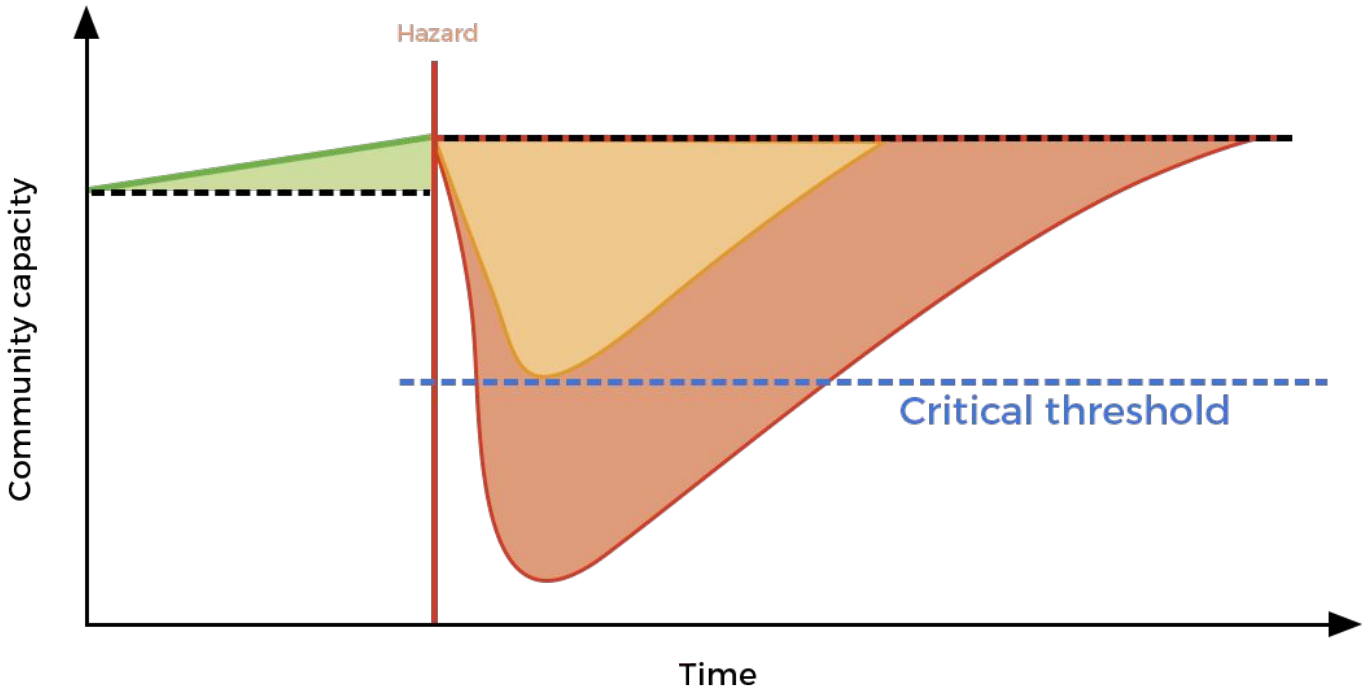

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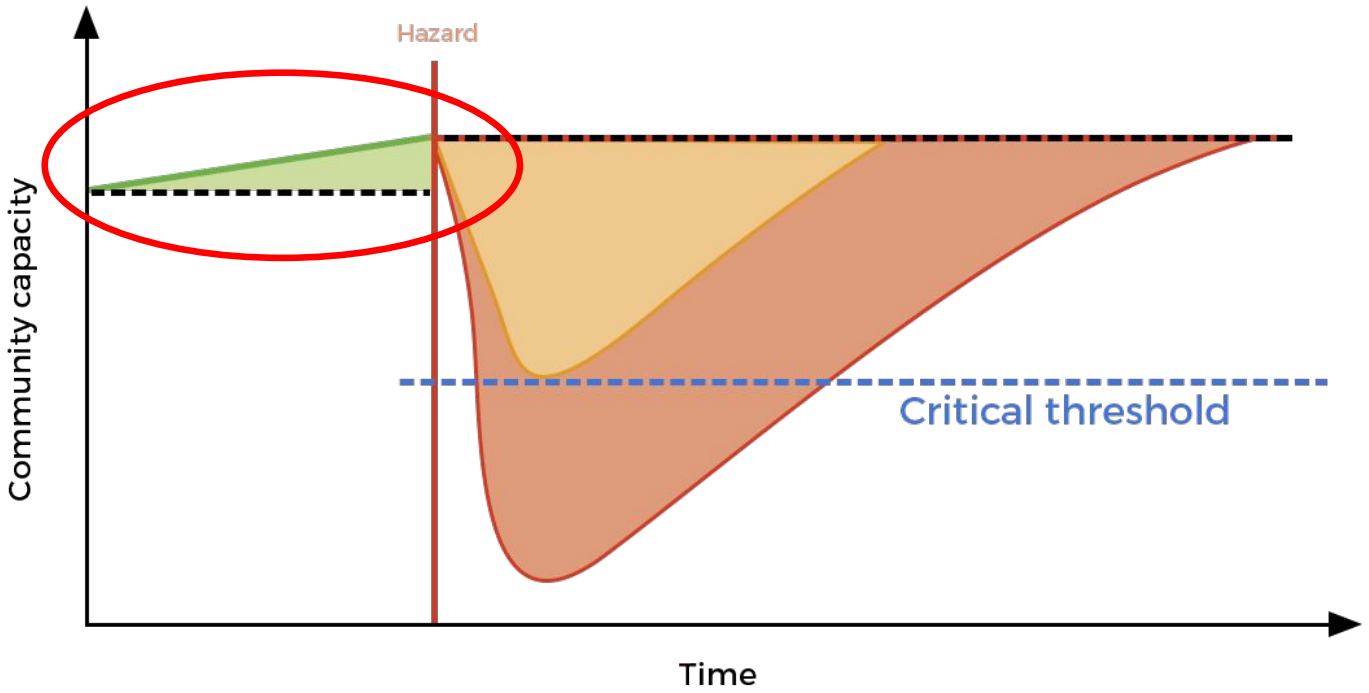

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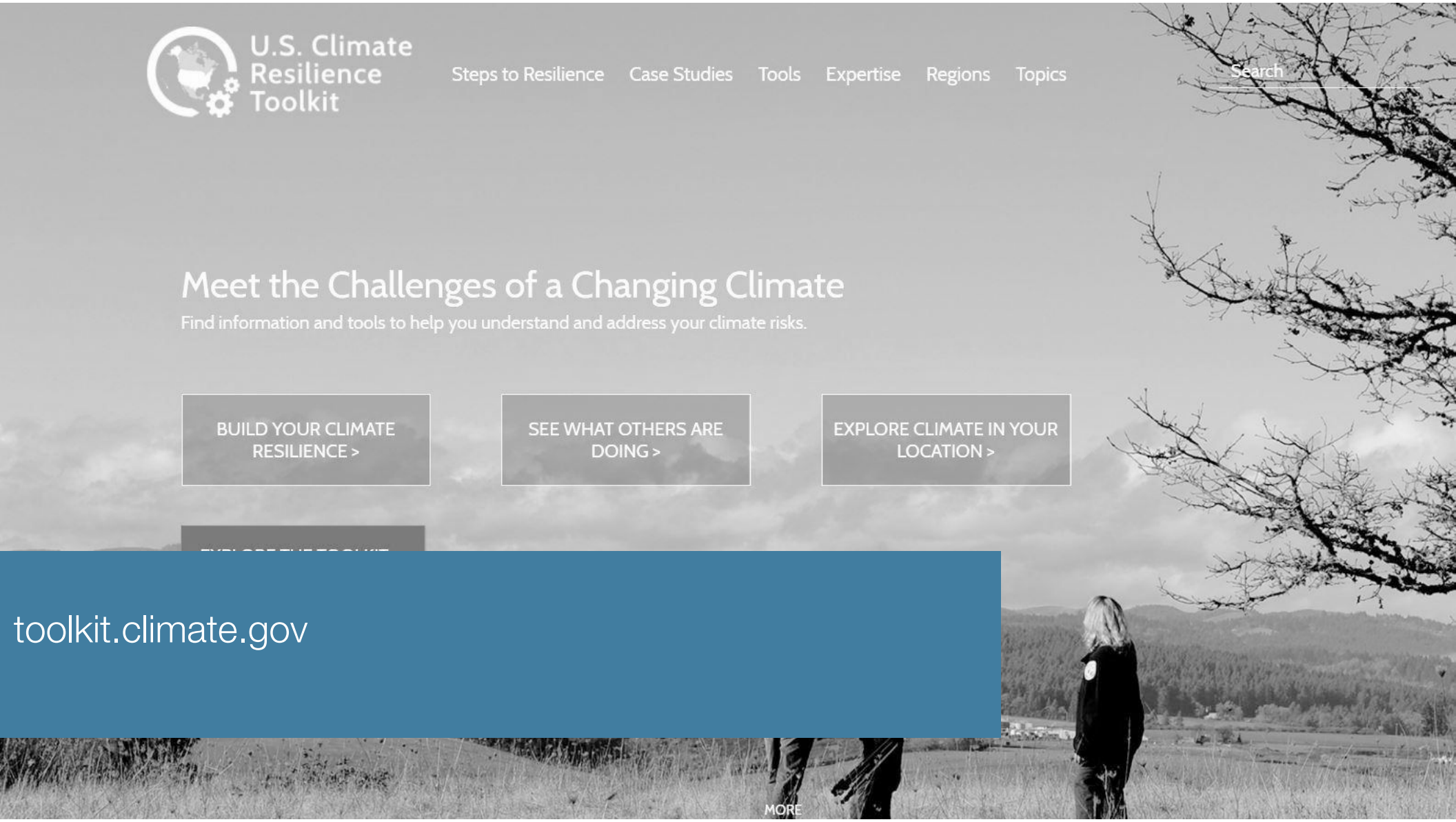

U.S. Climate Resilience Toolkit
Steps to Resilience
Case Studies
Tools
Expertise
Regions
Topics
Search
Meet the Challenges of a Changing Climate
Find information and tools to help you understand and address your climate risks.
BUILD YOUR CLIMATE RESILIENCE >
SEE WHAT OTHERS ARE DOING >
EXPLORE CLIMATE IN YOUR LOCATION >
toolkit.climate.gov
MORE

U.S. Climate Resilience Toolkit

To improve people's ability to understand hazards, manage risks, and develop opportunities.

Help make landscapes, communities, and businesses more resilient to extreme events.

Our Approach

US Climate Resilience Toolkit: Steps to Resilience

Did you know?

Why should I care?

What are we going to do about it?

1. Explore Hazards
2. Assess Vulnerability & Risks
3. Investigate Options
4. Prioritize & Plan
5. Take Action

U.S. Climate Resilience Toolkit

toolkit.climate.gov

Step 1: Explore hazards, identify assets

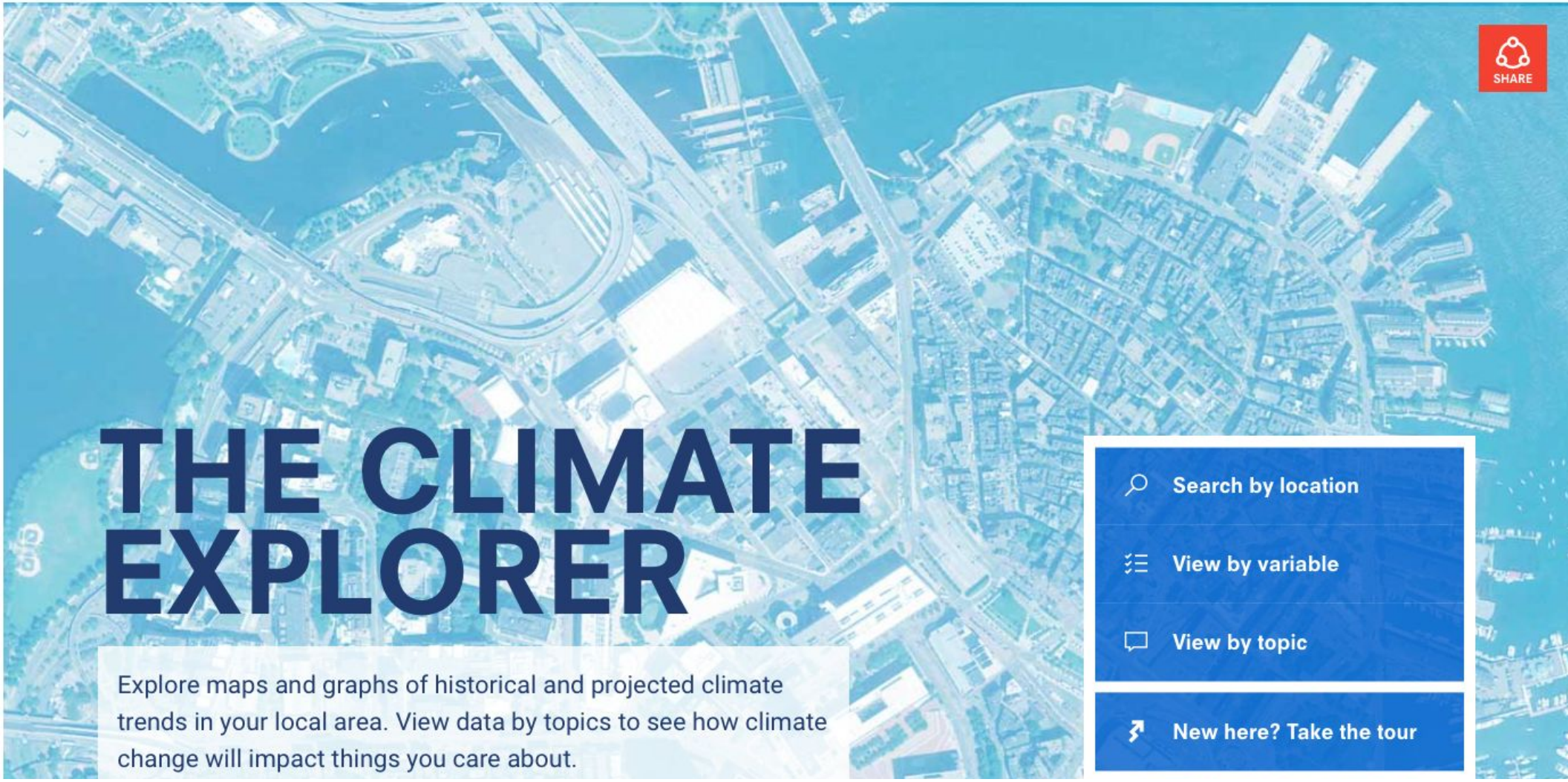
Example climate-driven hazards

Heavy Precipitation ⇒ **Increased Flooding**

Sea Level Rise ⇒ **Compounding Hurricanes** and **Storm Surge**

Drought ⇒ **Water Shortage** and **Wildfires**

Increasing minimum temperatures ⇒ **Extreme Heat Events**



THE CLIMATE EXPLORER

Explore maps and graphs of historical and projected climate trends in your local area. View data by topics to see how climate change will impact things you care about.

Search by location

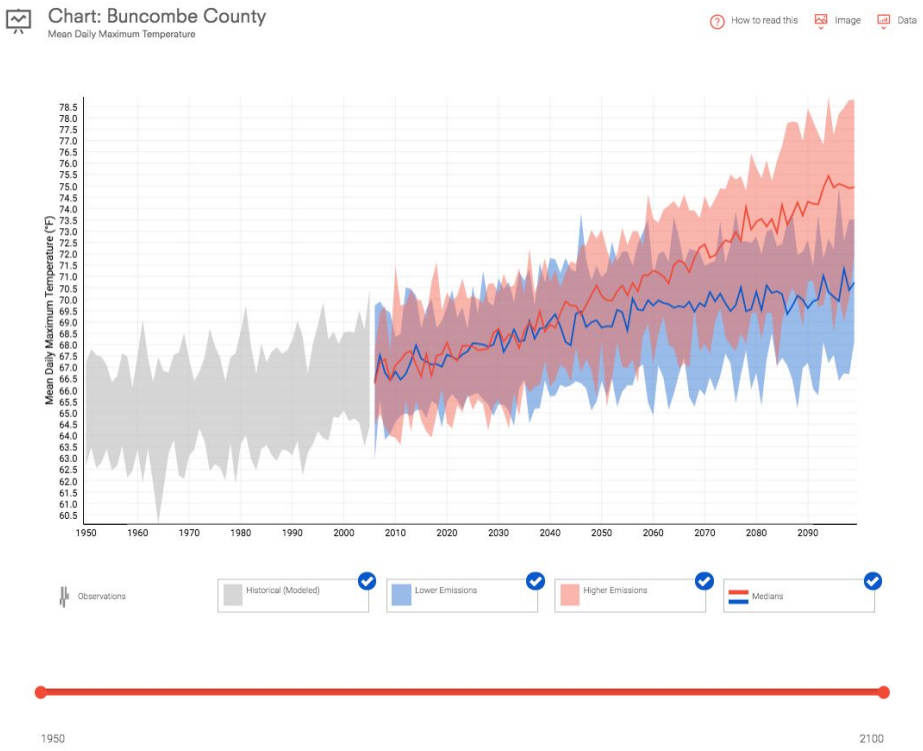
View by variable

View by topic

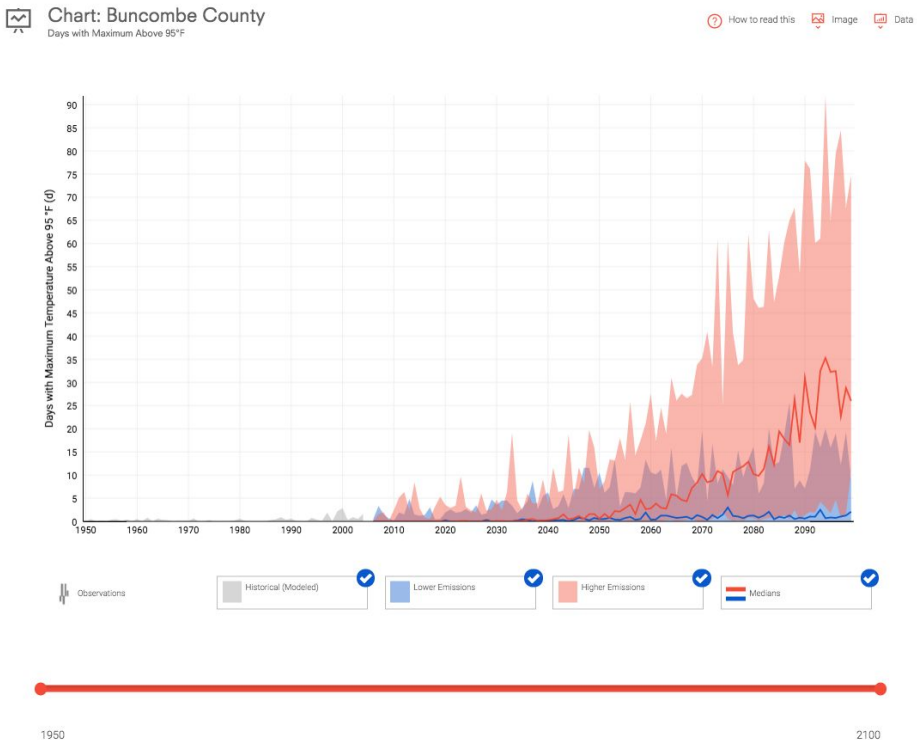
New here? Take the tour

Localized climate projections

Daily max temp



Days over 95 °F



Social Assets and Services


Residents and Residential Property


Commercial Property

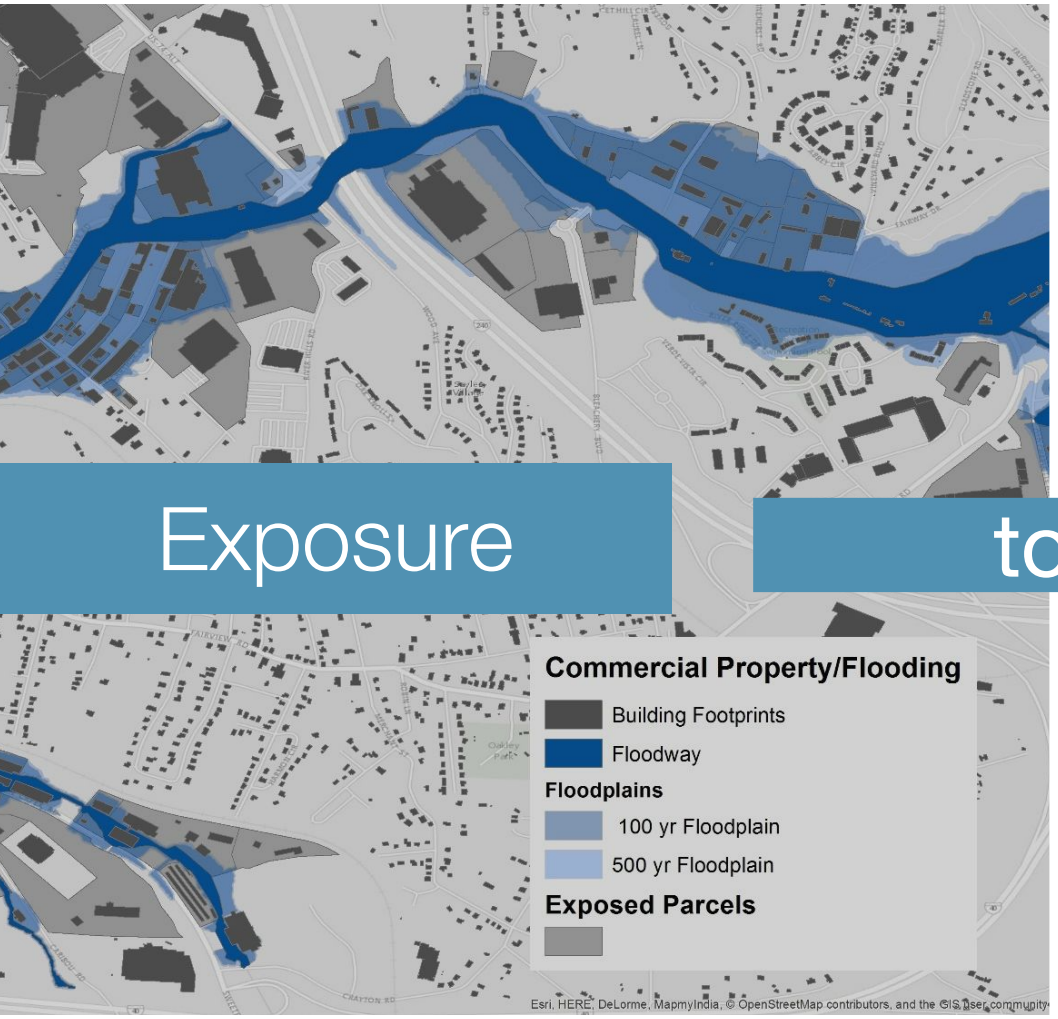

Community Services


Roads and Mobility

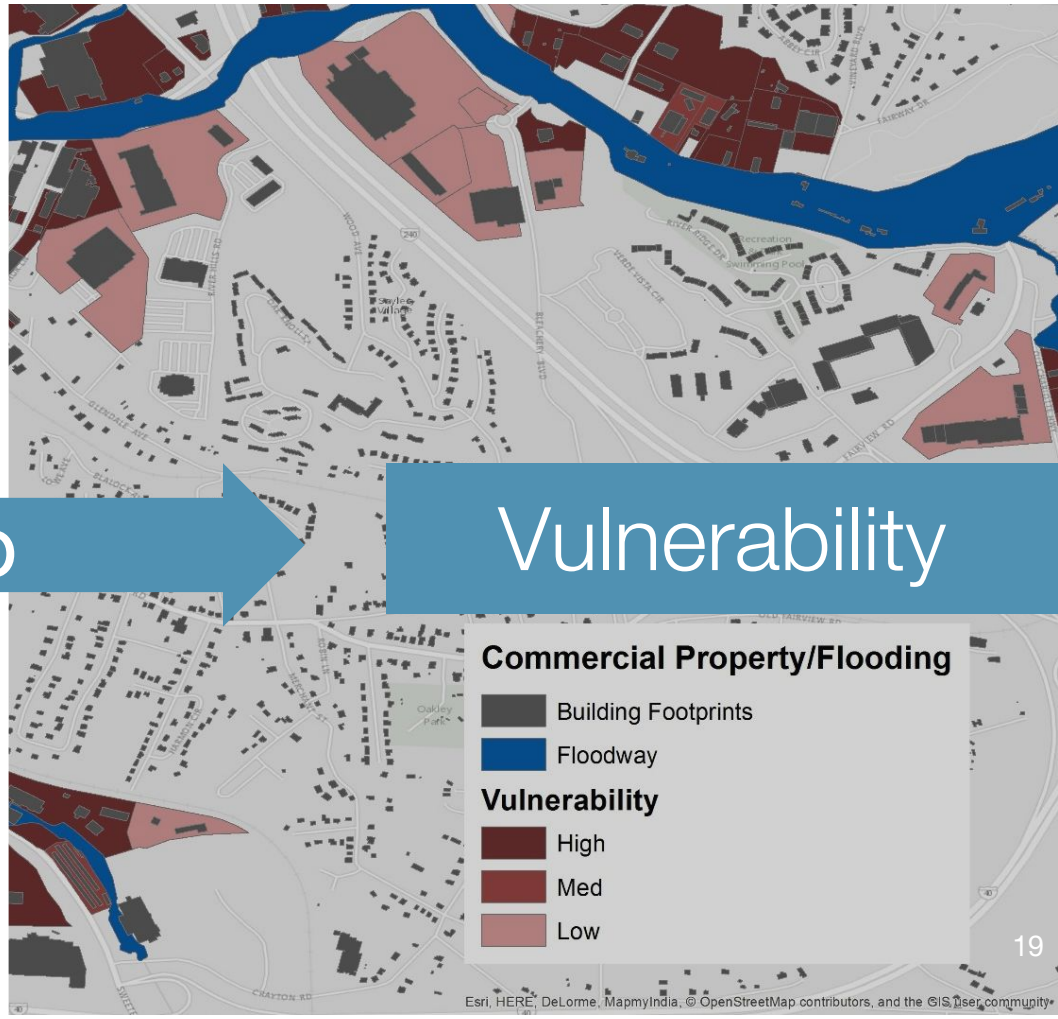
- Where do I live?
- Where do I work?
- How do I get between the two?

- Where do I live?
- Where do I work?
- How do I get between the two?
- And how are these impacted by changing realities?

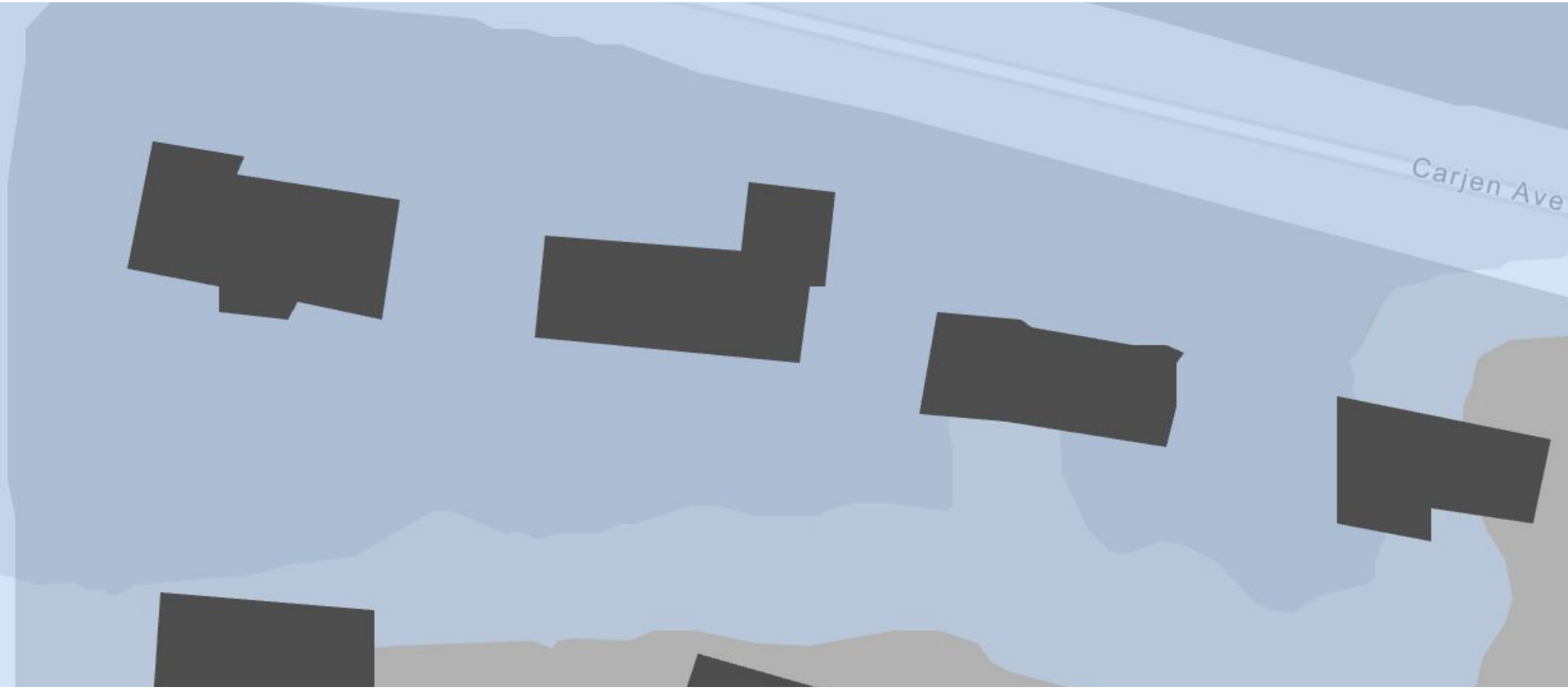
Step 2: Assess Vulnerability and Risks



Exposure to Vulnerability



Same exposure to flooding...



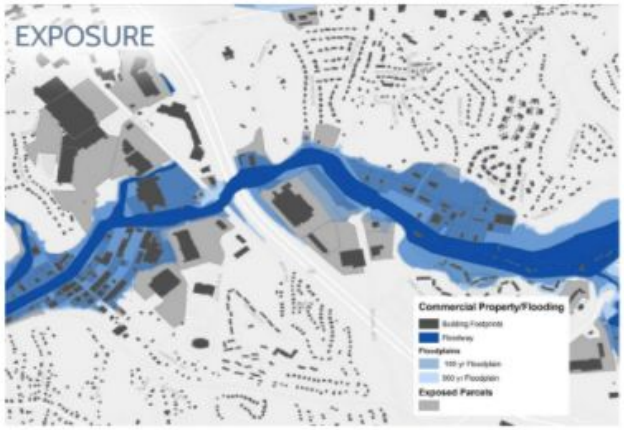
…different sensitivity and adaptive capacity.

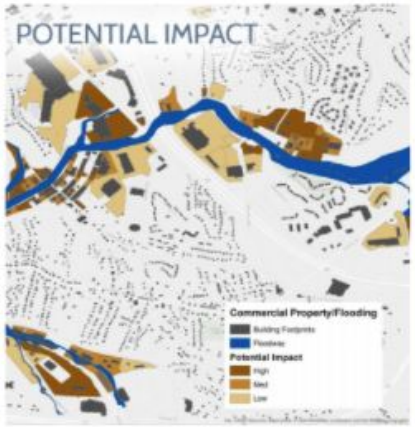
Benjamin Lowy for The New York Times

A *quantifiable* assessment of exposure, potential impact, adaptive capacity, vulnerability, and risk.

EXPOSURE:

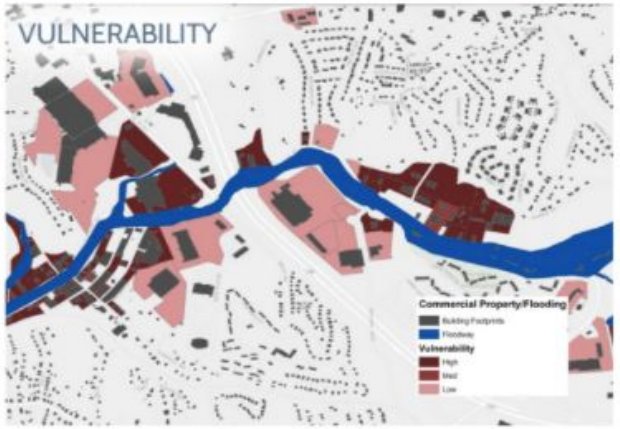
The presence of societal assets, including people, infrastructure, property, or services, that are adversely impacted by a potential threat.





POTENTIAL IMPACT:

The degree to which societal assets are adversely impacted by a potential threat.



ADAPTIVE CAPACITY:

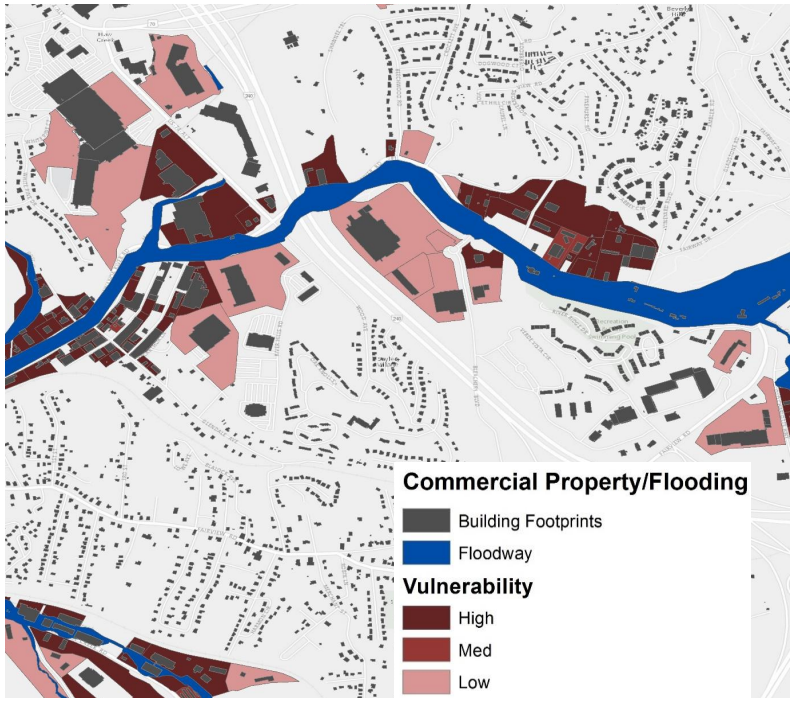
The ability that people, assets, or services have to cope with a climate-related impact.

VULNERABILITY:

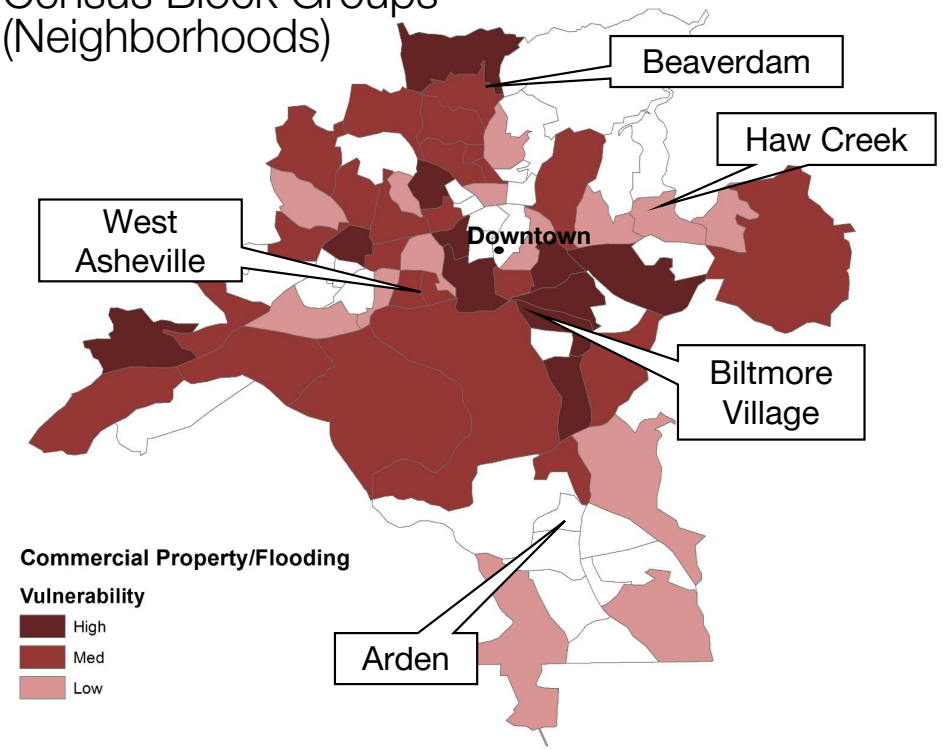
The susceptibility of assets based on their level of potential impact and adaptive capacity.

Areas of vulnerability (two scales)

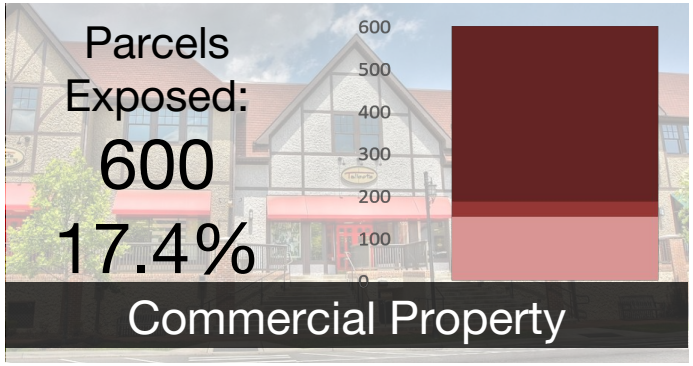
Individual Parcels

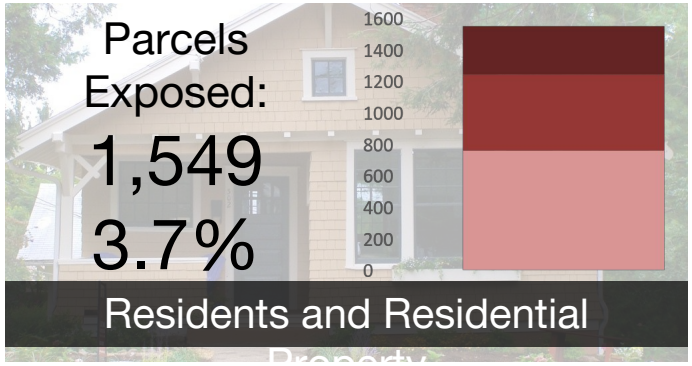


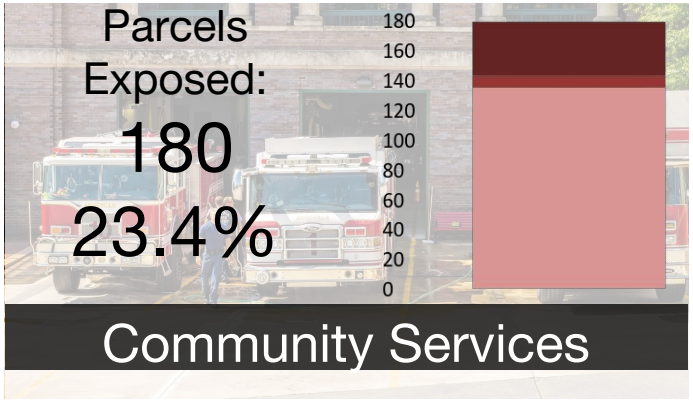
Census Block Groups (Neighborhoods)

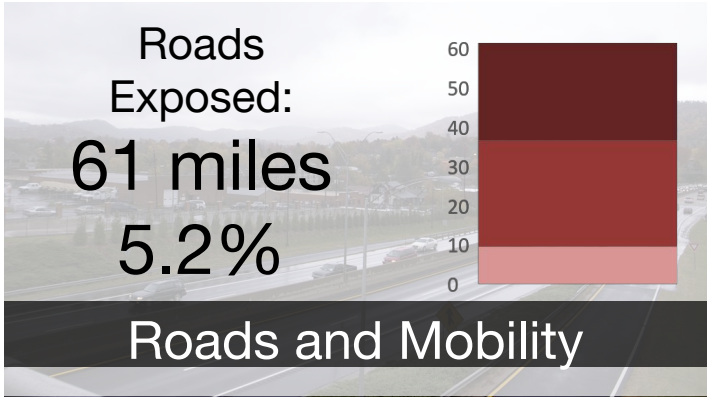


Vulnerability at city scale: flooding hazard



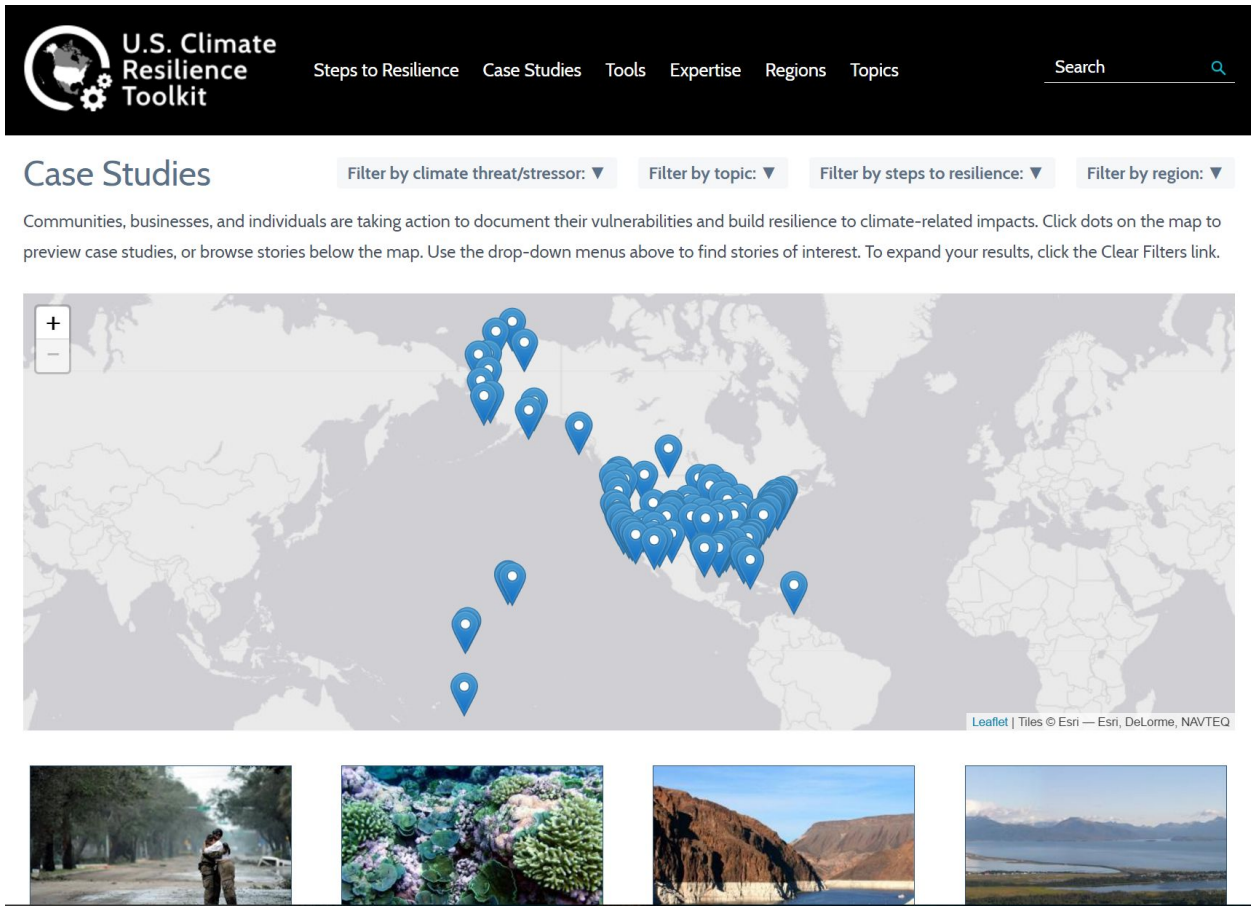




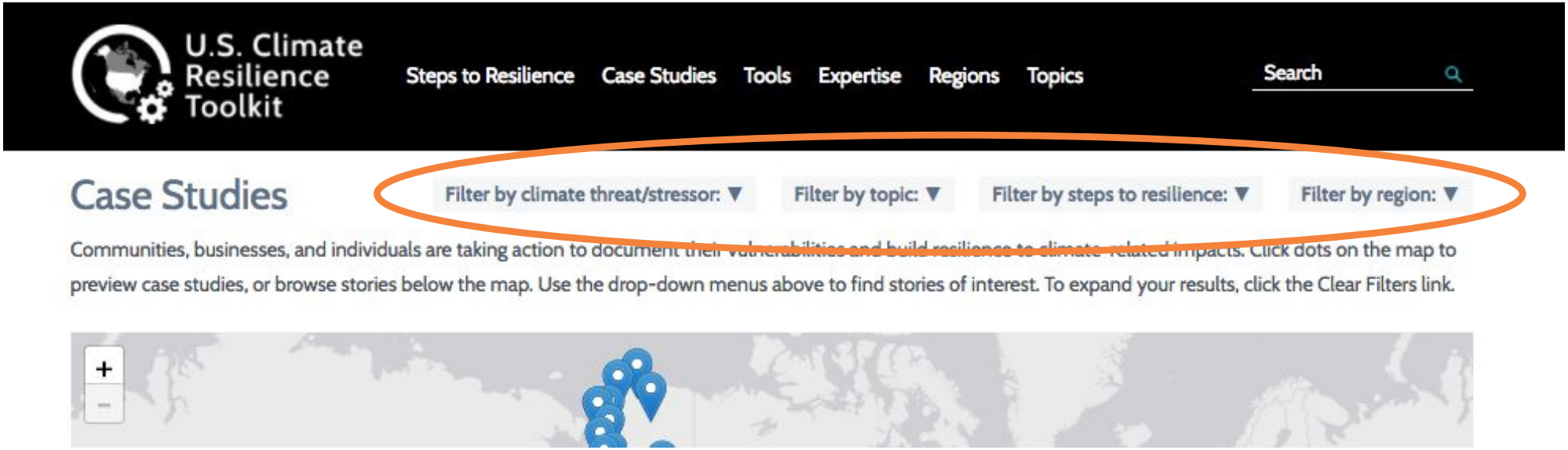


Step 3 : Identify options to reduce vulnerability

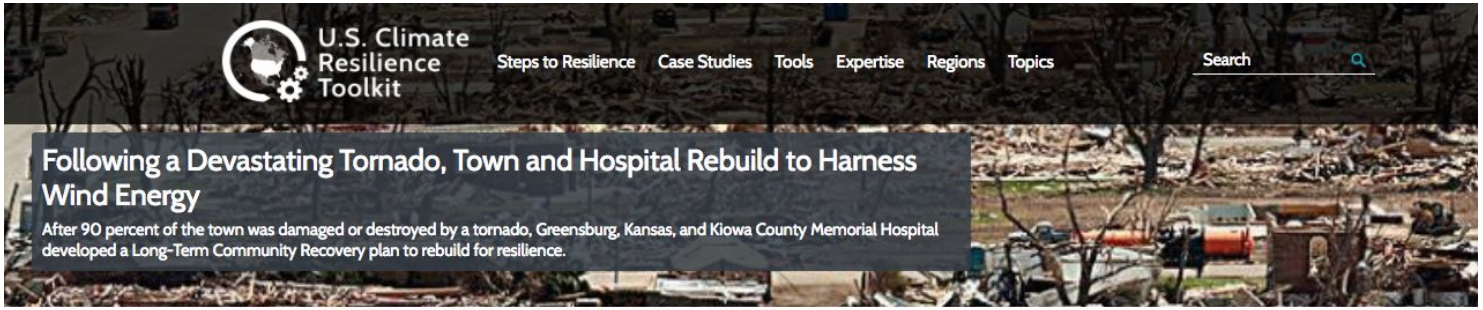
See CRT Case Studies



Filter relevant case studies



See how others have responded



Case Studies › Following a Devastating Tornado, Town and Hospital Rebuild to Harness Wind Energy ›

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TWEET
PRINT

Climate stressors and impacts

Because climate change is projected to increase the frequency of severe weather, communities located in regions that have traditionally experienced severe storms need to be particularly well prepared for extreme events. The city of Greensburg, Kansas, and its hospital—Kiowa County Memorial—have been rebuilding for precisely this sort of resilience after experiencing a catastrophic tornado. On May 4, 2007, an EF-5 tornado estimated to be 1.7 miles wide with 205 mph winds struck Greensburg. Damage to the city was immense: over 90 percent of the structures in the community were severely damaged or destroyed.

The power of wind

In the aftermath of the tornado, the Federal Emergency Management Agency (FEMA) activated the Long-Term Community Recovery (LTCR) program, which integrated assistance from the State of Kansas and

Steps to Resilience

This content supports the highlighted step.

1. Explore Hazards
2. Assess Vulnerability & Risks
3. Investigate Options
4. Prioritize & Plan
5. Take Action

Tools

Sustainable and Climate-Resilient Health Care Facilities Toolkit ›

Topics

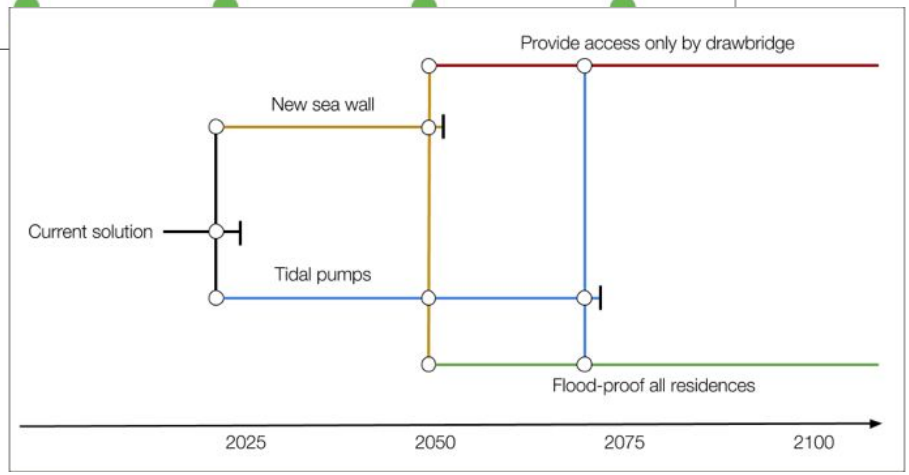
Energy › Building Resilience in the Energy Sector ›

Health › Extreme Events ›

Health › Building Health Care Sector Resilience ›
Element 3: Infrastructure Protection and Resilience ›

Step 4 : Prioritize and Plan

	Ability to increase resilience	Economic feasibility	Low environmental impact	Ability to implement
LSE-2				
MD-1				
MD-7				
MD-4				
MD-4 / MD-7				



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