Mitigation Needs Assessment: Climate Services

Wednesday, May 8, 2024
2:45 p.m.-3:45 p.m. CDT

2024 CDBG-DR Problem Solving Clinic
May 7-9, 2024 | St. Louis, MO

Presenters

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He/Him

HUD Office of Disaster Recovery

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National Oceanic and Atmospheric Administration (NOAA)

Learning Objectives

- Attendees will understand the requirements of the CDBG-DR mitigation set-aside and the necessary components of the mitigation needs assessment.
- Attendees will gain an understanding of the federal climate resources, tools, and data CDBG-DR grantees can use to assess and address current and future risks.

Agenda

- CDBG-DR mitigation set-aside and the mitigation needs assessment
- Federal climate services
  - Overview of billion-dollar disasters
  - National climate assessment
  - U.S. Climate Resilience Toolkit
  - Climate Mapping for Resilience & Adaptation (CMRA)
  - FEMA's National Risk Index
- Reducing administrative burden takeaways

CDBG-DR Mitigation Set-aside and Mitigation Needs Assessment

What is the CDBG-DR mitigation set-aside?

- Recent appropriations acts for 2020 to 2023 grantees required HUD to include in any allocation of CDBG–DR funds for unmet needs an additional amount of 15% for mitigation activities.
- How is the CDBG-DR mitigation set-aside different than CDBG-MIT?
  - The mitigation set-aside is not a separate allocation.

What is the CDBG-DR mitigation set-aside? (continued)

Activities funded by the CDBG-DR mitigation set-aside must:

1) Meet the definition of mitigation activities
2) Address the current and future risks identified in the mitigation needs assessment in the MID areas
3) Be CDBG eligible activities under Title I of the HCDA or otherwise eligible through a waiver or alternative requirement
4) Meet a national objective.

Meeting the Definition of Mitigation

- How does HUD define mitigation for the CDBG-DR mitigation set-aside?
  - Mitigation activities are defined as those activities that increase resilience to disasters and reduce or eliminate the long-term risk of loss of life, injury, damage to and loss of property, and suffering and hardship, by lessening the impact of future disasters.

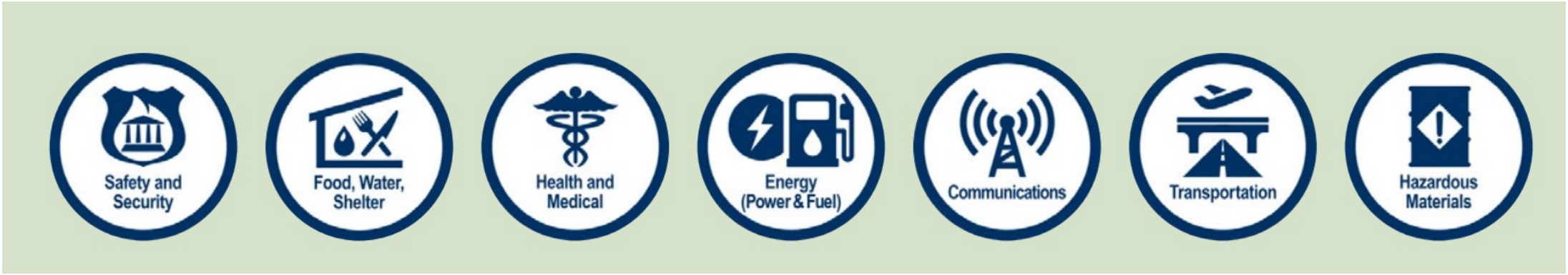
Mitigation Needs Assessment

Include in the action plan

- Grantees must:
  1. Conduct a risk-based assessment considering identified **current and future risks** to inform the activities funded by the CDBG-DR mitigation set-aside.
  2. Assess mitigation needs in a manner that effectively addresses risks to indispensable services.
  3. Use risks identified in the current Hazard Mitigation Plan.
  4. Cite data sources.

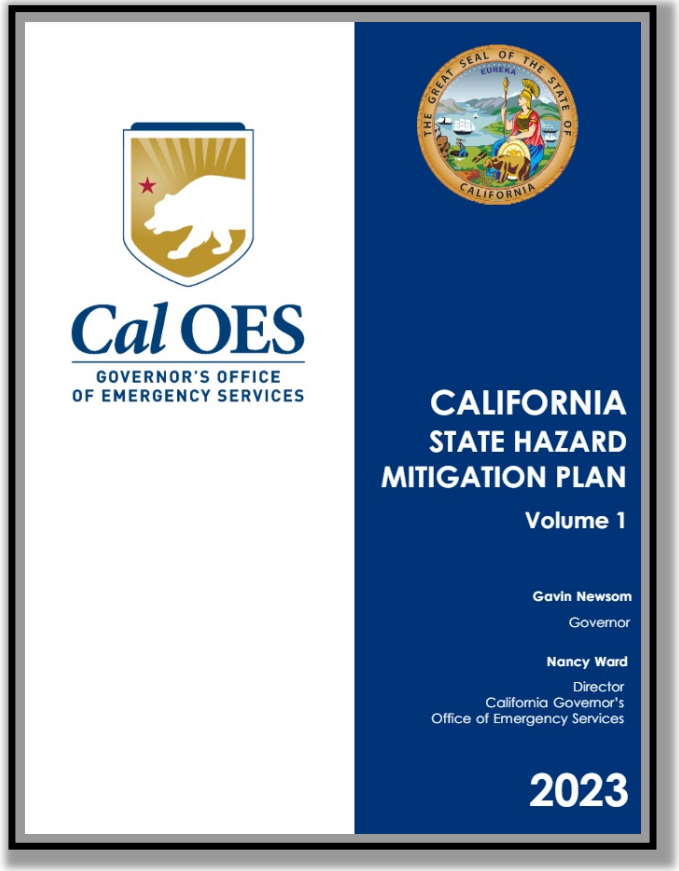
Mitigation Needs: Indispensable Services

- Indispensable services:
  - Enable continuous operation of critical business and government functions
  - Are critical to human health and safety or economic security
    - E.g., FEMA Community Lifelines



Mitigation Needs: FEMA-approved HMP

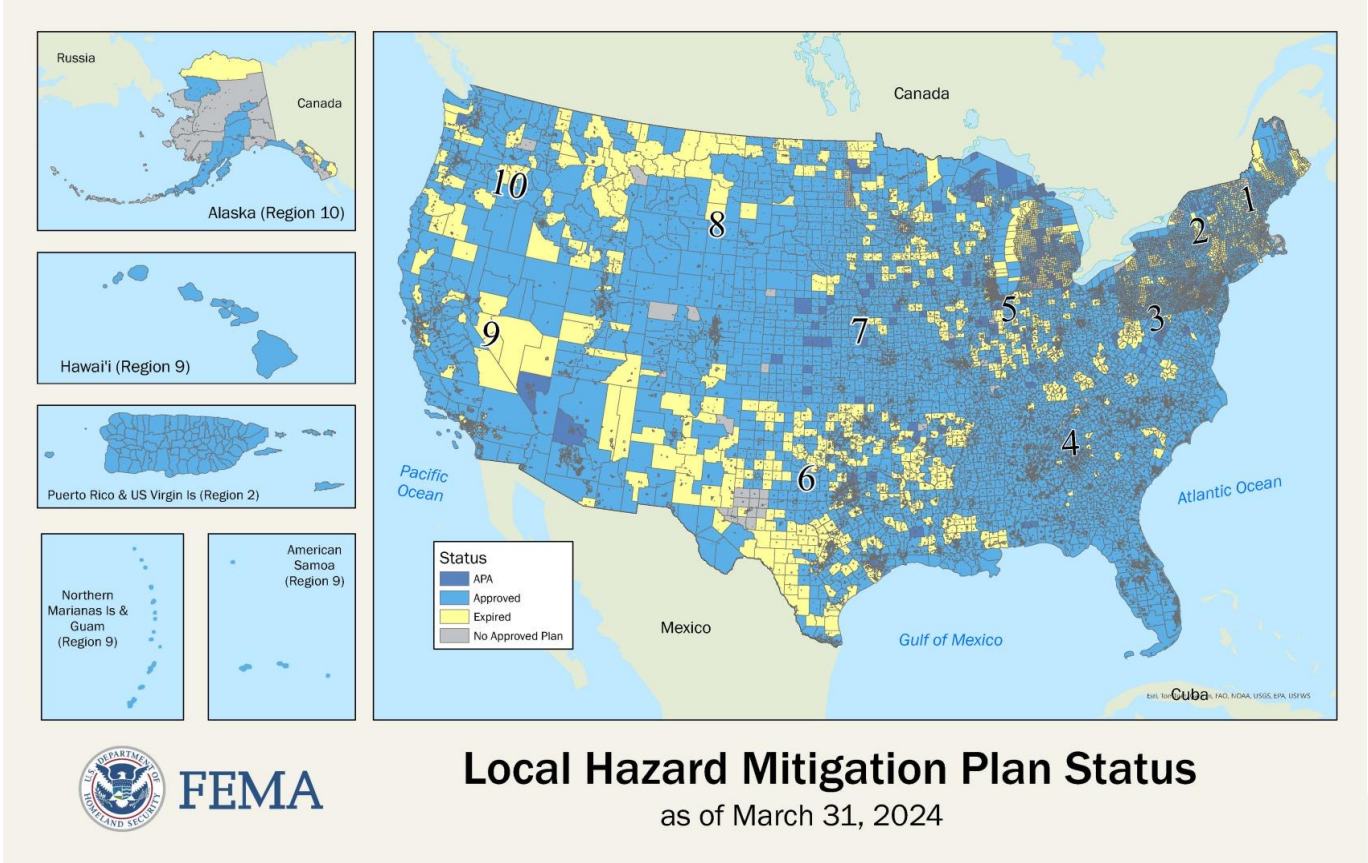
- Must use the risks identified in current FEMA-approved state or local Hazard Mitigation Plan (HMP) at a minimum.
  - Reduces effort identifying natural hazards affecting your communities.
  - Builds upon existing actions to reinforce resilience and long-term risk reduction.



Example: California's 2023 State Hazard Mitigation Plan

Review your Hazard Mitigation Plan (HMP)

- As of March 31, 2024, all 50 states, the District of Columbia, and five territories have FEMA-approved mitigation plans.
- Hazard Mitigation Planning | FEMA.gov
  - Hazard Mitigation Plan Status



Connect Activities to Mitigation Needs Assessment

Two ways to make the connection and meet CDBG-DR mitigation set-aside requirements.

(1) Tieback to Disaster

Implement eligible activities that have tieback to the disaster and/or incorporate mitigation measures into recovery activities.

(2) No Tieback

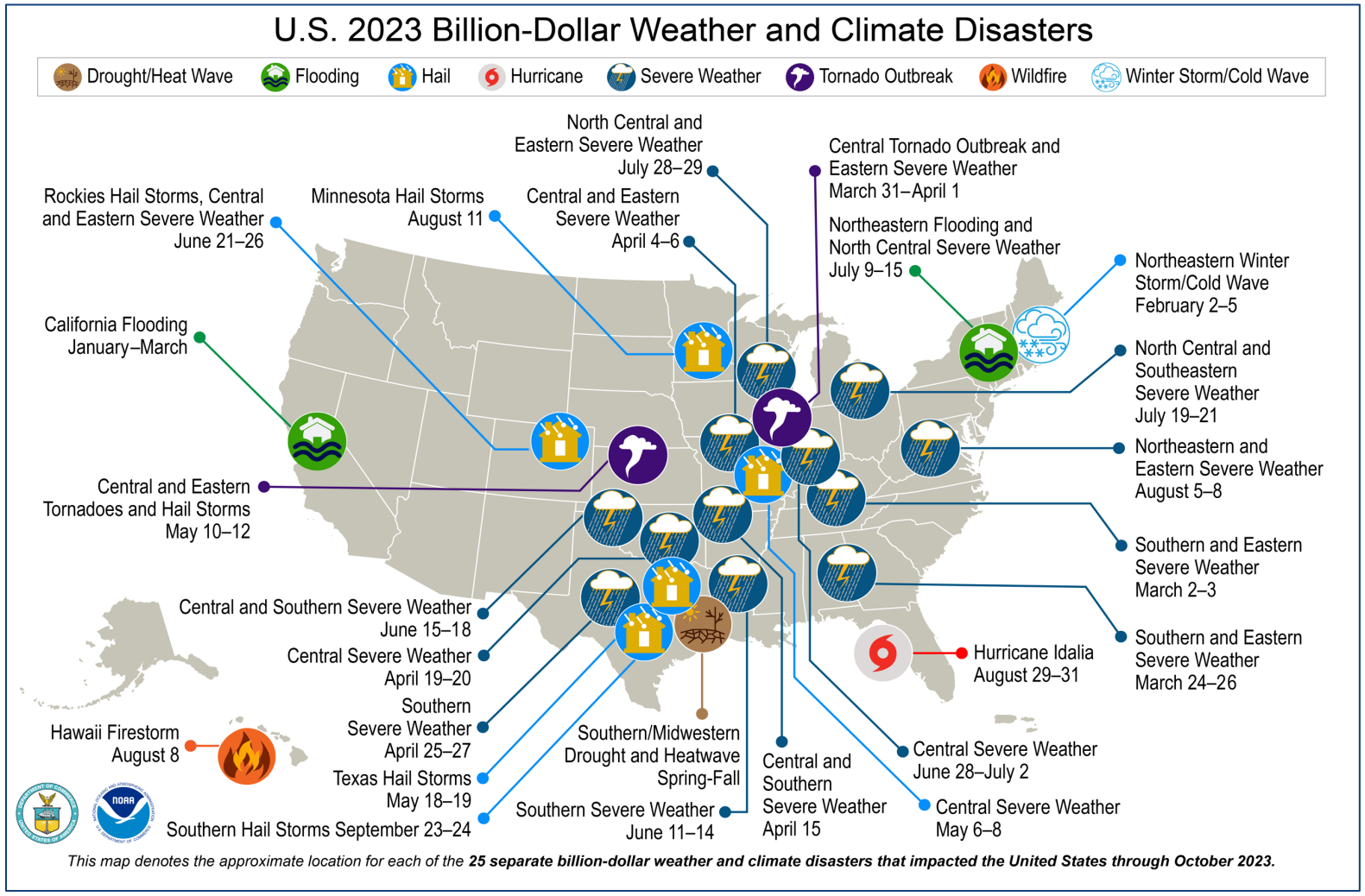
Implement mitigation activities that do not have tieback to the disaster but are still eligible (in this way the mitigation set-aside is a cap!)

Best Practice: Align the mitigation set-aside with other projects funded with CDBG-DR and CDBG-MIT funds, as well as other disaster recovery activities funded by FEMA, USACE, the U.S. Forest Service, etc.

Federal Climate Services: Resources, Data, and Tools

Billion-dollar Disasters (NOAA)

2023 Billion $ Disasters



28 events in 2023

- Six more than the record number
- Average 18 days between disasters, 1980 it was 82 days

5-year annual average cost of $120.6 billion

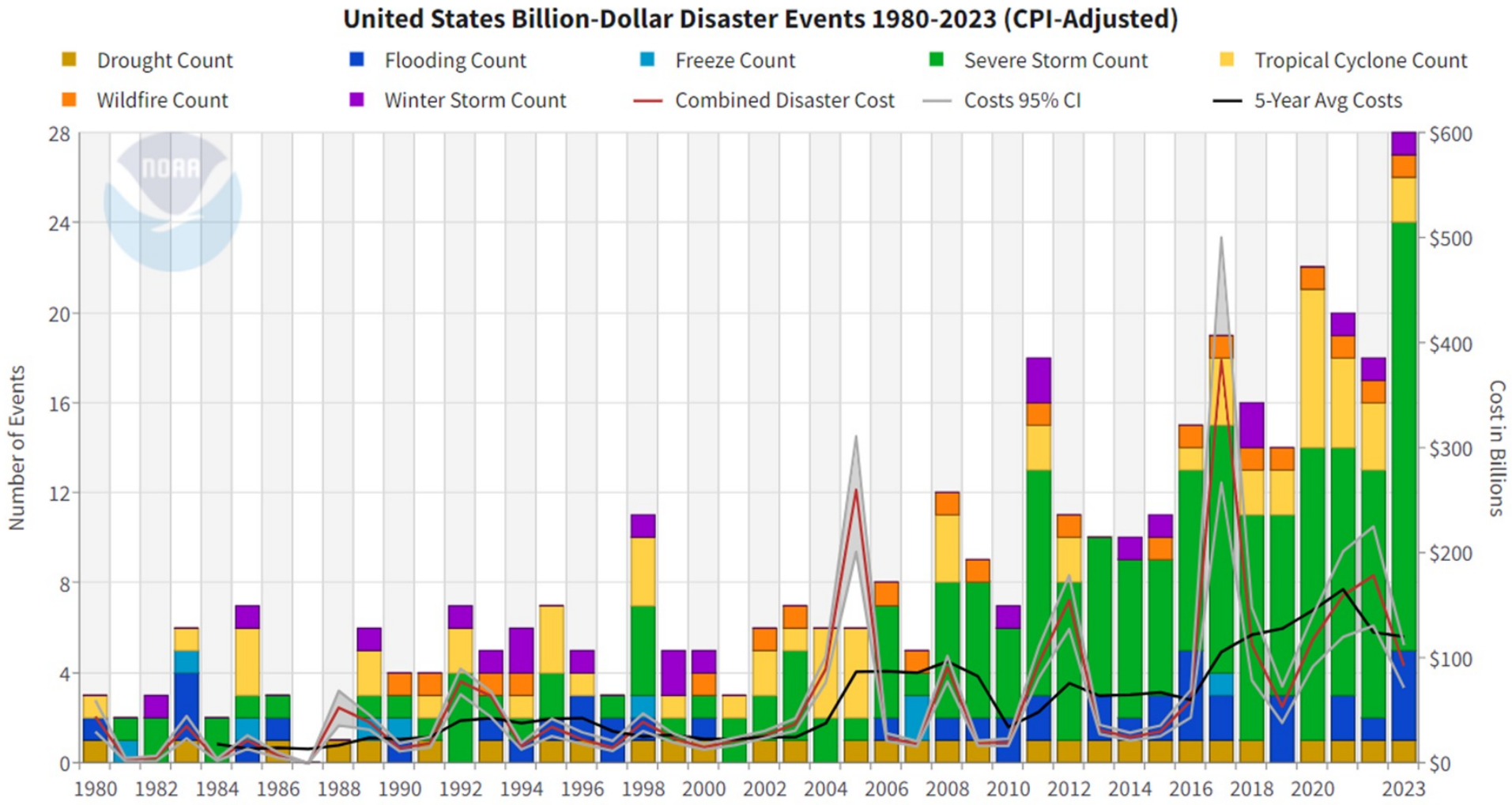
Longer disaster "season" due to warmer temperatures (drought, heat, fire, tropical storms, heavy rainfall flooding, severe weather)

U.S. billion-dollar disasters since 1980—both number & costs have quadrupled.*

*Adjusted for inflation

Source: NOAA NCEI

U.S. Billion-dollar Event Frequency (1980–2023)
Annual Cost, 5-year Cost Average



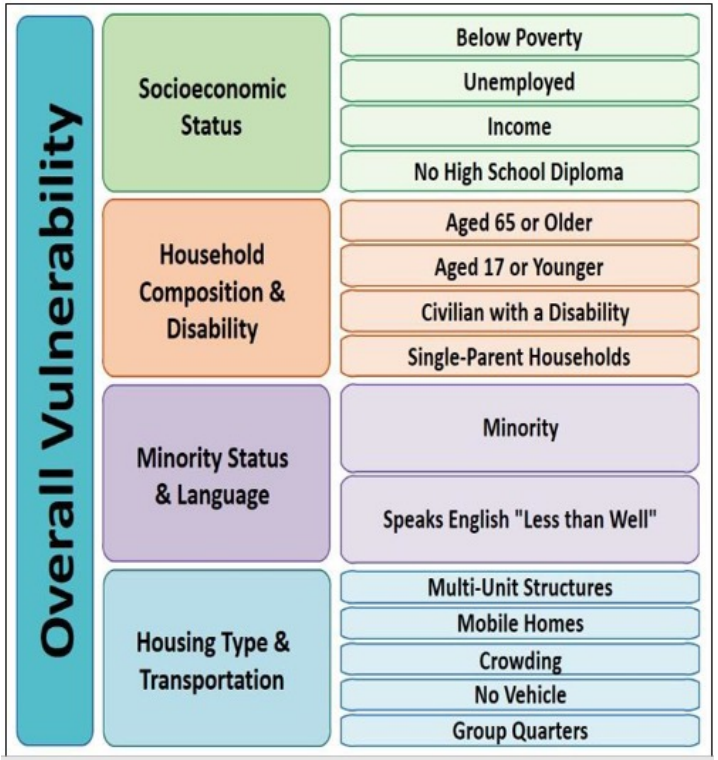
- Western wildfires, severe storms, inland flooding and hurricane costs all on the rise

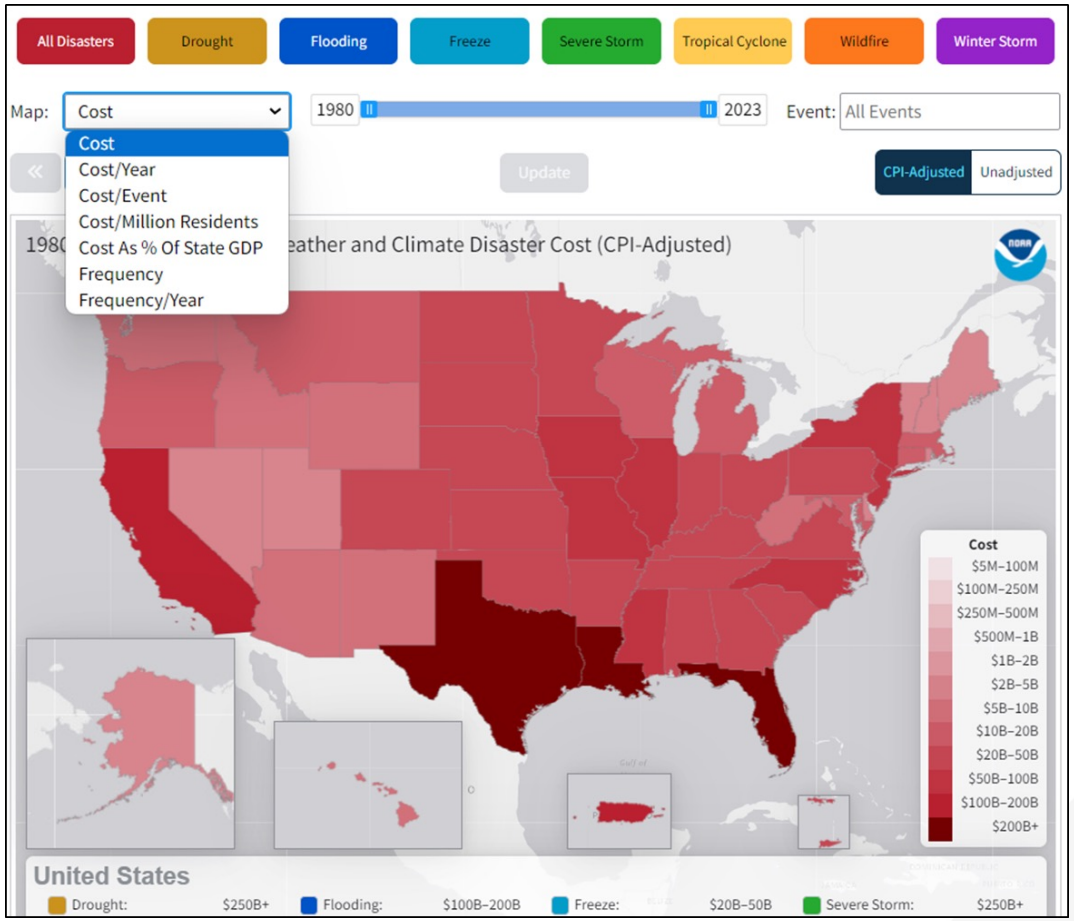
- Disaster costs <u>over the last **7 years**</u> (2017-2023)
  = **$1.091 trillion**

- **U.S. disaster losses are growing ~6% per year, more than twice as fast as gross domestic product (NIBS, 2023)**

Disaster Mapping

- Risk and vulnerability comparisons (state, county, tract)
- By disaster
- By socioeconomic vulnerability
- Census data derived
- Integrating CDC/ATSDR metrics



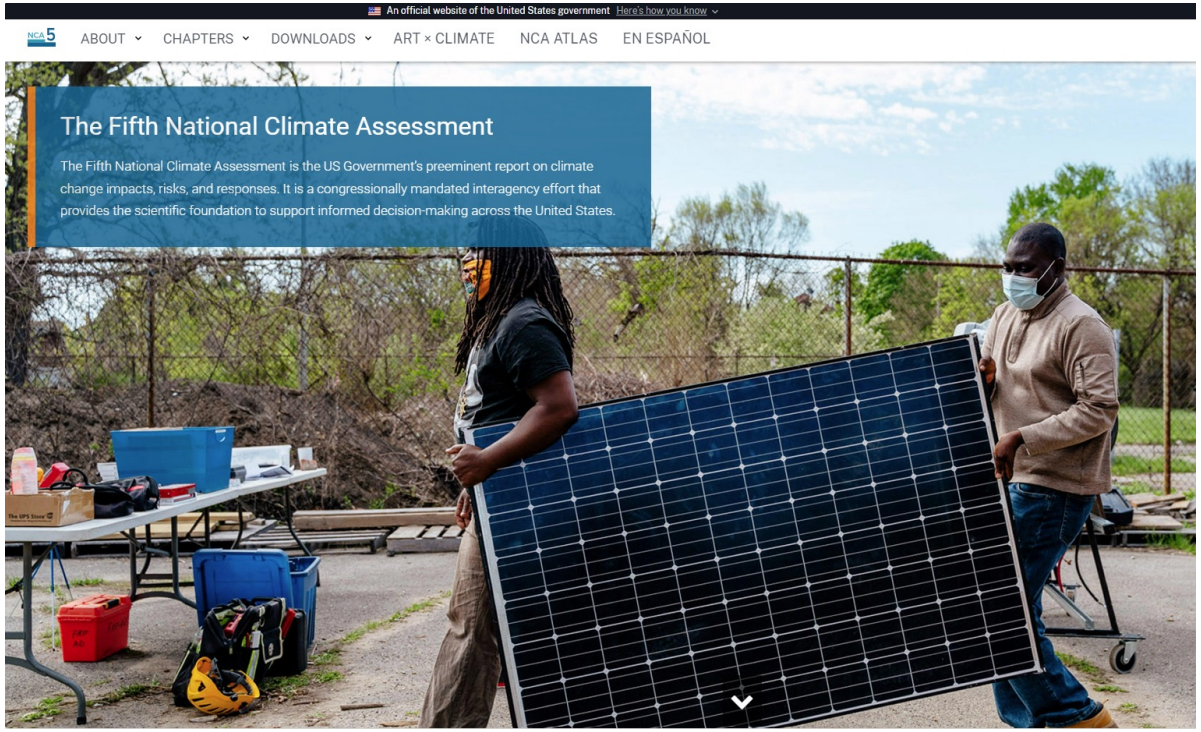


https://www.ncei.noaa.gov/access/billions/

National Climate Assessment

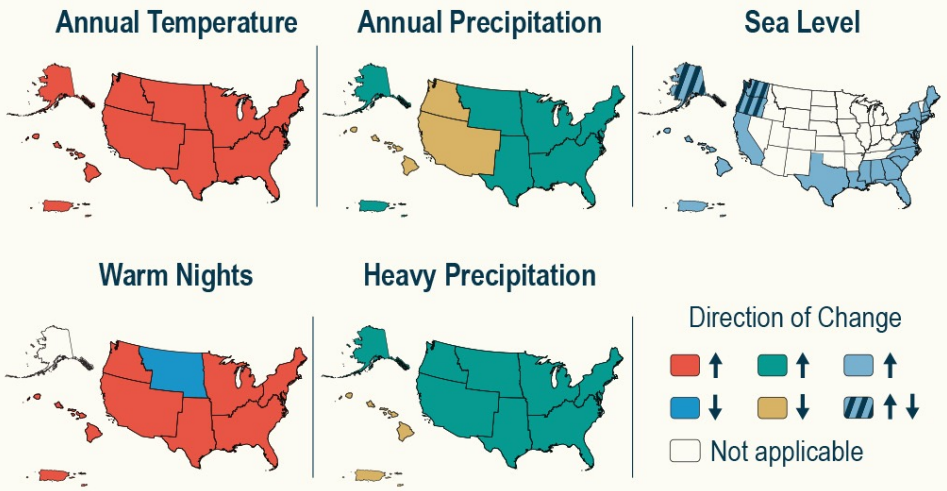
Fifth National Climate Assessment

- Fifth National Climate Assessment
  - U.S. Government's preeminent report on climate change impacts, risks, and responses
  - A congressionally mandated interagency effort that provides the scientific foundation to support informed decision-making across the U.S.



Climate Change Risks and Opportunities in the US

Climate change is happening now in all regions of the US

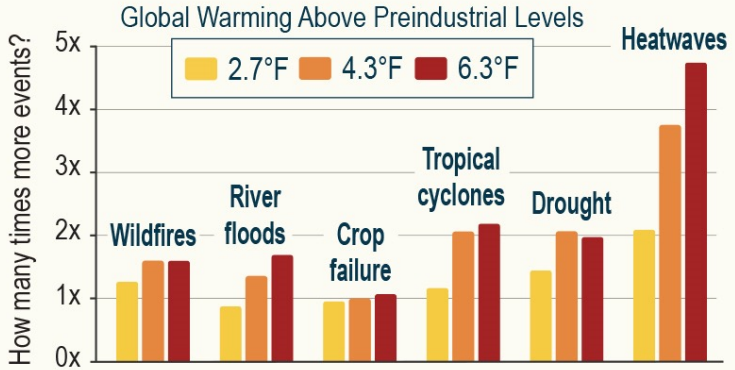


Each additional increment of warming leads to greater risks

- Water supply
- Food security
- Infrastructure
- Health and well-being
- Ecosystems
- Economy
- Livelihoods and heritage

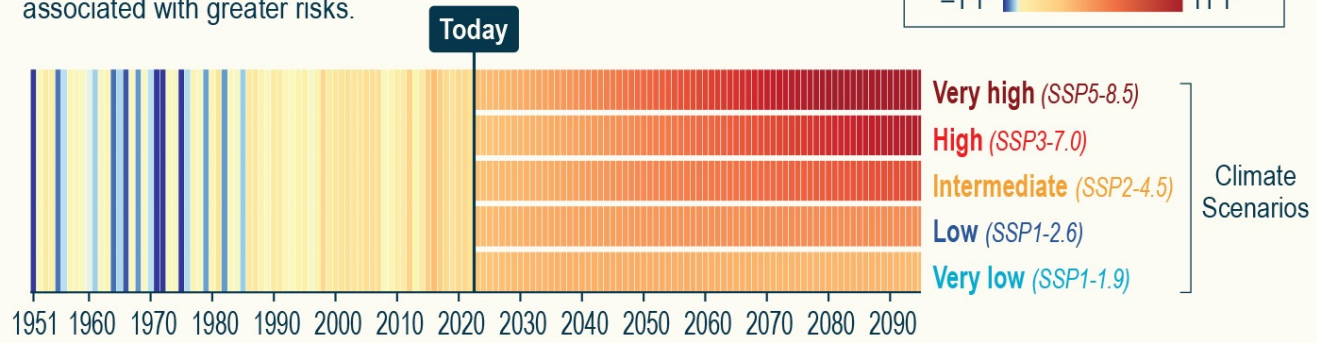
Without deeper cuts in global net emissions, climate risks to the US will continue to grow

- A person born in North America in 2020 will experience more climate hazards during their lifetime, on average, than a person born in 1965.



How much more the US warms depends on choices made today

- Future global greenhouse gas emissions from human activities determine whether and how quickly the US reaches warming levels associated with greater risks.



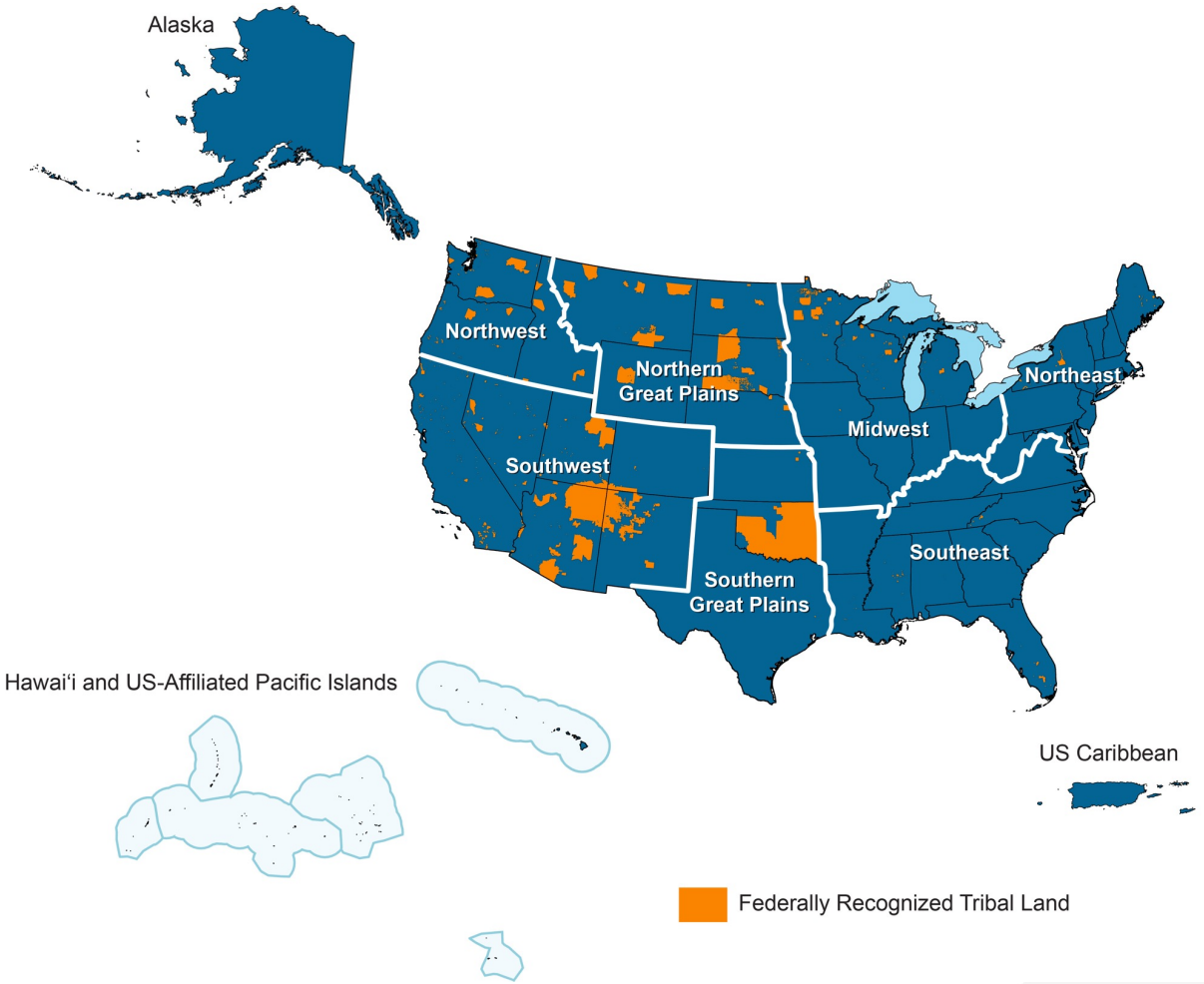
Action to limit future warming and reduce risks can have near-term benefits and opportunities

- Low-carbon energy jobs
- Improved air quality
- Health benefits
- Economic benefits
- Reduced risks to ecosystems
- Reduced risks to biodiversity
- More options for adaptation
- Social benefits

Fifth National Climate Assessment | U.S. Global Change Research Program | nca2023.globalchange.gov

National Climate Assessment by Section/Topic

- Overview
- Physical Science
- National Topics
- Regions
- Responses



National Topics – Chapter 12: Built Environment, Urban Systems, and Cities

- Key Messages
  1) Urban areas are major drivers of climate change.
  2) Attributes of the built environment exacerbate climate impacts, risks, and vulnerabilities.
  3) ***Urban environments create opportunities for climate mitigation and adaptation.***
  4) Community-led actions signal a shift toward equitable climate governance.

Table 12.1. Examples of Mitigation and Adaptation Options in Cities and Built Environments

These examples of mitigation and adaptation options are drawn from published sources or from other NCA5 chapters. Examples are illustrative and do not represent a comprehensive list. A longer discussion of potential greenhouse gas emissions reductions by mitigation actions can be found in Chapter 32 (see Figure 32.22). Option categories are adapted from Carmin et al. 2015; IPCC 2022, 2022; and Dodman et al. 2022.[122,123,124,125]

Societal Options	Examples
Programs and services	Climate action planning, disaster management and response, housing provision, public health services, environmental monitoring
Economics and finance	Social safety nets, insurance products, public finance mechanisms (such as bonds) (Box 12.1)
Communication and decision support	Early warning systems, hazard vulnerability assessments, health awareness training, risk assessments, civic partnerships, regional collaboratives

Building Options	Examples
Energy performance	Energy-efficient building retrofits, on- and off-site renewable energy production and use,[126] community/shared solar, energy-efficient lighting and appliances, monitoring and benchmarking,[127] grid-interactive buildings (see Ch. 5)
Codes and standards	Building ventilation;[71] cool and evaporative roofs;[128] vegetated roofs;[129] risk-reduction standards; resilient construction materials;[130,131] electrification, energy efficiency, and other GHG emissions reductions[132]

Land-Use and Ecosystem Options	Examples
Gray infrastructure	High albedo/reflective pavements, coastal protection (such as seawalls), dams, flood controls, drainage (see Ch. 9)
Natural, green, and blue infrastructure	Urban ecosystems and biodiversity, street trees, greenery, coastal wetlands and dune systems
Land management	Zoning to reduce impact exposure and support GHG emissions mitigation,[133] co-location of development with low-GHG transportation and technologies,[134] reduced encroachment on natural lands, fire management, land restoration
Migration and relocation	Managed retreat (see Chs. 9, 16, 29, 31)
Resource use	Improved water supply, reduced emissions from waste and wastewater

Urban Transport Options	Examples
Electric/fuel-efficient vehicles	Electric vehicle charging networks,[135] purchase and operation incentives,[136,137,138] GHG and air pollution emissions standards (Ch. 13)
Transit, active transport	Active transport infrastructure provision (see Ch. 13), safety and comfort measures

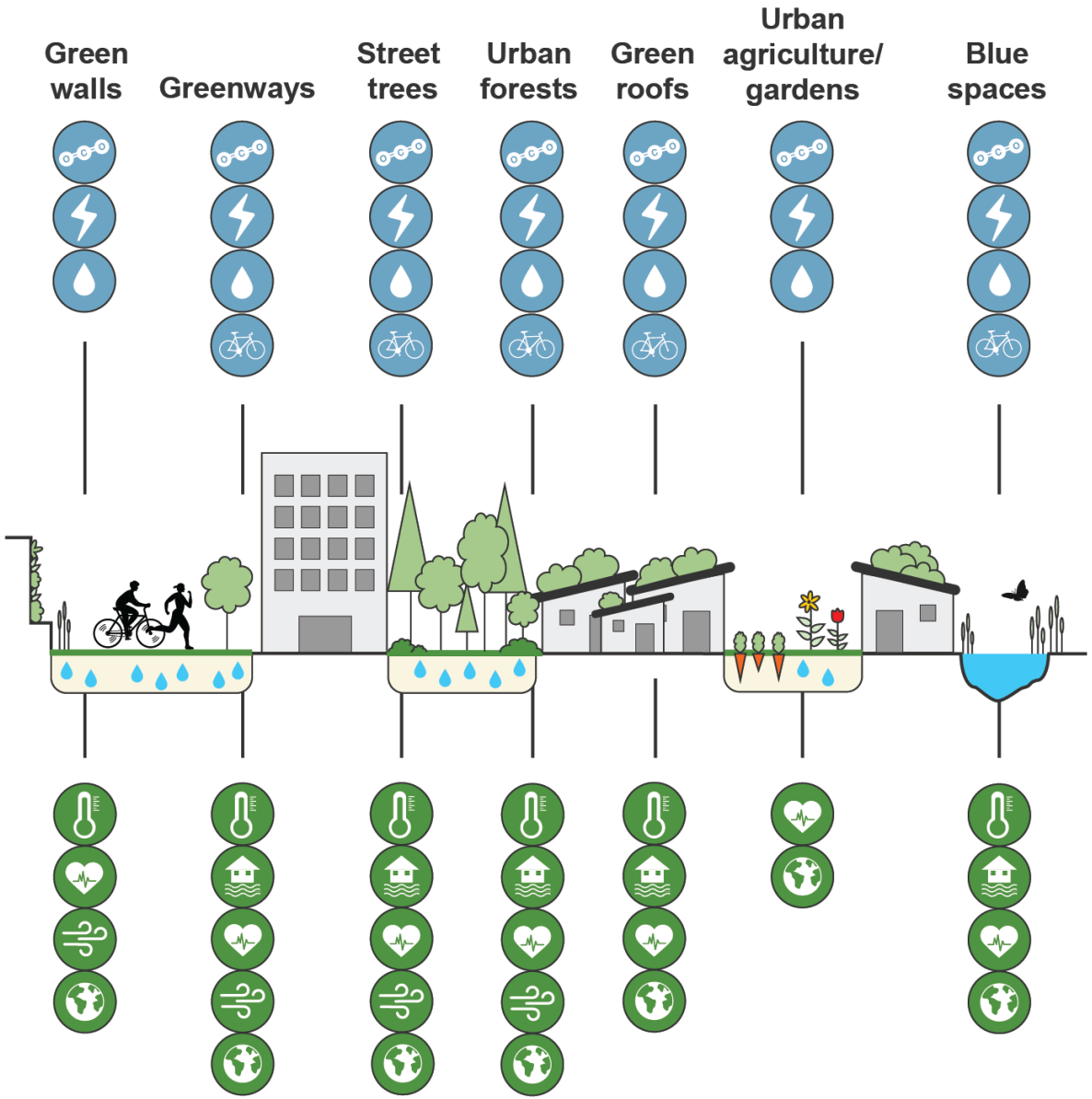
Natural Infrastructure in Cities

Mitigation benefits

- Sequester and store carbon
- Reduce building energy use
- Reduce municipal water use
- Facilitate active mobility

Adaptation co-benefits

- Reduce heat stress
- Reduce flooding
- Improve health
- Improve air quality
- Promote biodiversity



U.S. Climate Resilience Toolkit (CRT)

U.S. Climate Resilience Toolkit (CRT)

- Provides guidance, tools, and resources for planners and the general public to help understand impacts of climate change for their communities.
  - Steps to Resilience
  - Case Studies
  - Tools
  - Expertise
  - Regions
  - Topics
  - Climate Explorer

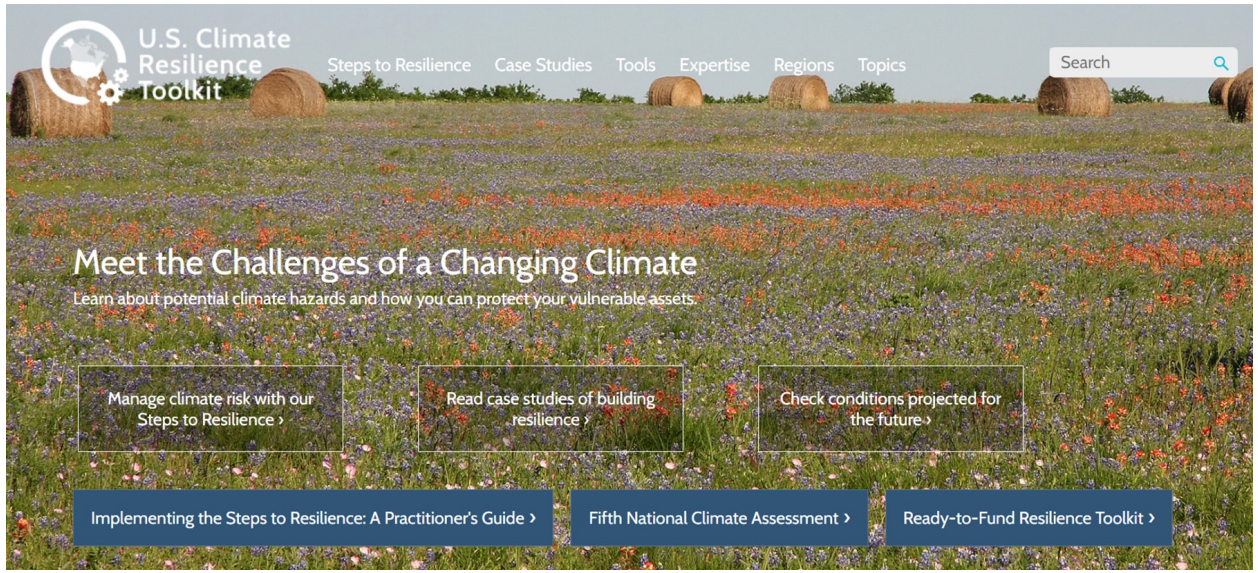


Table 4. Potential climate-related hazards and associated climate and non-climate stressors. Source: U.S. Climate Resilience Toolkit.

Hazards	Climate Stressors	Non-climate Stressors
Tidal Flooding	Sea level rise	Aging infrastructure
	Heavy precipitation	Increased development/impervious surfaces
Storm Surge	Sea level rise	Aging infrastructure
	Tropical systems	Increased development/impervious surfaces
Floodplain Inundation	Sea level rise	Increased development/impervious surfaces
	Increase in rainfall frequency/intensity	Aging/undersized infrastructure
Extreme Heat	Temperature variability	Increased development/impervious surfaces
		Socioeconomic vulnerability
Wildfire	Drought (water shortage and vegetation dessication)	Wildland-Urban Interface/fuels & vegetation, historic fire suppression
	Temperature variability	Human-caused ignitions, historic fire suppression
Landslides	Increase in rainfall frequency/intensity, high temperatures, and snowstorms	Development/vegetation removal

CRT's Steps to Resilience

1. Understand Exposure
2. Assess Vulnerability & Risk
3. Investigate Options
4. Prioritize & Plan
5. Take Action

The Resilience Ecosystem

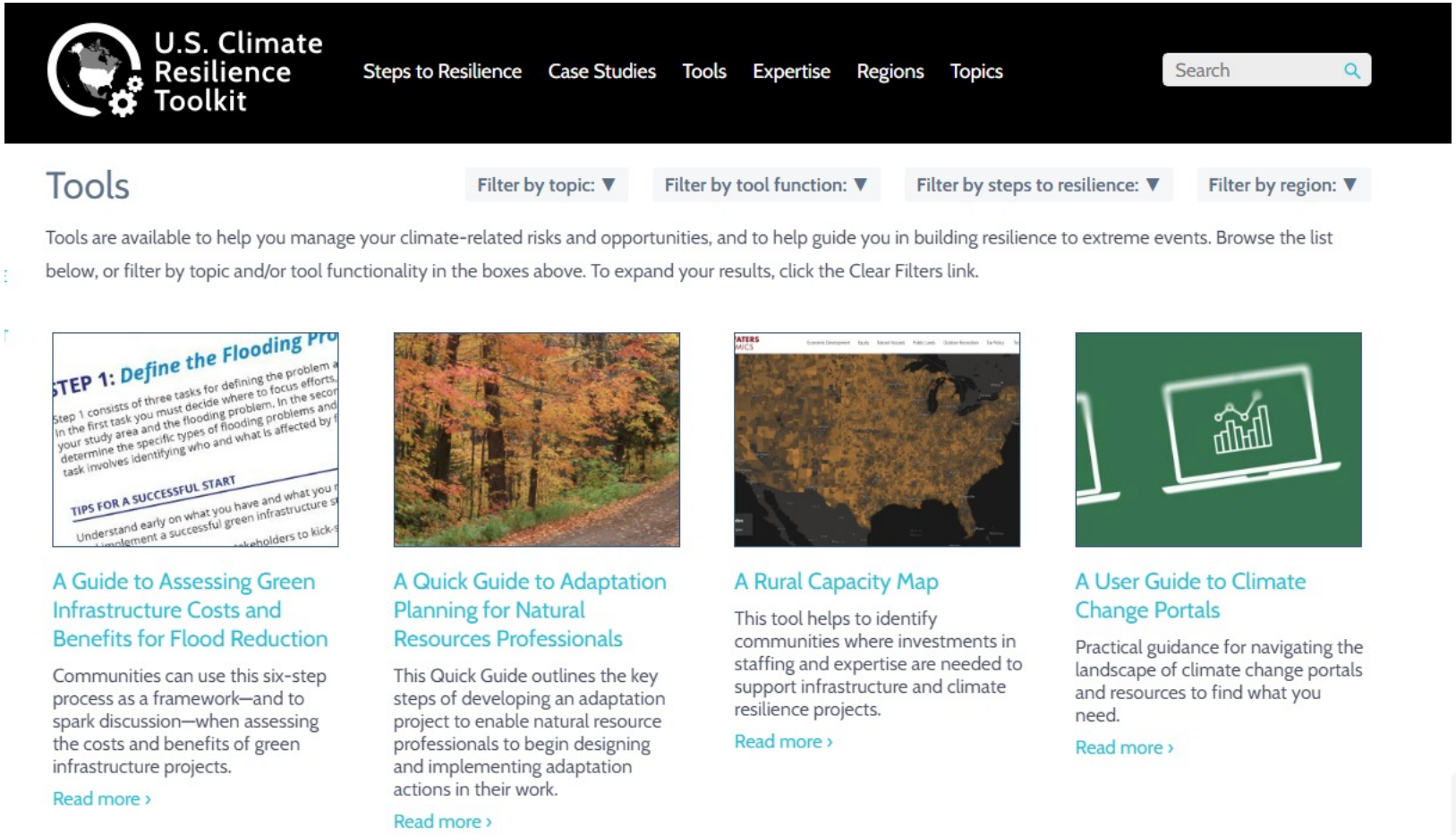
Use the Steps to Resilience

- build a team to establish shared goals
- determine what's at stake
- agree on potential impacts of greatest concern
- establish methods for reducing unacceptable risks
- make a realistic plan, weighing resources and benefits
- implement those plans

Graphic by Anna Eshelman, NOAA.

CRT's Tools

- As of April 2024, 494 resources included to:
  - Manage climate-related risks and opportunities.
  - Build resilience to extreme events.
- Sort by topic, tool function, steps to resilience, and region.



Climate Mapping for Resilience & Adaptation (NOAA)

Climate Mapping for Resilience & Adaptation (CMRA)

- Designed to work with the U.S. Climate Resilience Toolkit.
- Use to understand past, present, and future climate hazards.
- Can customize risk assessments to identify risks at the local level.

CMRA: Hazard-specific Information

- Explore maps, data, federal programs, funding opportunities, and other resources to support your climate resilience planning for the following natural hazards:

Extreme Heat

Drought

Wildfire

Flooding

Coastal Inundation

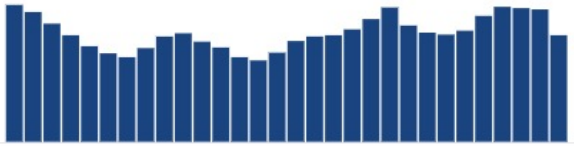
View Climate-related Hazards in Real-time

CMRA | Get Started | Assessment Tool | Hazards | Federal Funding | New Policies | Open Data | About

Wildfire

Active fires 165

Last 30 days



Source: National Interagency Fire Center

Drought

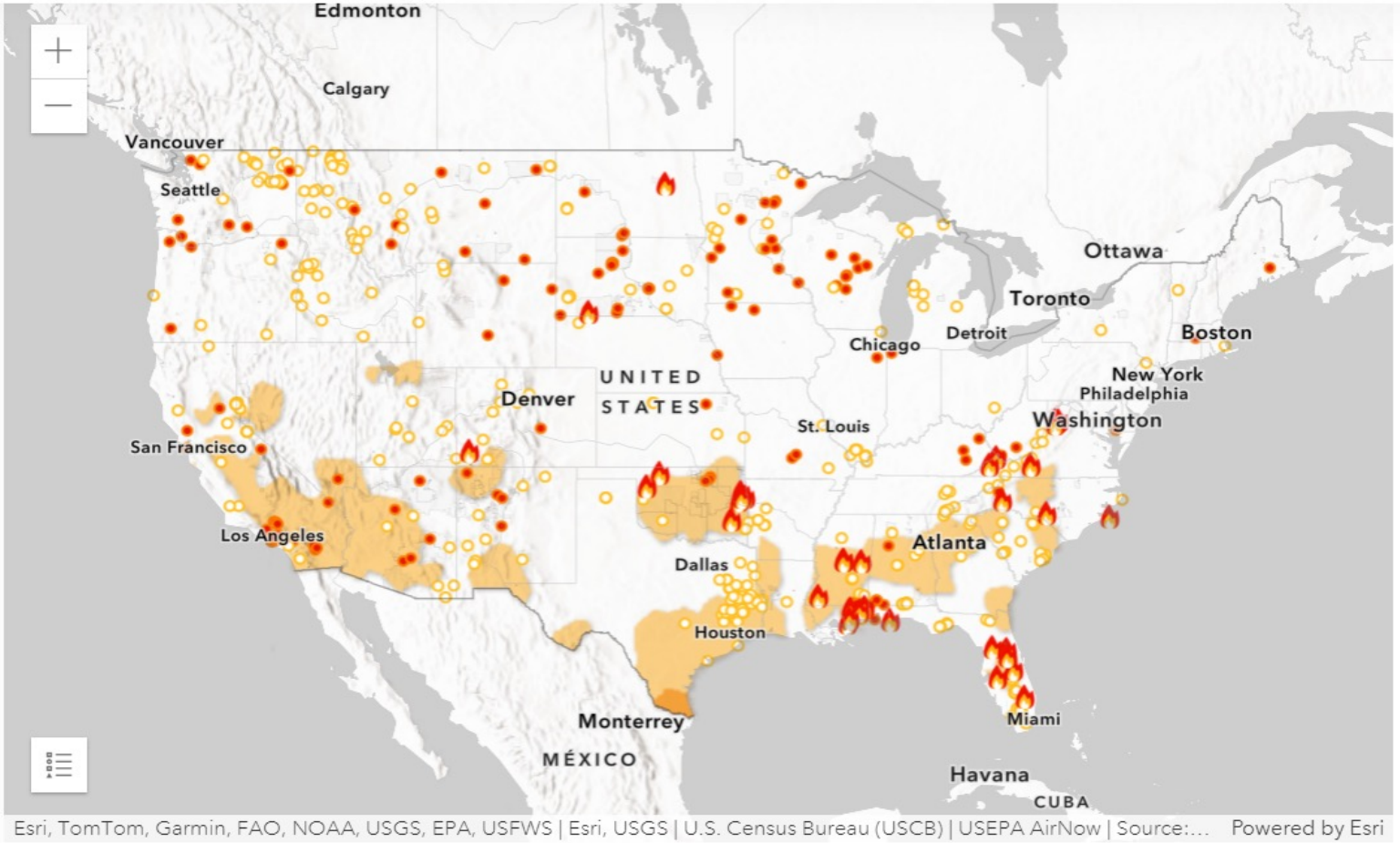
People experiencing drought 19,827,159

Source: NOAA/NIDIS Drought.gov

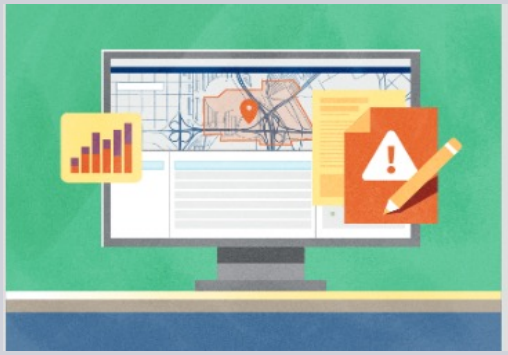
Inland Flooding

People under flash flooding alerts 1,660,486

Source: NOAA National Weather Service



Assessing and Addressing Climate Hazards



Check Exposure

Use the CMRA Assessment Tool to discover how temperature, precipitation, and flooding conditions are projected to change in the future.

Generate hazard reports to document how climate may impact future projects and/or to inform your mitigation needs assessment.

Perform Analysis

Access GIS-ready data organized by hazard to perform more custom analysis.

Consult authoritative data and information products curated from federal agencies and trusted partners to support a range of mapping and analysis needs.

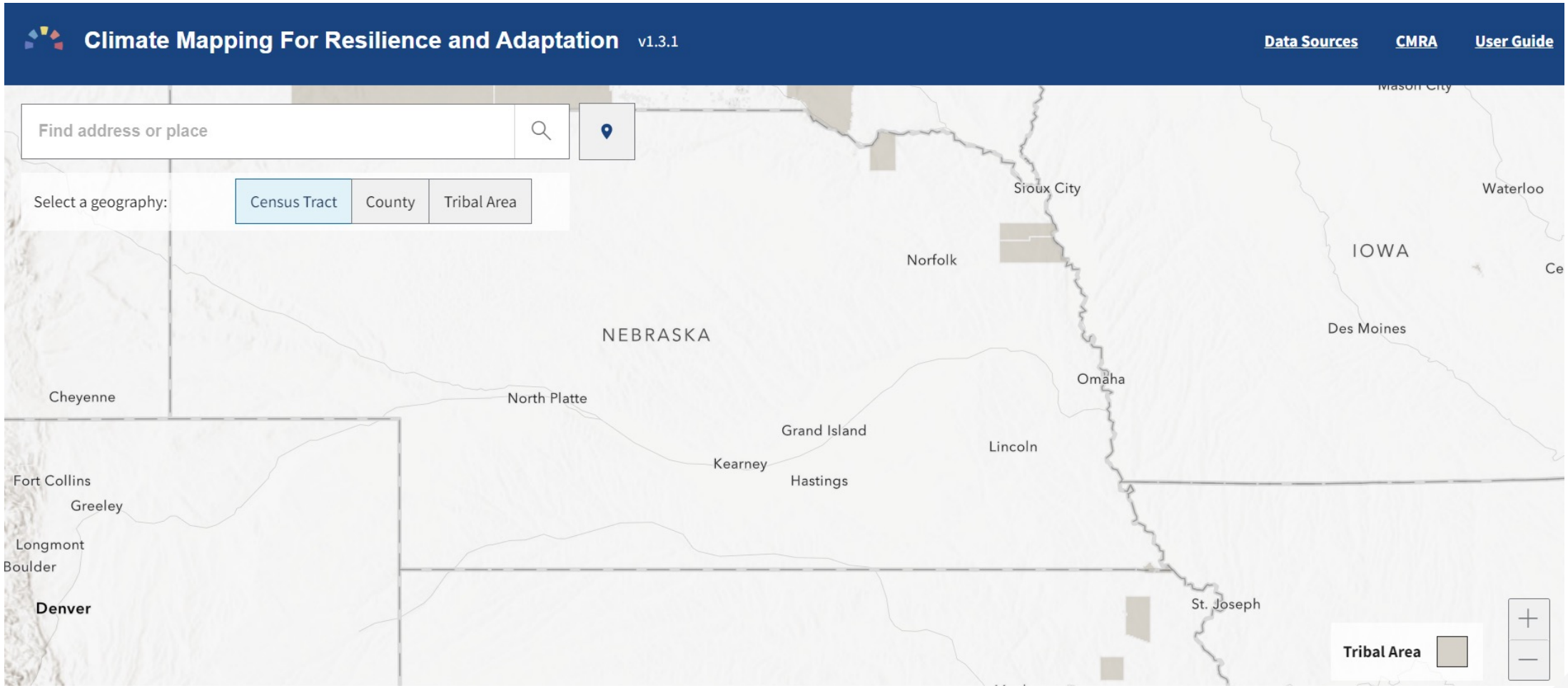
Create Proposal

Use the Steps to Resilience framework described in the Climate Resilience Toolkit to create a detailed, data-driven proposal to support local resilience projects.

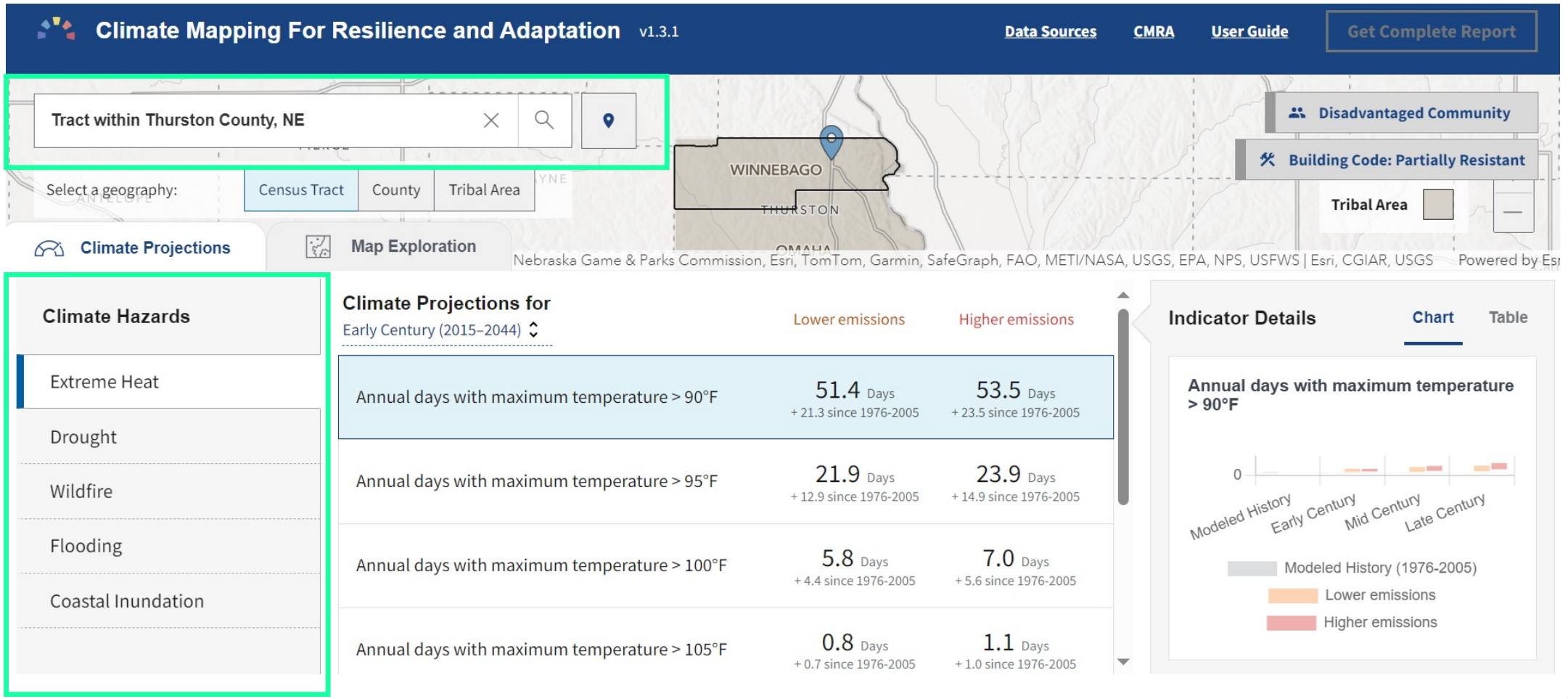
Explore resources in CMRA to identify funding opportunities for which your community may be eligible.

Access the CMRA Assessment Tool

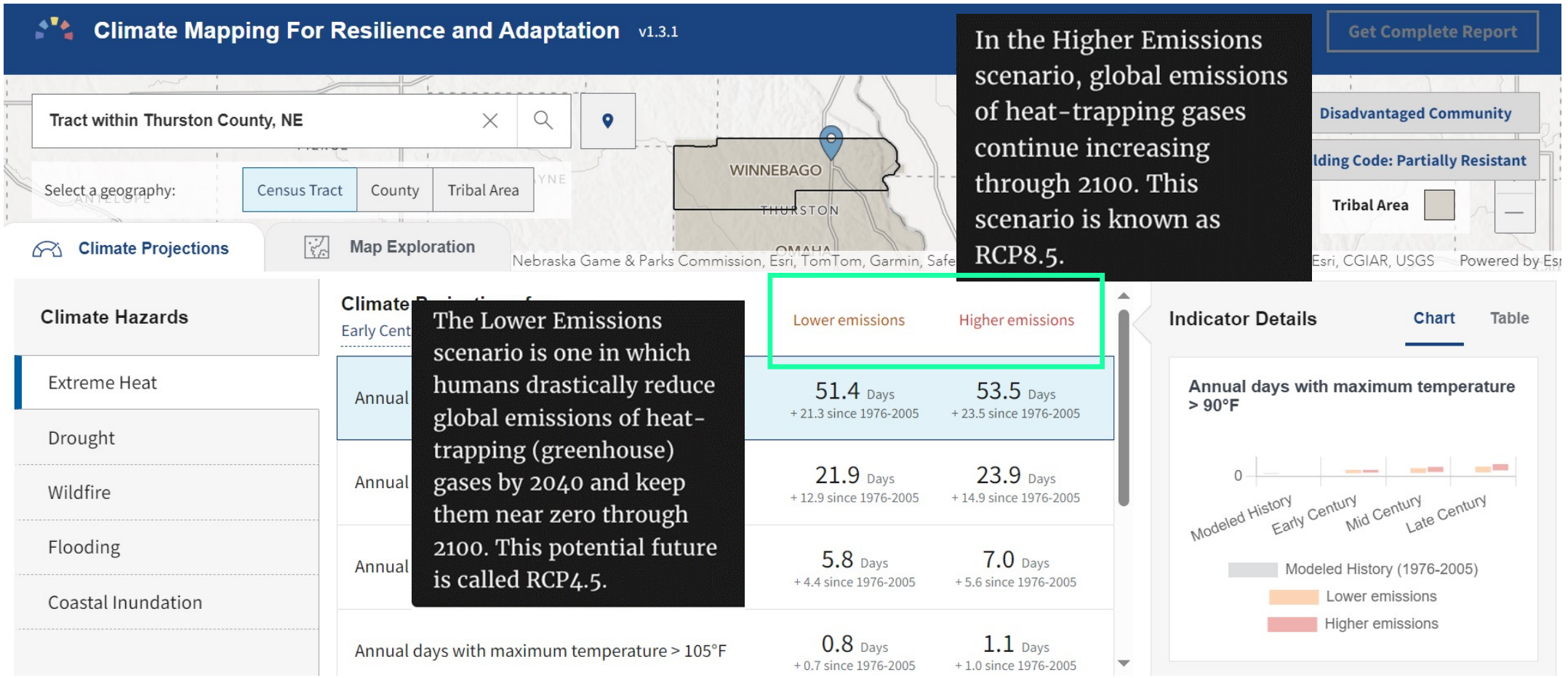
Select a Geography: Census Tract, County, or Tribal Area



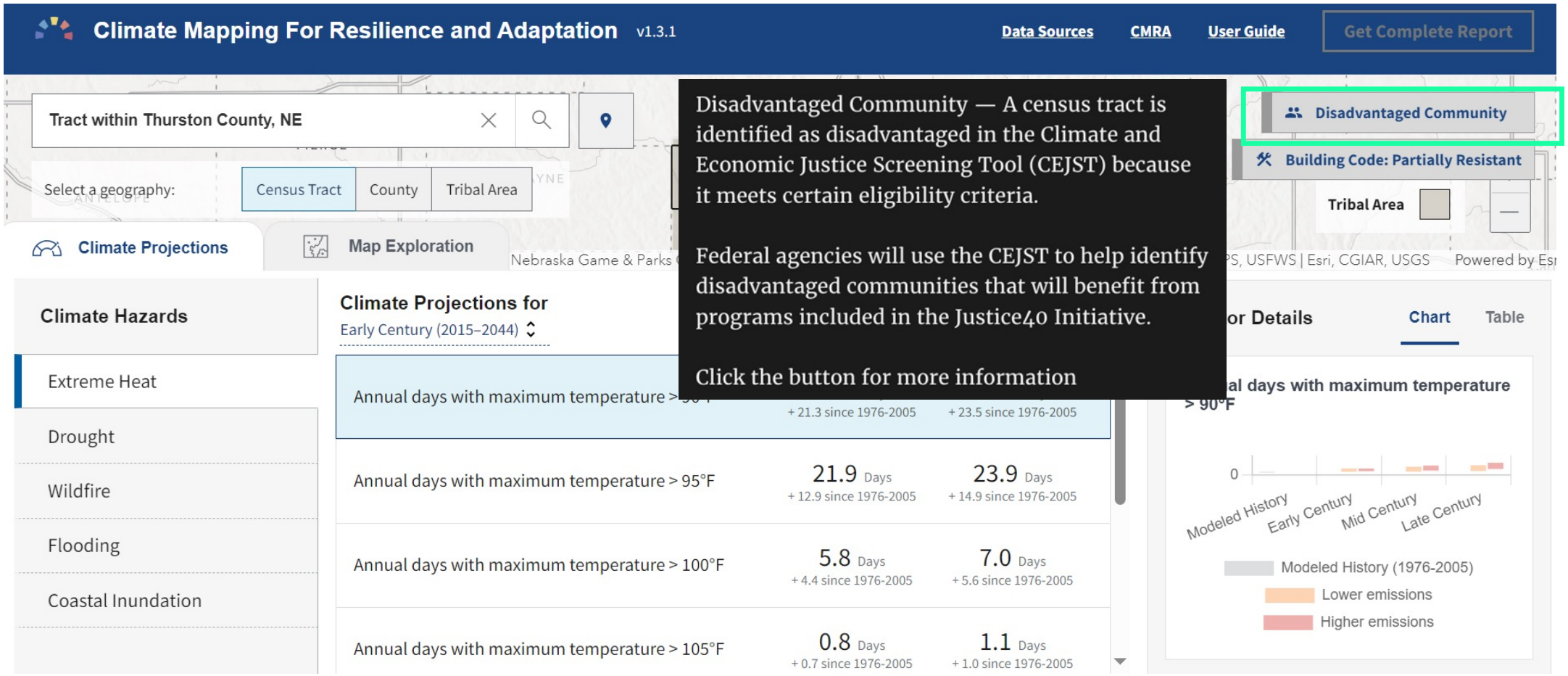
Choose Your Location & Hazard Type



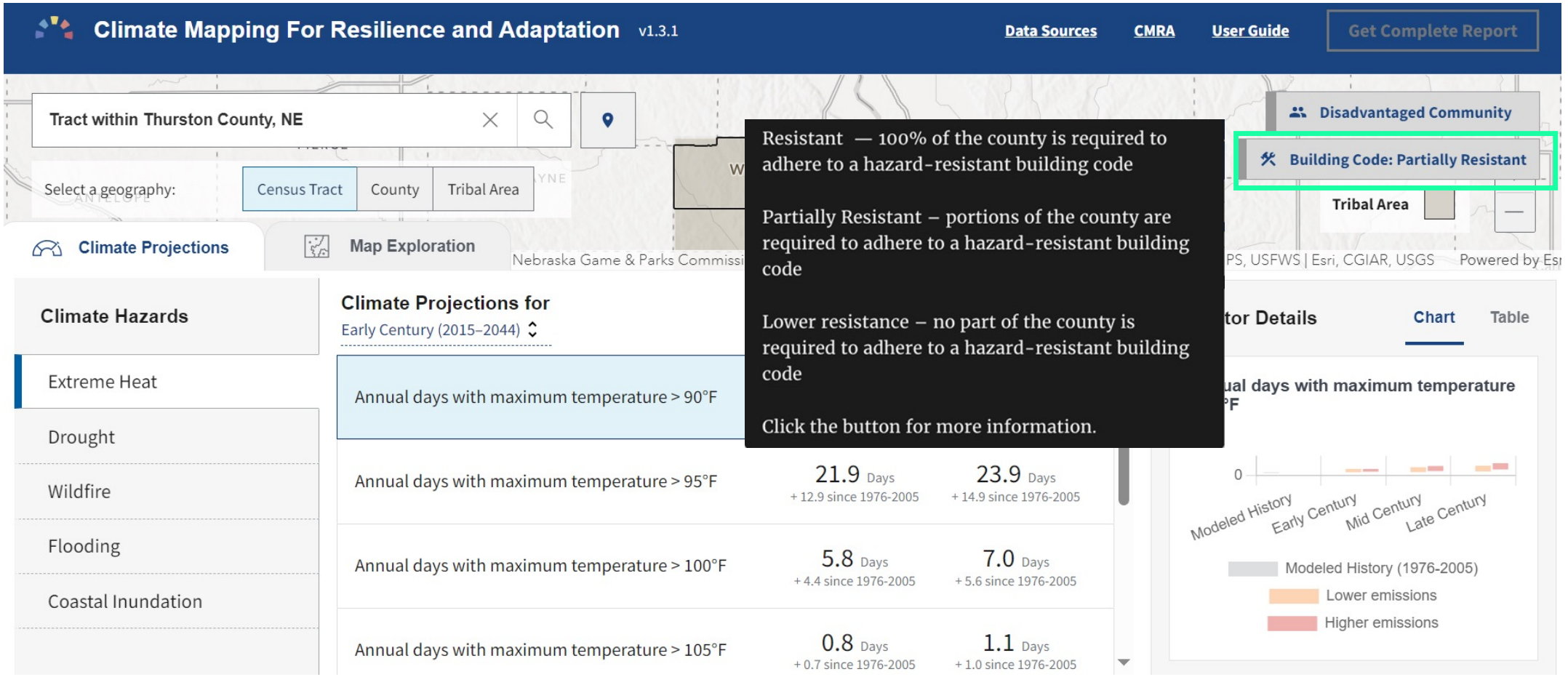
Understand the Output: Emission Scenarios



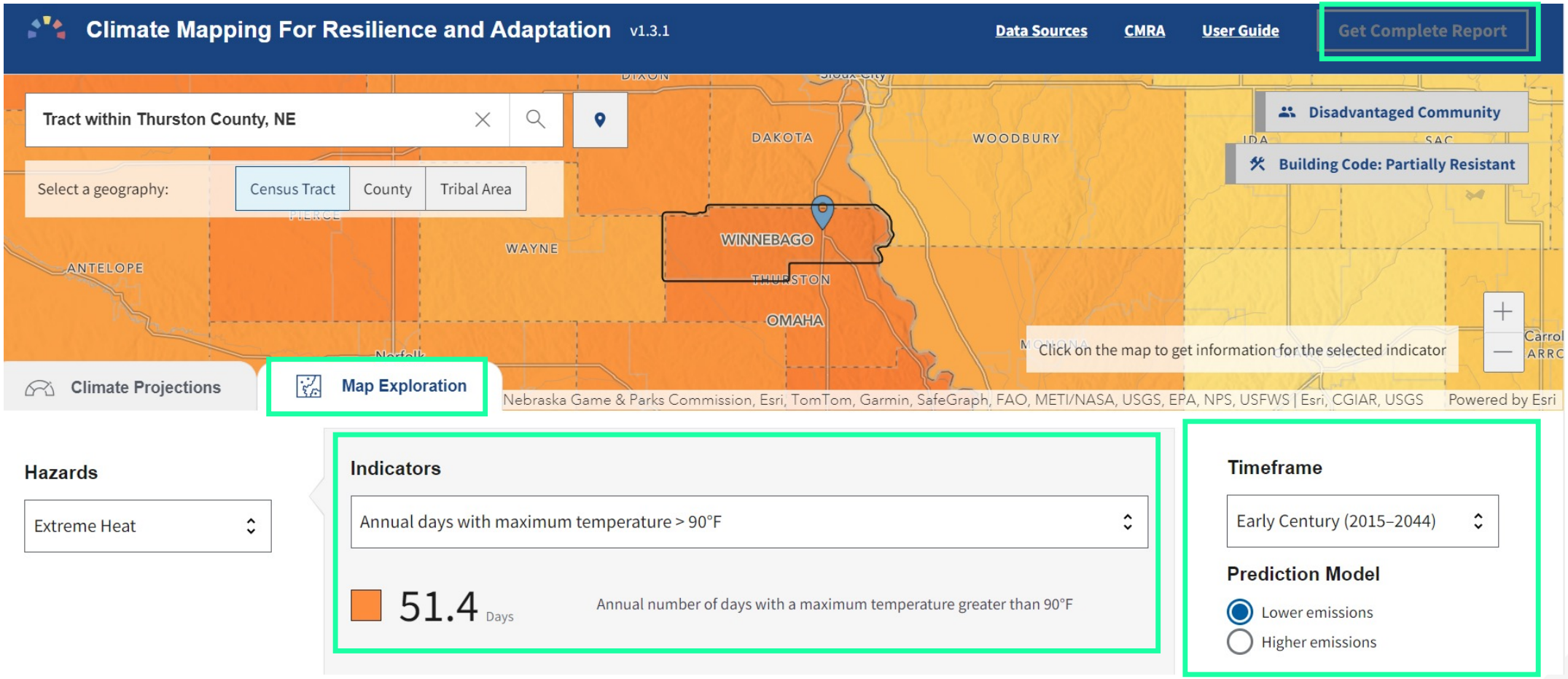
Understand the Output: Disadvantaged Communities



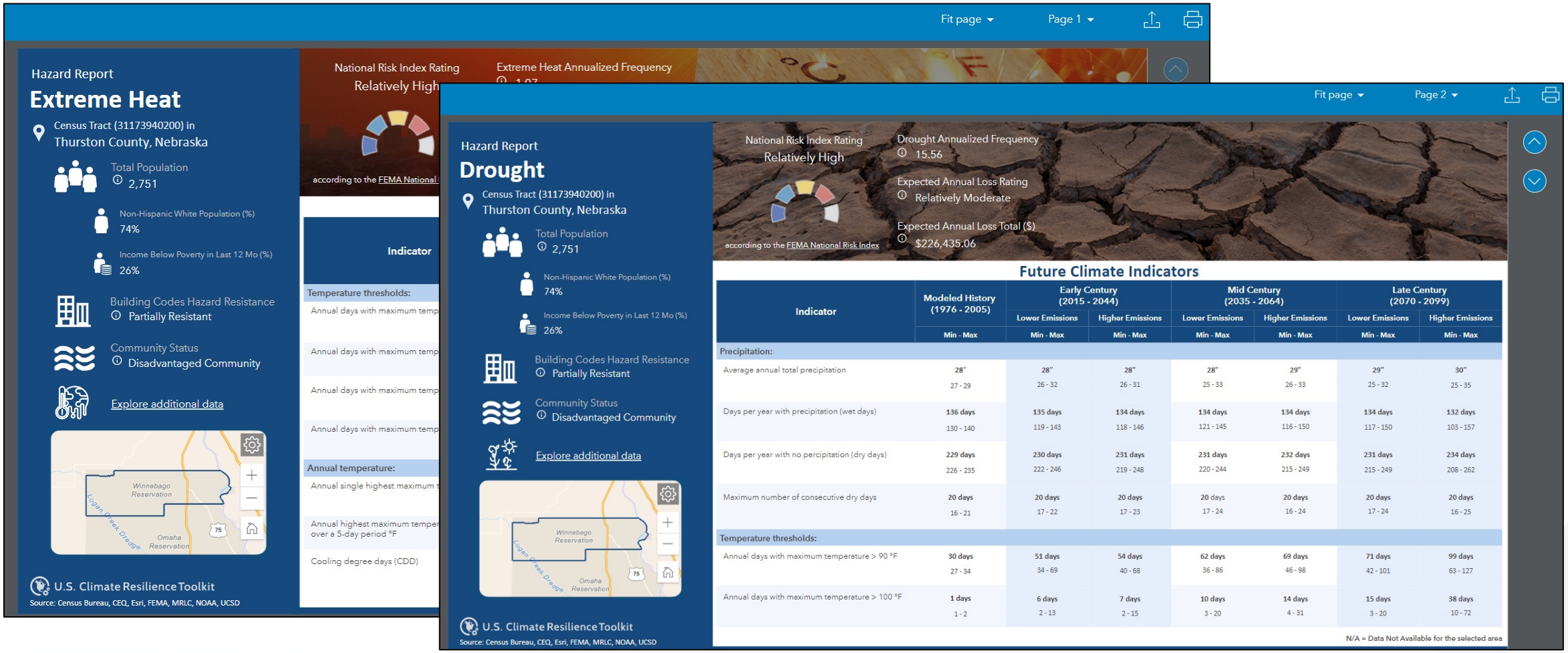
Understand the Output: Building Codes



Customize the Risk Assessment & Generate a Report

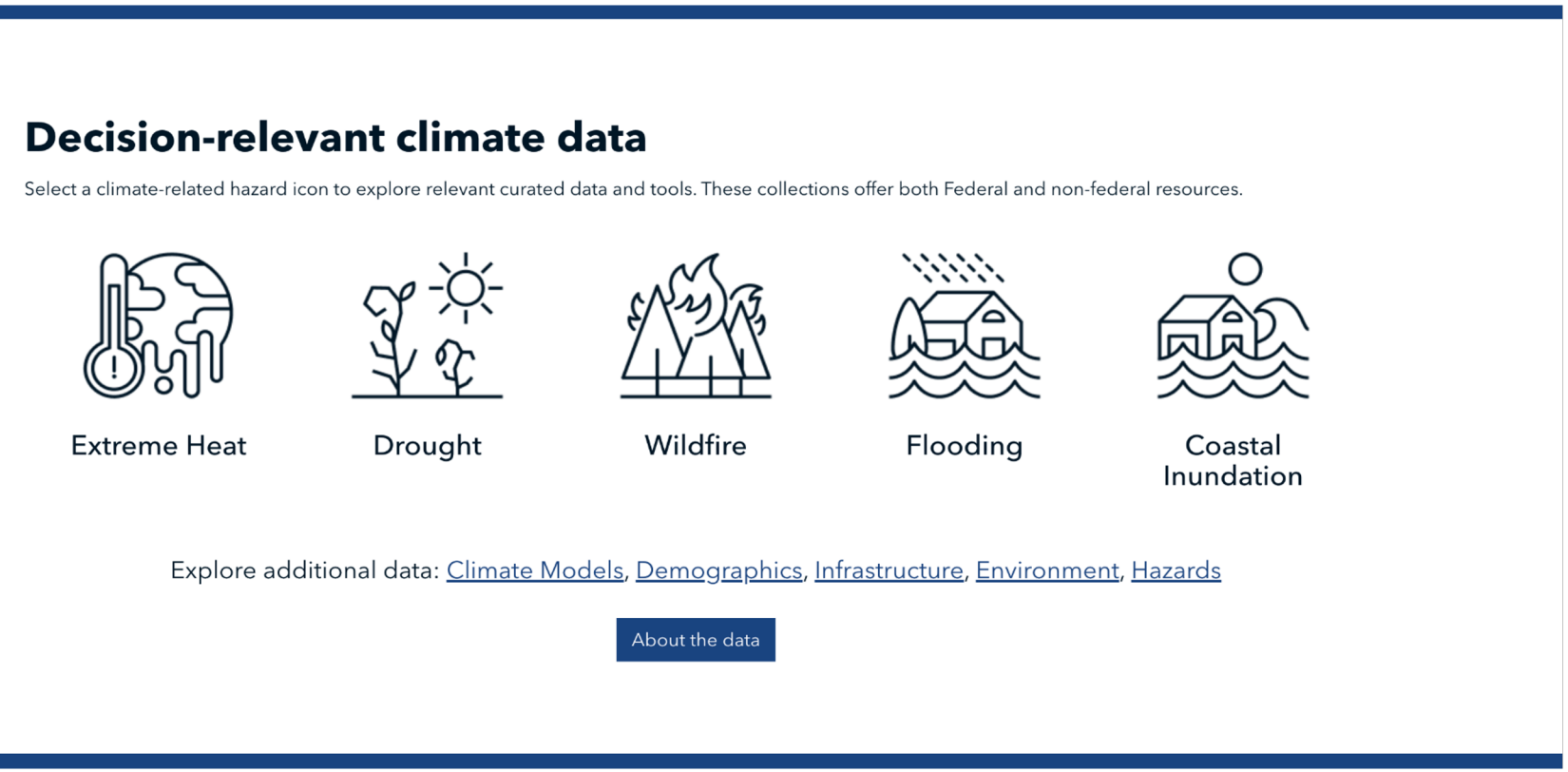


The 5-page Hazard Reports Are .Html Files That Can Be Bookmarked, Shared, or Printed



CMRA: Decision-relevant Climate Data

- Access additional federal and non-federal datasets that can help you understand your exposure to climate-related hazards.

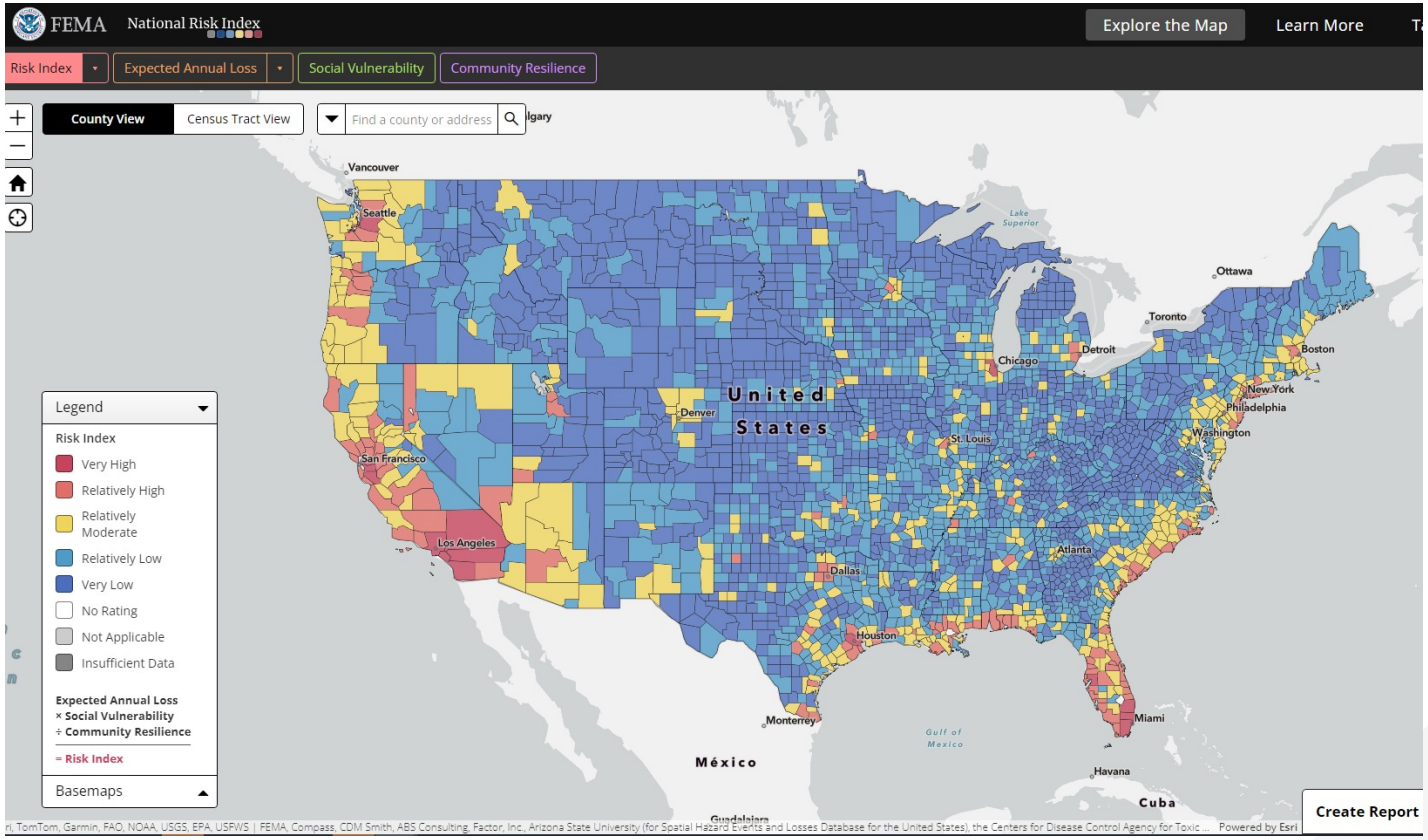


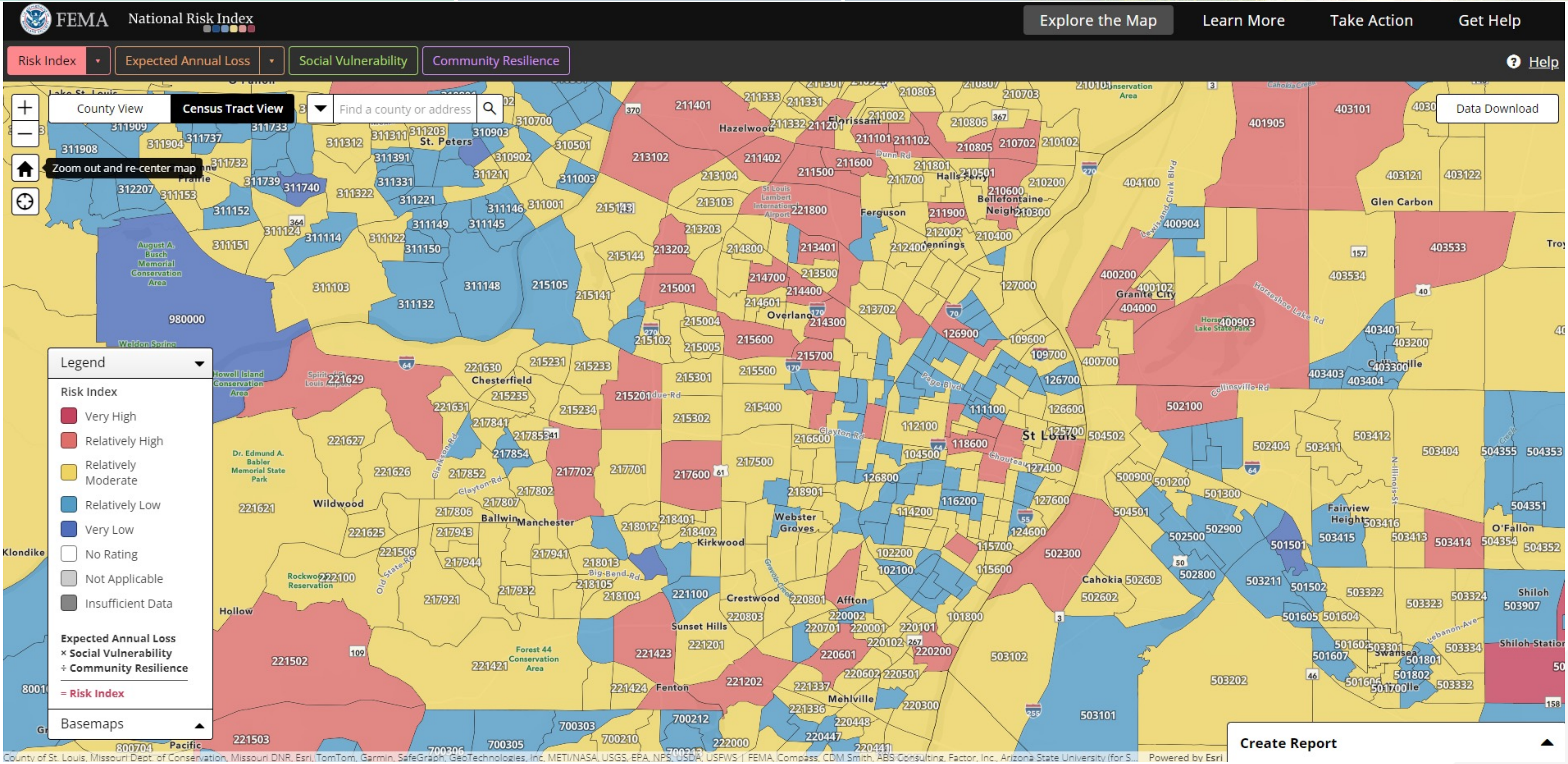
National Risk Index (FEMA)

FEMA's National Risk Index

- User friendly interactive tool that shows which communities are most at risk to 18 natural hazards
- Includes data at county and census tract levels
- Risk Index scores presented as composite score for all 18 hazard types and individual scores for each hazard type
- Risk Index Equation:

Expected Annual Loss
× Social Vulnerability
÷ Community Resilience
= Risk Index




FEMA
National Risk Index
Explore the Map
Learn More
Take Action
Get Help
Risk Index
Expected Annual Loss
Social Vulnerability
Community Resilience
Help
County View
Census Tract View
Find a county or address
Data Download
Zoom out and re-center map
Legend
Risk Index
Very High
Relatively High
Relatively Moderate
Relatively Low
Very Low
No Rating
Not Applicable
Insufficient Data
Expected Annual Loss
× Social Vulnerability
÷ Community Resilience
= Risk Index
Basemaps
Create Report
Powered by Esri

Risk Index Report

National Risk Index

May 02, 2024

St. Louis City, Missouri

Summary

Risk Index is **Relatively Moderate**

Score **95.4**

Expected Annual Loss is **Relatively Moderate**

Score **95.0**

Social Vulnerability is **Very High**

Score **85.2**

Community Resilience is **Relatively High**

Score **61.1**

While reviewing this report, keep in mind that low risk is driven by lower loss due to natural hazards, lower social vulnerability, and higher community resilience.

What's the Risk Index for the Census Tract We Are Standing in Right Now?

Census tract 29510125500

St. Louis City, Missouri

Risk Index

Risk Index is Relatively Moderate

Score	83.18

National Percentile 83.18

Percentile Within Missouri 86.60

0 100

The Risk Index rating is **Relatively Moderate** for **Census tract 29510125500** when compared to the rest of the U.S.

Earthquake	**Relatively Moderate** Score **88.7**
Hail	**Relatively Low** Score **69.9**
Heat Wave	**Very High** Score **98.7**
Hurricane	**Very Low** Score **20.9**
Ice Storm	**Relatively Moderate** Score **87.2**
Landslide	**Relatively Moderate** Score **90.9**
Lightning	**Relatively Low** Score **34.1**
Riverine Flooding	No Rating Score **0.0**
Strong Wind	**Relatively Moderate** Score **75.1**
Tornado	**Very High** Score **94.0**
Tsunami	Not Applicable
Volcanic Activity	Not Applicable
Wildfire	No Rating Score **0.0**
Winter Weather	**Very High** Score **99.2**

Reducing Administrative Burden Takeaways

Reducing Administrative Burden Takeaways

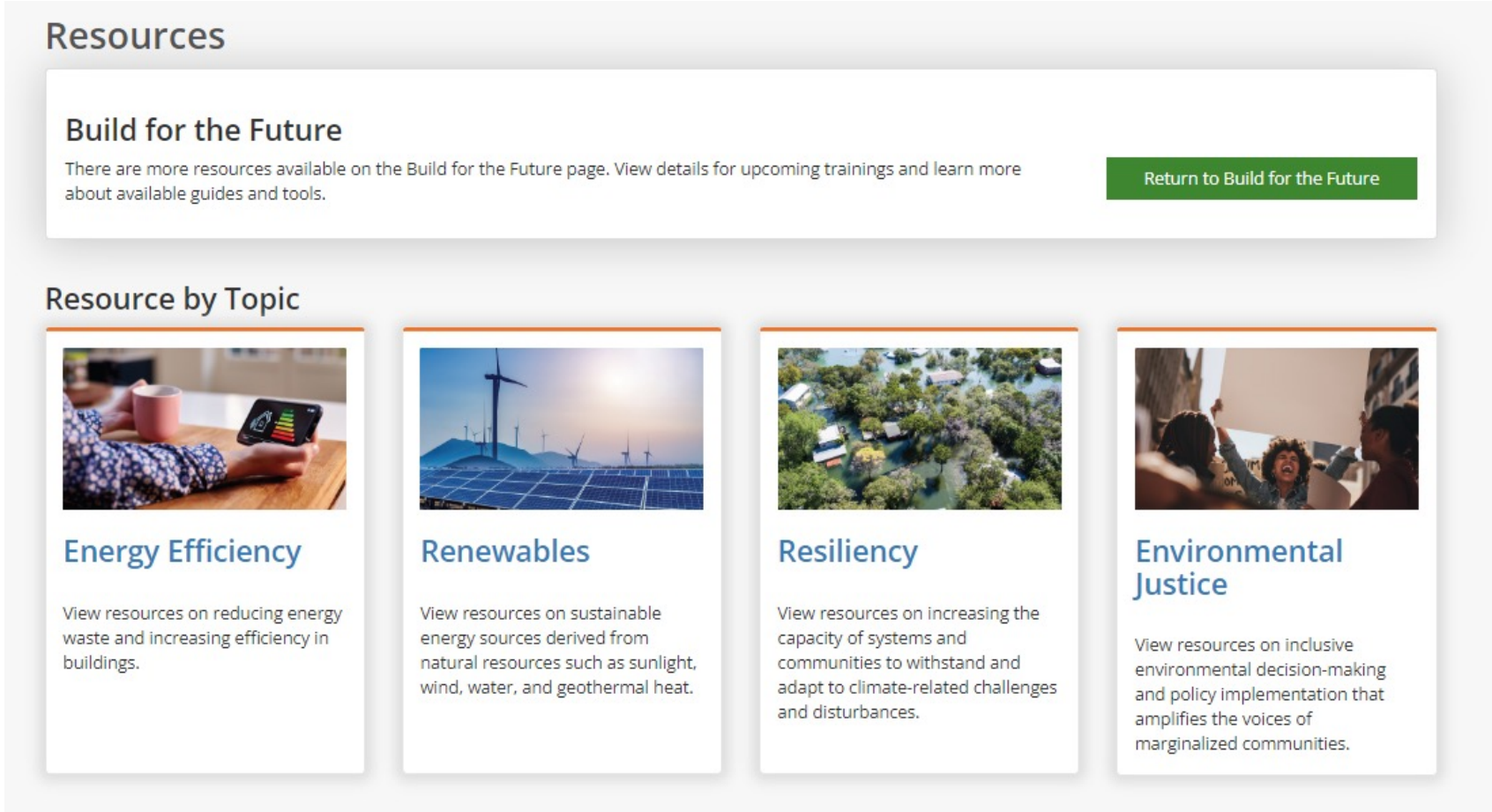
- When identifying current and future risks for a mitigation needs assessment, pull information from your state or local FEMA-approved Hazard Mitigation Plan (HMP).
- To further inform a mitigation needs assessment, simply extract local hazard data from federal tools, such as NOAA's Climate Mapping for Resilience & Adaptation (CMRA) Assessment Tool and FEMA's National Risk Index.

Resources

Resources

- Hazard Mitigation Planning | FEMA.gov
- Fifth National Climate Assessment (globalchange.gov)
- U.S. Climate Resilience Toolkit | U.S. Climate Resilience Toolkit
- National Risk Index | FEMA.gov
- Climate Mapping for Resilience and Adaptation
- Fact Sheet: HUD Prioritizes Resilient, Efficient, and Green Homes and Community Development | HUD.gov / U.S. Department of Housing and Urban Development (HUD)
- Resilient Community Planning: Engaging with Partners and Keynote Address - HUD Exchange

HUD Exchange Build for the Future Page



Library of Resources

- Resources and tools for efficient building, renewable energy integration, climate resiliency and environmental justice

HUD'S New Extreme Heat Page

Extreme heat kills more people than any other weather-related hazard. In 2023, the world recorded the warmest year on record. Across the United States, heat records were broken, including Phoenix, Arizona experiencing 31 consecutive days above 110°F, and Chicago, Illinois reaching a heat index of 120°F.

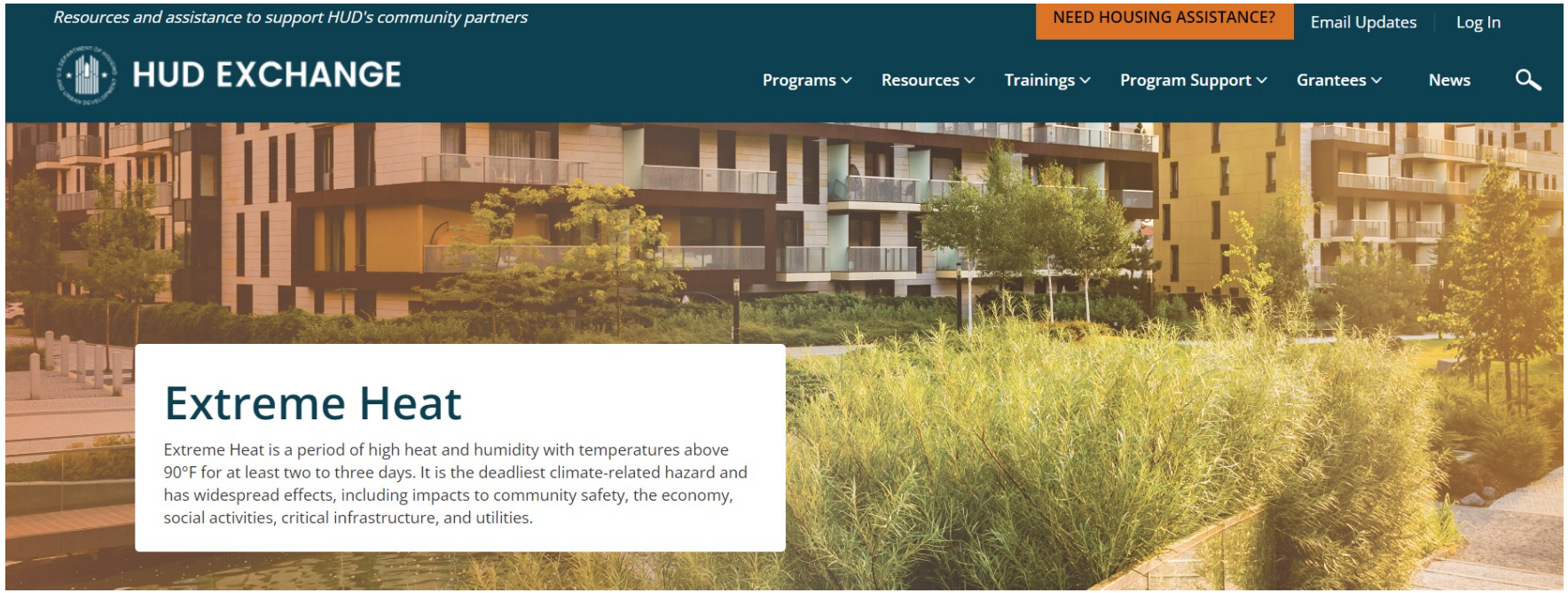
At HUD, increasing awareness around current and future impacts of extreme heat on the communities and people we serve is a priority. HUD is developing technical assistance resources focused on extreme heat, working on program policy updates, and coordinating with federal agency partners on extreme heat initiatives including actively participating in the National Integrated Heat Health Information System (NIHHIS).

Feedback

View the page here!

- Resource compiled to help communities prepare for and respond to extreme heat events!

HUD Exchange Extreme Heat Page



View the page here!

- Extreme Heat Quick Guide
- Funding Navigator
- Resources sorted by action outcome (learn, plan, act)

Thank You!

If you have any questions, please feel free to send an email to ODR's Policy Division at ODRPolicyDivision@hud.gov.

Next Session

The next sessions will begin at 4:00 p.m. CDT.

Fraud Risk Management – An Overview: Grand Ballroom DEF

Effective Anti-Displacement Strategies to Safeguard Communities During Recovery: Grand Ballroom ABC