



# 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



**Matthew Toland**

He/Him

HUD Office of Disaster  
Recovery



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He/Him

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



A photograph of the St. Louis Gateway Arch and the city skyline, framed within a white hexagonal border. The arch is a large, white, catenary-shaped structure. The skyline includes various skyscrapers and the American flag flying in front of the arch.

# **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

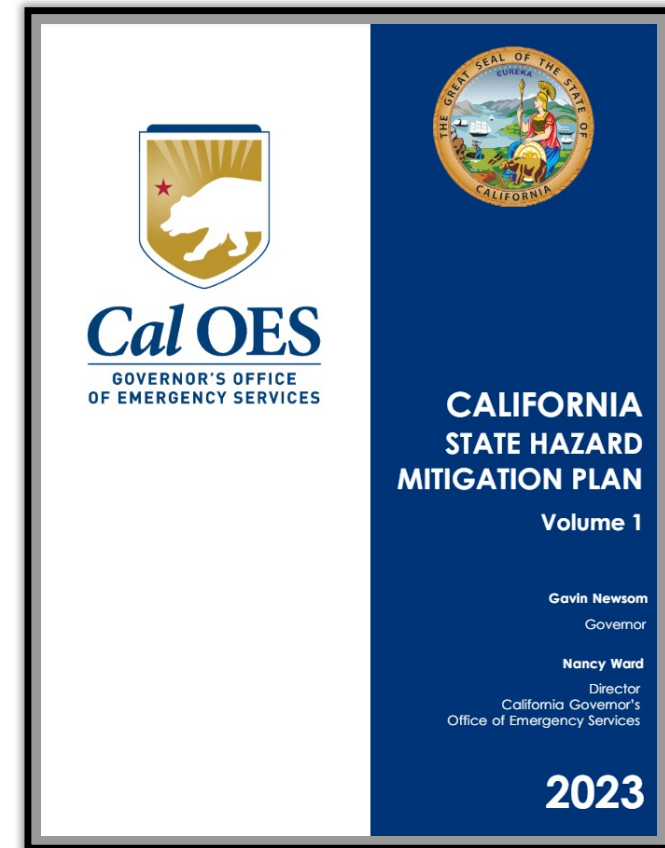
- Indispensable services:
  - Enable continuous operation of critical business and government functions
  - Are critical to human health and safety or economic security
    - E.g., [FEMA Community Lifelines](#)



# Mitigation Needs: FEMA-approved HMP



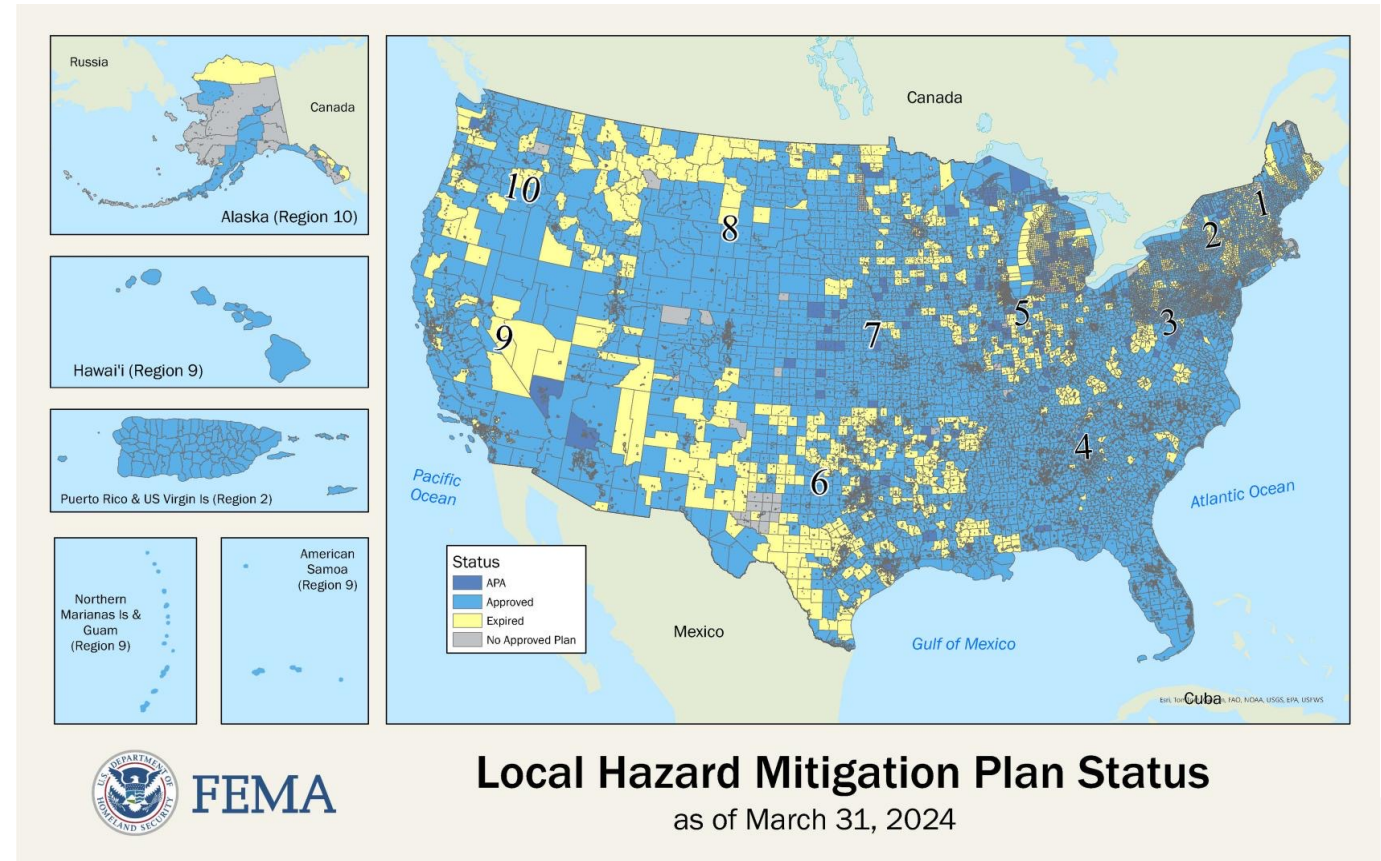
- Must use the risks identified in current FEMA-approved state or local Hazard Mitigation Plan (HMP) at a minimum.
  - Reduces effort identifying natural hazards affecting your communities.
  - Builds upon existing actions to reinforce resilience and long-term risk reduction.



**Example:** [California's 2023 State Hazard Mitigation Plan](#)

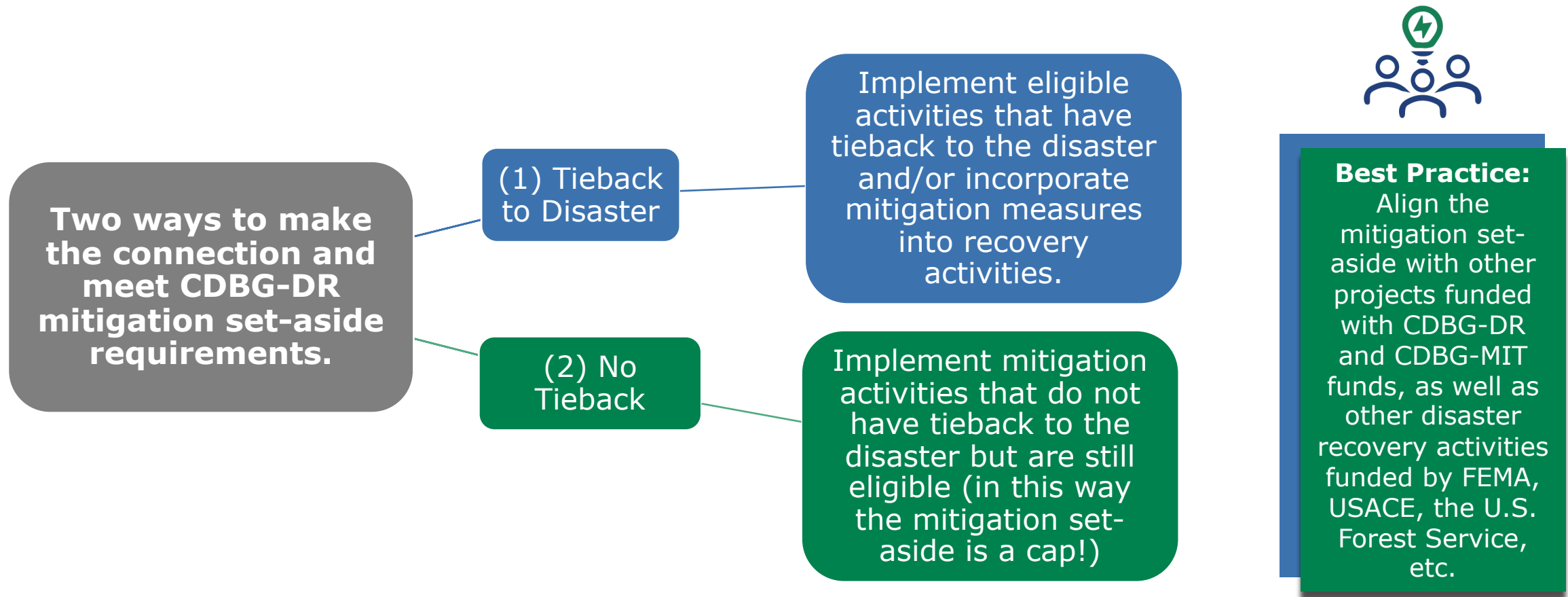
# Review your Hazard Mitigation Plan (HMP)

- 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](https://www.fema.gov/hazard-mitigation-planning)
  - [Hazard Mitigation Plan Status](#)





# Connect Activities to Mitigation Needs Assessment



A photograph of the St. Louis Gateway Arch and the city skyline, framed within a white, irregular hexagonal shape. The arch is a large, white, catenary-shaped structure. The skyline includes various skyscrapers and a flagpole with the American flag. The foreground shows a green field and some trees.

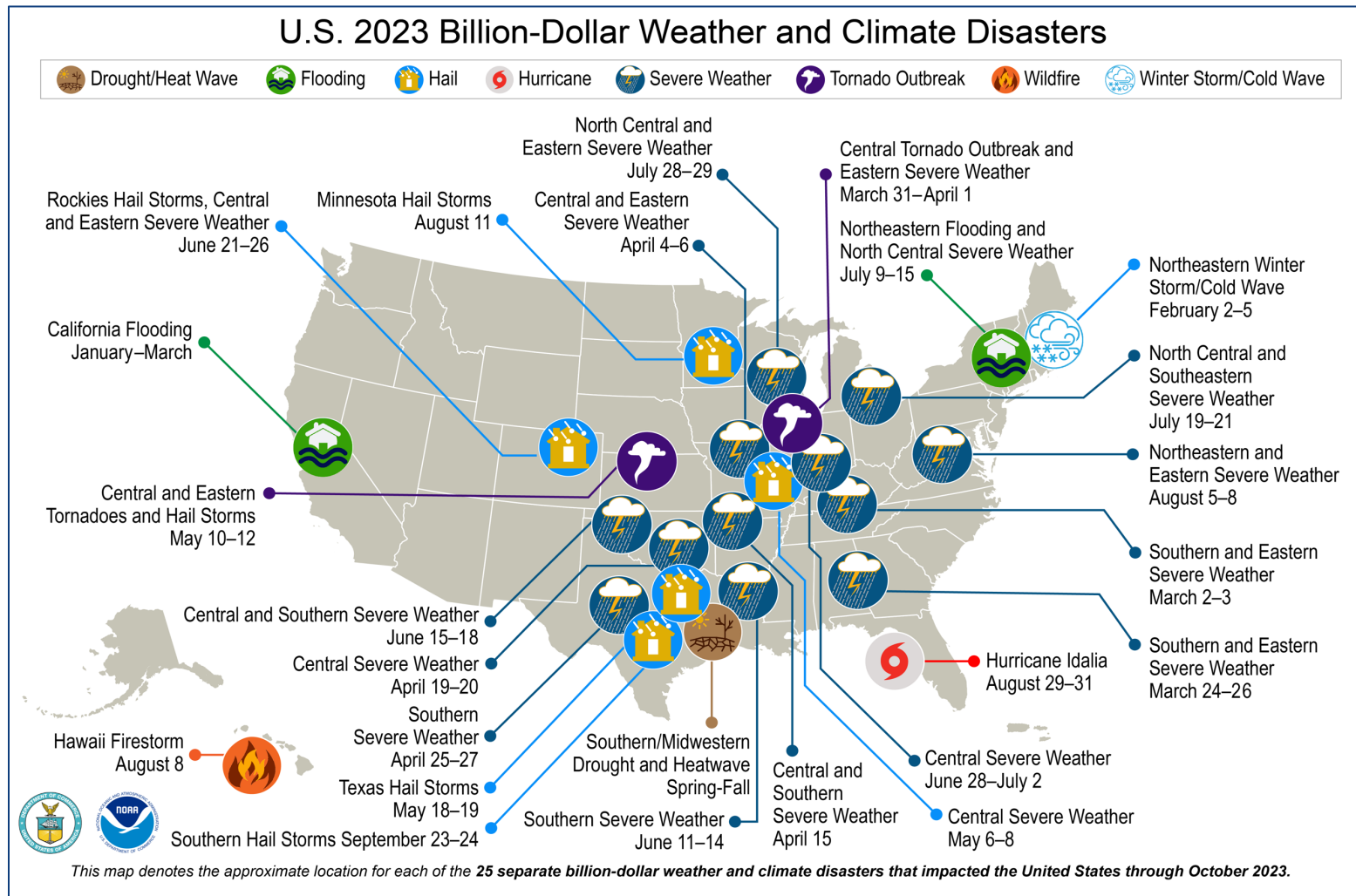
# Federal Climate Services: Resources, Data, and Tools





# 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



\$18 billion

1980s



\$28 billion

1990s



\$54 billion

2000s



\$85 billion

2010s

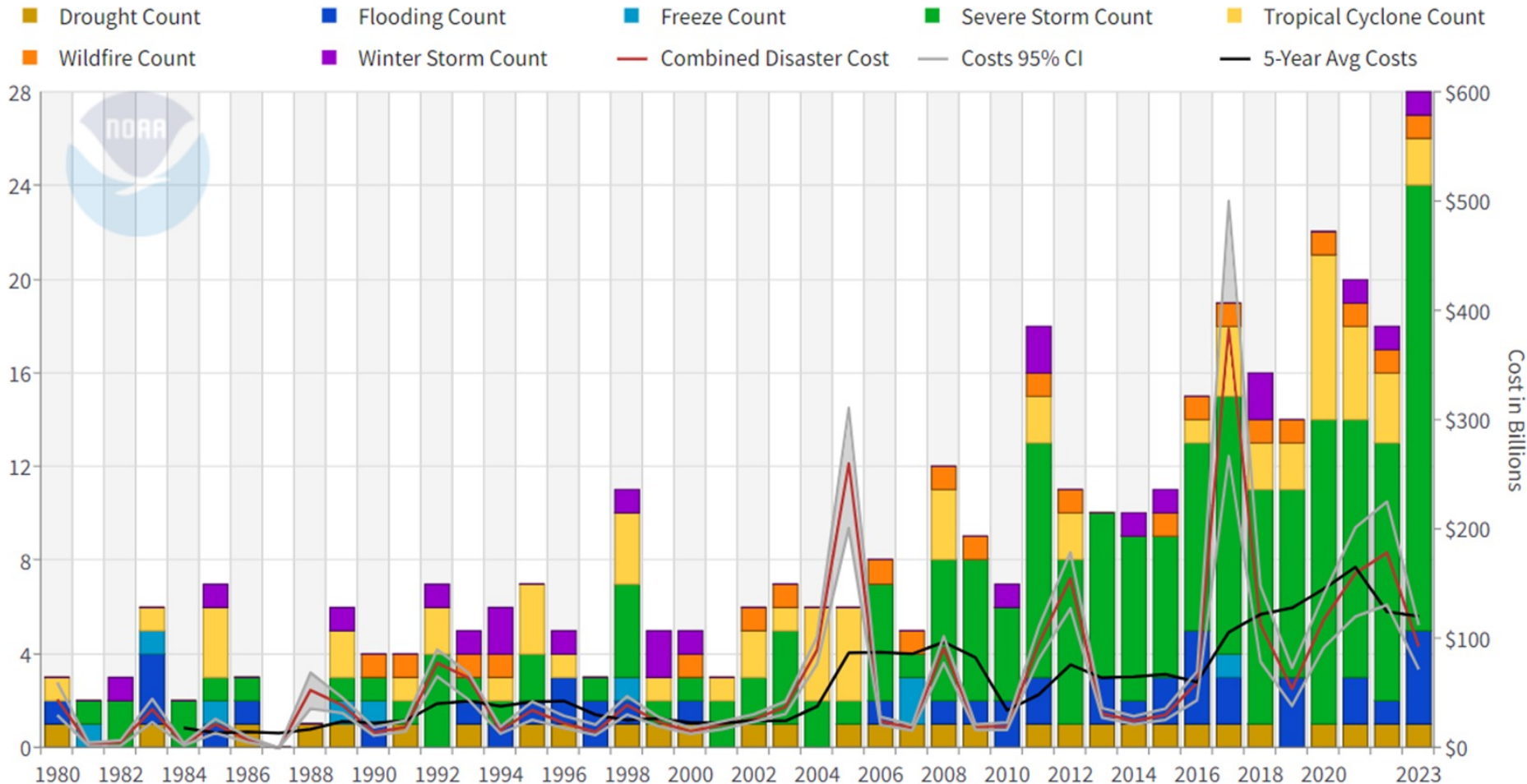
Source: NOAA  
NCEI



# U.S. Billion-dollar Event Frequency (1980–2023)

## Annual Cost, 5-year Cost Average

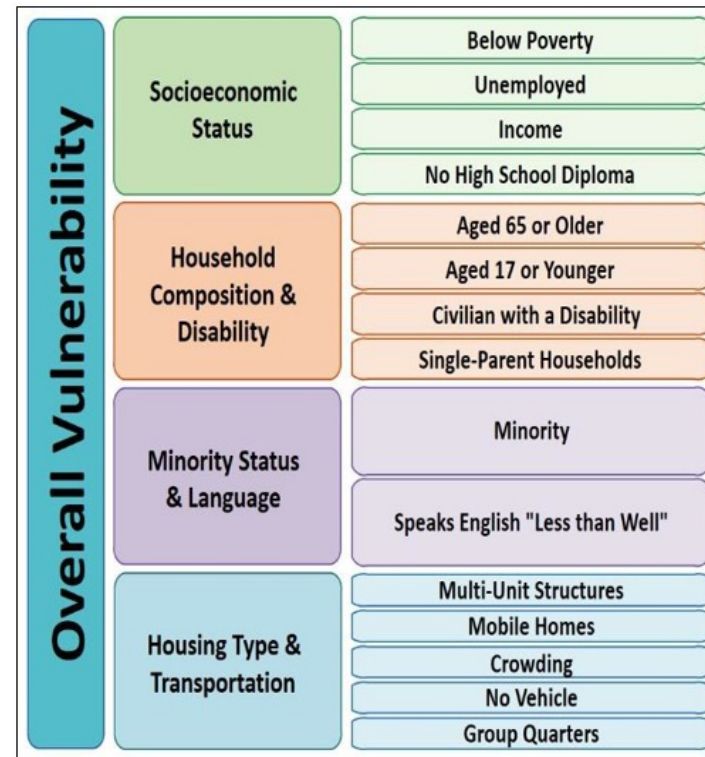
United States Billion-Dollar Disaster Events 1980-2023 (CPI-Adjusted)



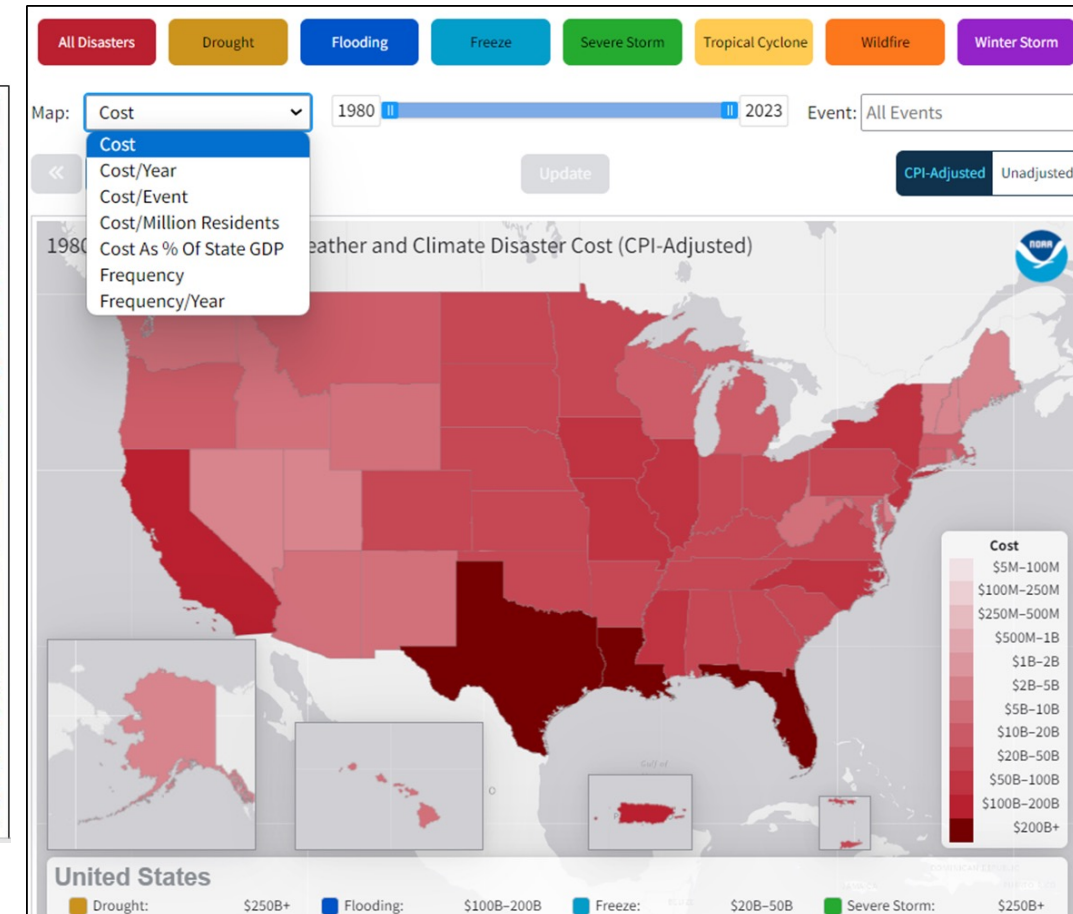
- Western wildfires, severe storms, inland flooding and hurricane costs all on the rise
- Disaster costs over the last 7 years (2017-2023) = **\$1.091 trillion**
- U.S. disaster losses are growing ~6% per year, more than twice as fast as gross domestic product (NIBS, 2023)

# 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/>







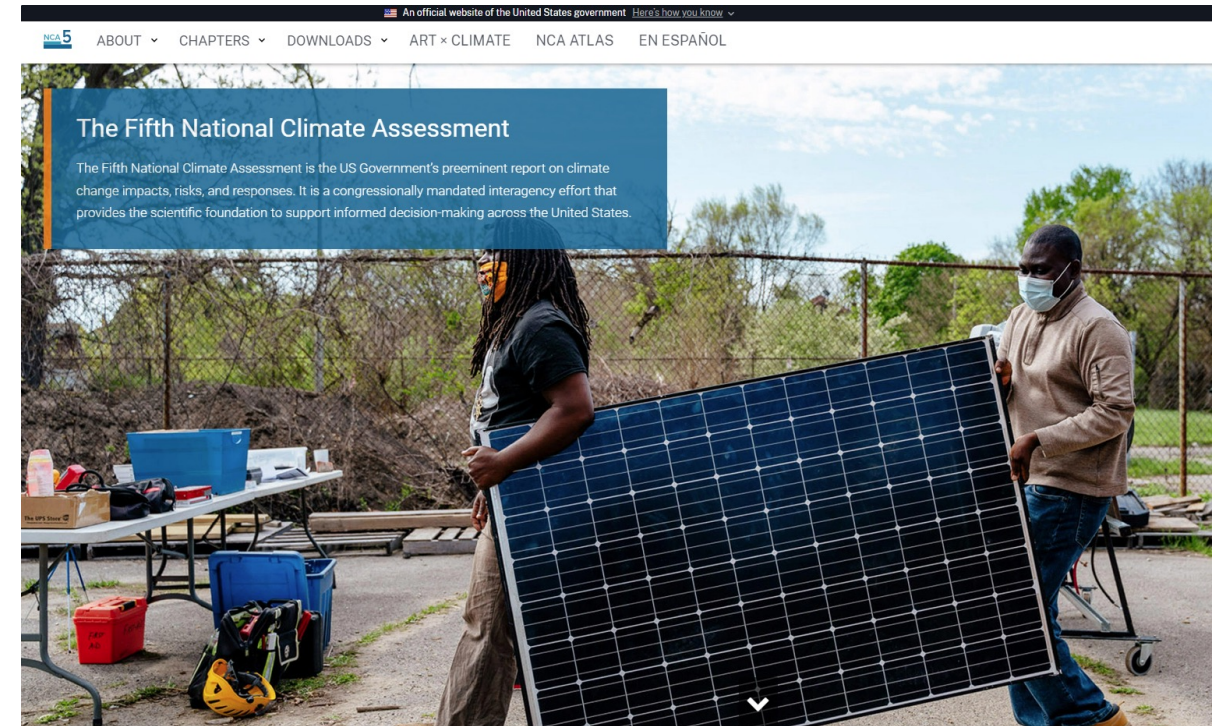
# National Climate Assessment

# Fifth National Climate Assessment



- Fifth National Climate Assessment

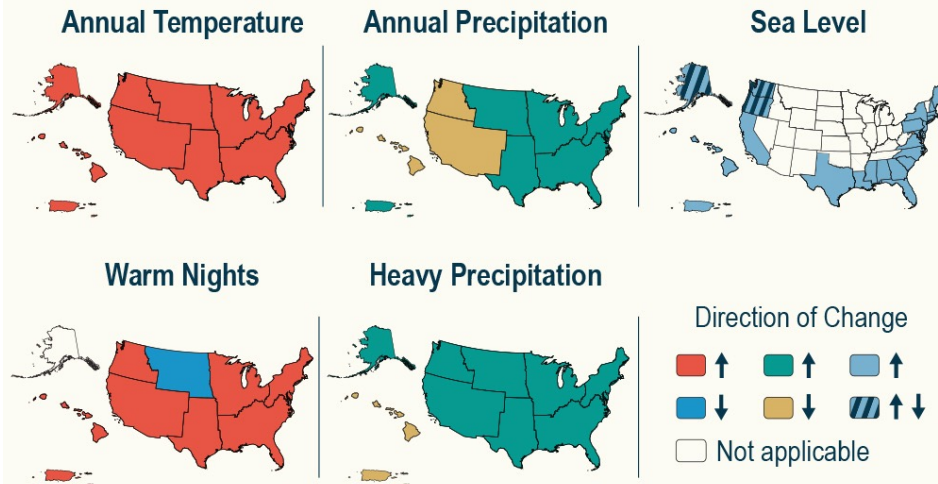
- U.S. Government's preeminent report on climate change impacts, risks, and responses
- A congressionally mandated interagency effort that provides the scientific foundation to support informed decision-making across the U.S.





# Climate Change Risks and Opportunities in the US

Climate change is happening now in all regions of the US



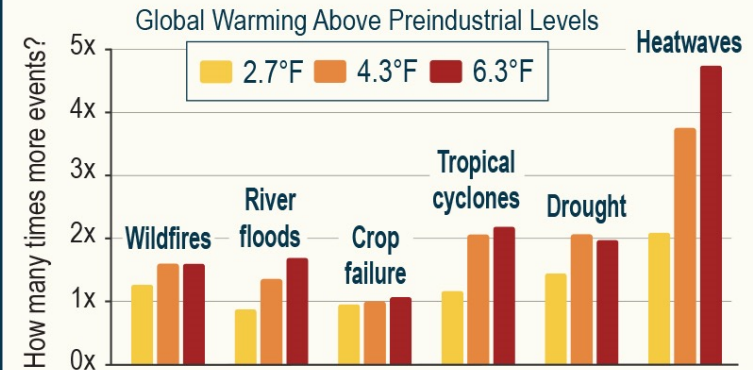
Each additional increment of warming leads to greater risks

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



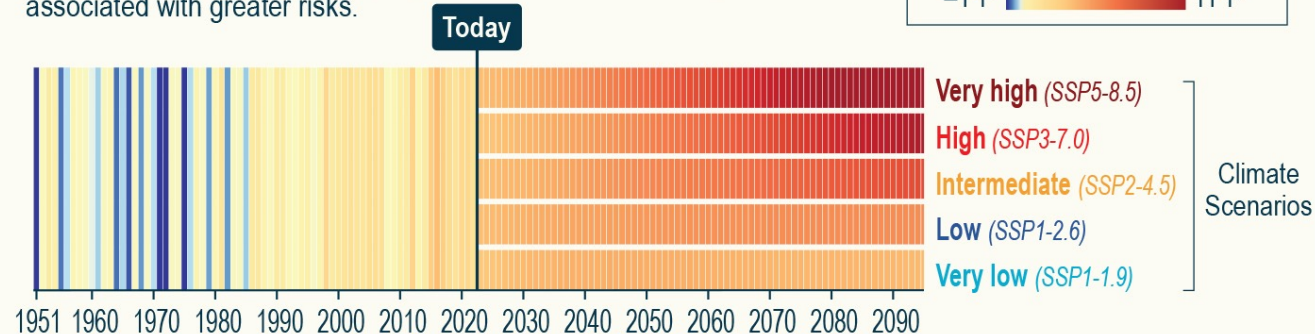
Without deeper cuts in global net emissions, climate risks to the US will continue to grow

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

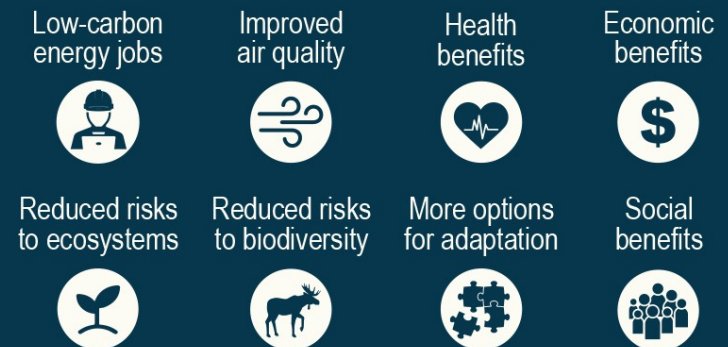


How much more the US warms depends on choices made today

► 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



# National Climate Assessment by Section/Topic

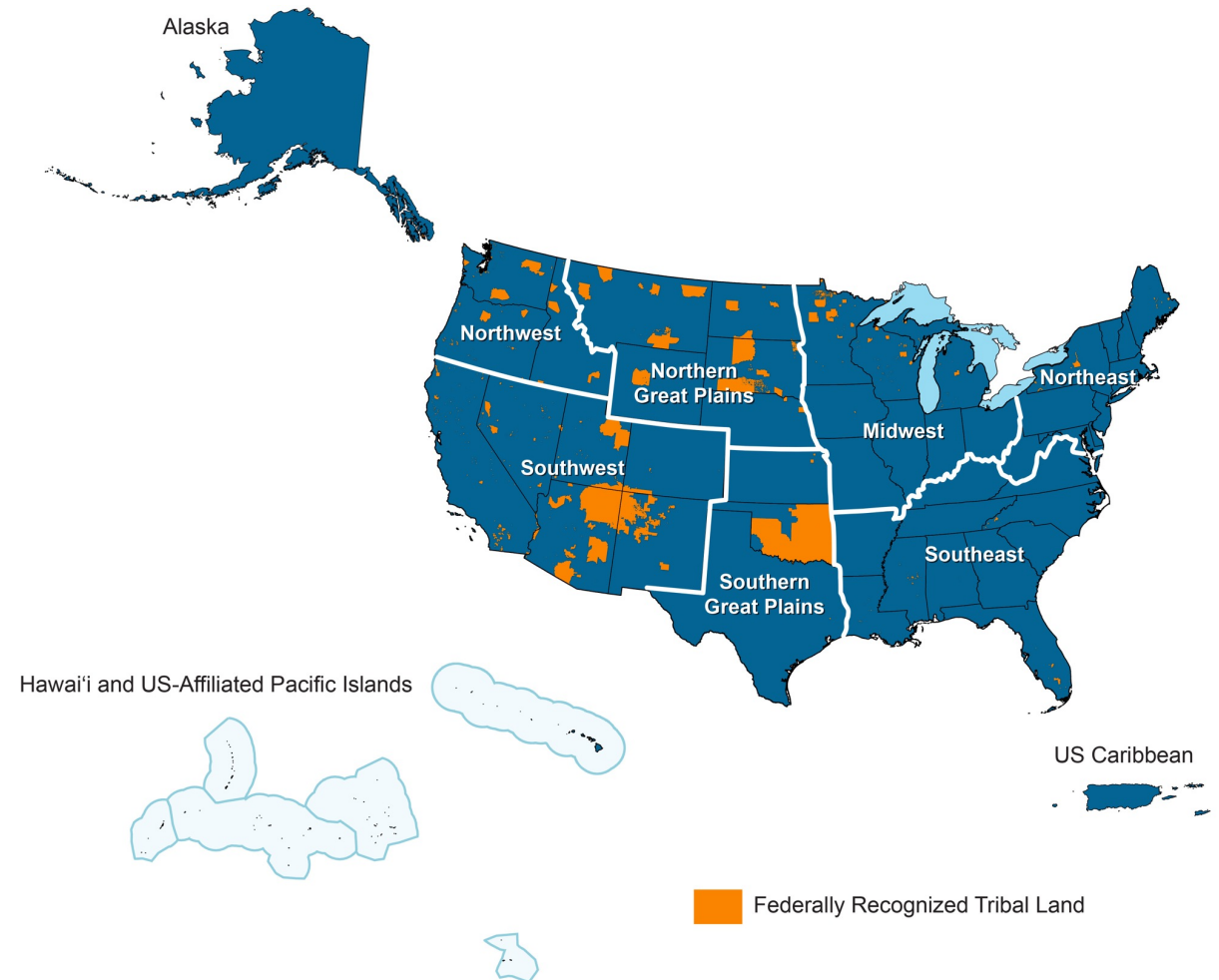
Overview

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.<sup>122, 123, 124, 125</sup>

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, <sup>126</sup> community/shared solar, energy-efficient lighting and appliances, monitoring and benchmarking, <sup>127</sup> grid-interactive buildings (see Ch. 5)
Codes and standards	Building ventilation, <sup>71</sup> cool and evaporative roofs, <sup>128</sup> vegetated roofs; <sup>129</sup> risk-reduction standards; resilient construction materials; <sup>130, 131</sup> electrification, energy efficiency, and other GHG emissions reductions <sup>132</sup>

Land-Use and Ecosystem Options	Examples
Gray infrastructure	High albedo/reflective pavements, coastal protection (such as seawalls), dams, flood controls, drainage (see Ch. <a href="#">9</a> )
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, <sup>133</sup> co-location of development with low-GHG transportation and technologies, <sup>134</sup> reduced encroachment on natural lands, fire management, land restoration
Migration and relocation	Managed retreat (see Chs. <a href="#">9</a> , <a href="#">16</a> , <a href="#">29</a> , <a href="#">31</a> )
Resource use	Improved water supply, reduced emissions from waste and wastewater
Urban Transport Options	Examples
Electric/fuel-efficient vehicles	Electric vehicle charging networks, <sup>135</sup> purchase and operation incentives, <sup>136, 137, 138</sup> GHG and air pollution emissions standards (Ch. <a href="#">13</a> )
Transit, active transport	Active transport infrastructure provision (see Ch. <a href="#">13</a> ), safety and comfort measures

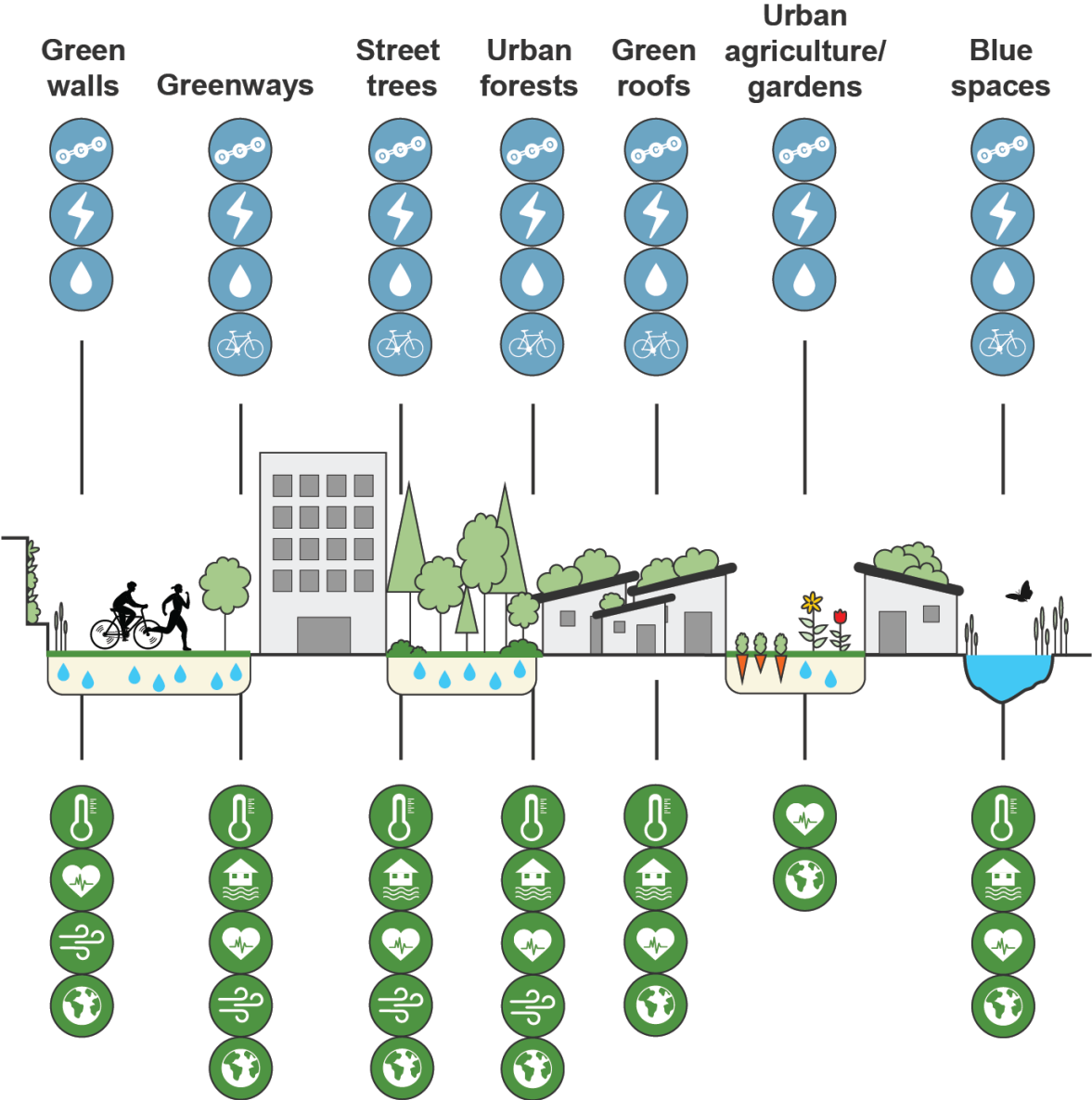
# Natural Infrastructure in Cities

## 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





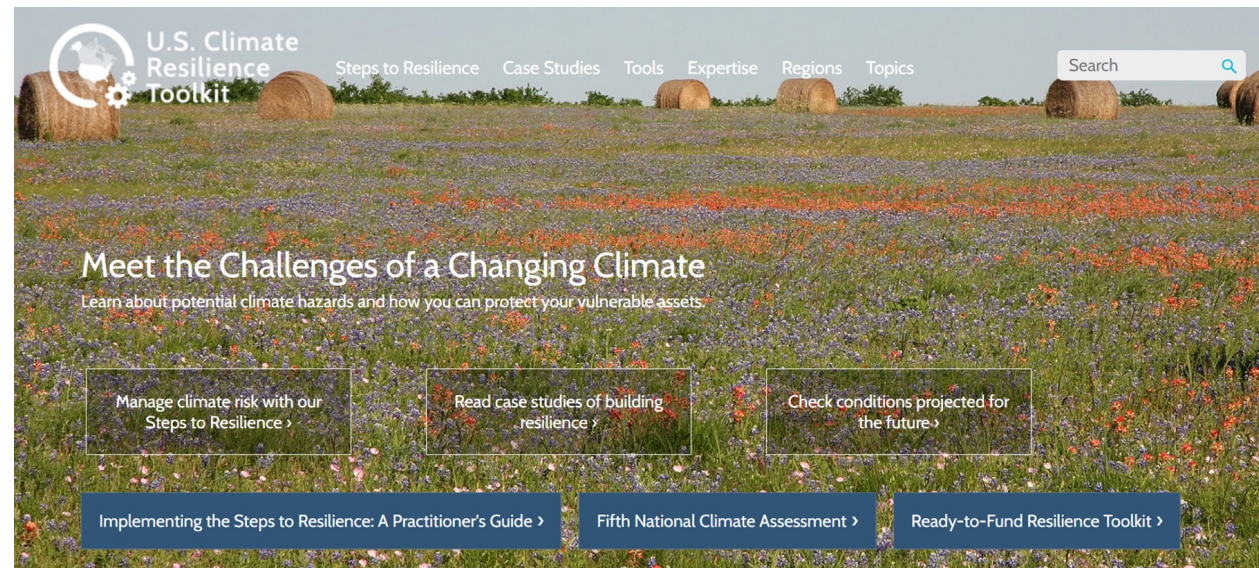
# U.S. Climate Resilience Toolkit (CRT)



# 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.

[Steps to Resilience](#)
[Case Studies](#)
[Tools](#)
[Expertise](#)
[Regions](#)
[Topics](#)

Tools

Filter by topic: ▼

Filter by tool function: ▼

Filter by steps to resilience: ▼

Filter by region: ▼

Tools are available to help you manage your climate-related risks and opportunities, and to help guide you in building resilience to extreme events. Browse the list below, or filter by topic and/or tool functionality in the boxes above. To expand your results, click the Clear Filters link.

**A Guide to Assessing Green Infrastructure Costs and Benefits for Flood Reduction**

Communities can use this six-step process as a framework—and to spark discussion—when assessing the costs and benefits of green infrastructure projects.

[Read more >](#)

**A Quick Guide to Adaptation Planning for Natural Resources Professionals**

This Quick Guide outlines the key steps of developing an adaptation project to enable natural resource professionals to begin designing and implementing adaptation actions in their work.

[Read more >](#)

**A Rural Capacity Map**

This tool helps to identify communities where investments in staffing and expertise are needed to support infrastructure and climate resilience projects.

[Read more >](#)

**A User Guide to Climate Change Portals**

Practical guidance for navigating the landscape of climate change portals and resources to find what you need.

[Read more >](#)



# Climate Mapping for Resilience & Adaptation (NOAA)

# Climate Mapping for Resilience & Adaptation (CMRA)



CMRA

## Climate Mapping for Resilience & Adaptation

Get Started

Steps to Resilience

Assessment Tool

Federal Funding



- 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](#)

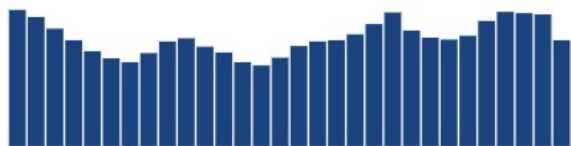
[About](#)

## Wildfire

Active fires

165

Last 30 days



Source: National Interagency Fire Center

## Drought

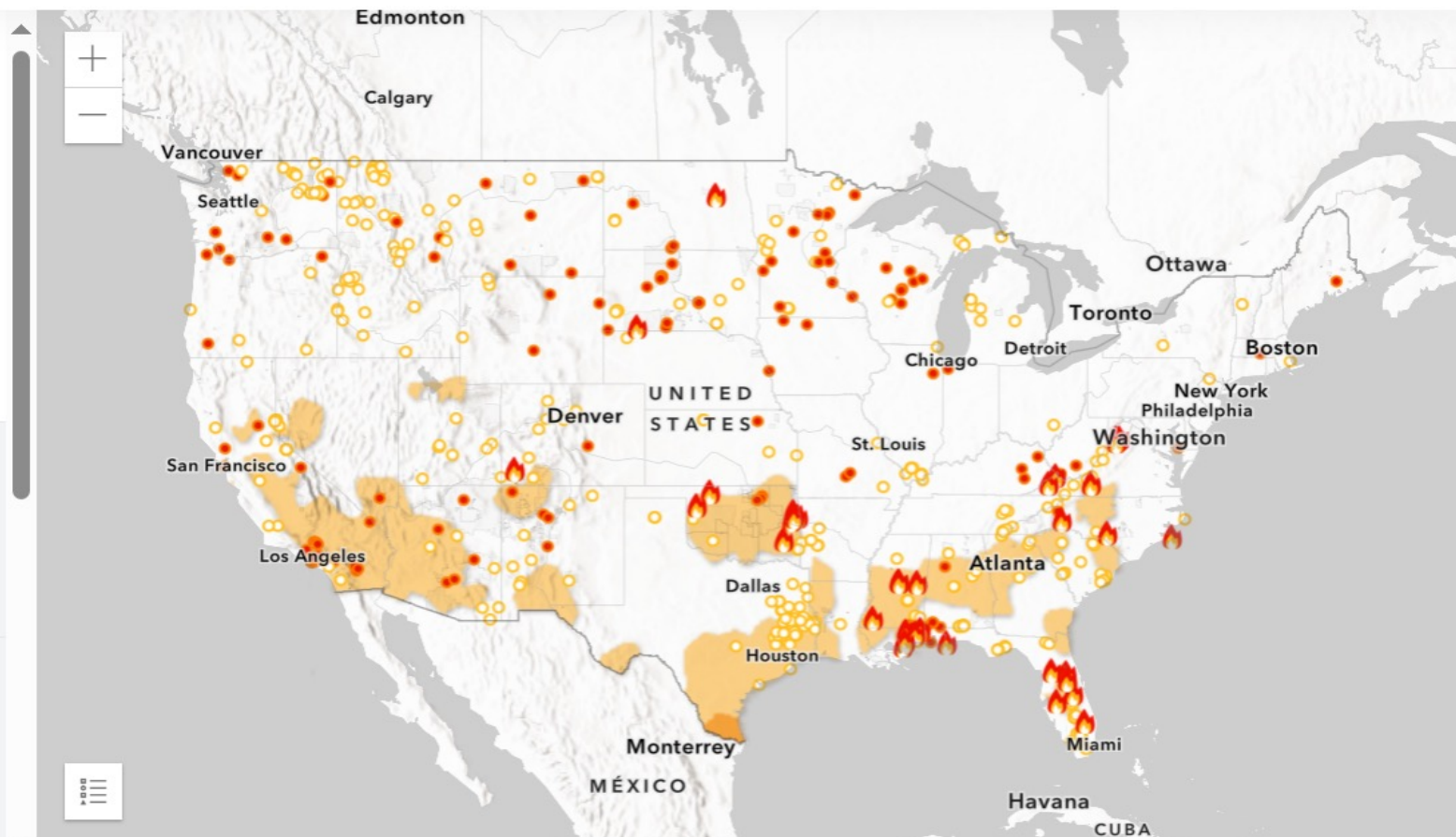
People experiencing drought 19,827,159

Source: NOAA/NIDIS Drought.gov

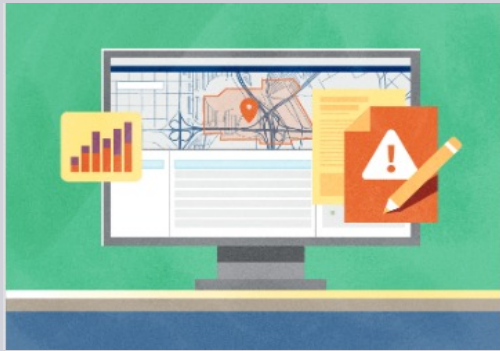
## Inland Flooding

People under flash flooding alerts 1,660,486

Source: NOAA National Weather Service



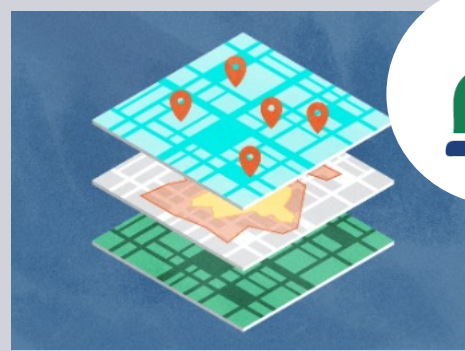
# Assessing and Addressing Climate Hazards



## Check Exposure

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

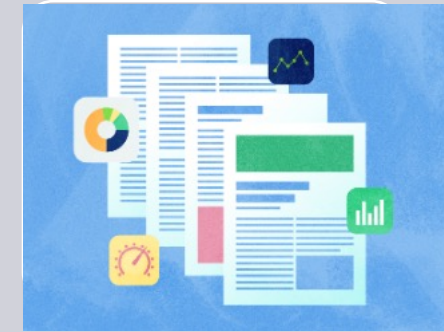
Generate hazard reports to document how climate may impact future projects and/or to inform your mitigation needs assessment.



## 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



## Climate Mapping For Resilience and Adaptation



Or




Data and maps available in this tool are downscaled results from global climate models. Results for selected geographies indicate how local exposure to five common climate-related hazards is projected to change through this century. Assessing climate vulnerability and risk to your local assets will require additional information that is not available in this tool.



[See the U.S. Climate Resilience Toolkit's Steps to Resilience framework for more information.](#)



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

 **Climate Mapping For Resilience and Adaptation** v1.3.1

[Data Sources](#) [CMRA](#) [User Guide](#)


 

Select a geography:


Census Tract



County

Tribal Area



Tribal Area





# Choose Your Location & Hazard Type

**Climate Mapping For Resilience and Adaptation** v1.3.1
 [Data Sources](#)
[CMRA](#)
[User Guide](#)
[Get Complete Report](#)

Select a geography:
 

Census Tract

County

Tribal Area

**Climate Projections**

**Map Exploration**

**Disadvantaged Community**

**Building Code: Partially Resistant**

**Tribal Area**

**Climate Hazards**

- Extreme Heat
- Drought
- Wildfire
- Flooding
- Coastal Inundation

**Climate Projections for**  
 Early Century (2015–2044)
 

Lower emissions
 Higher emissions

Annual days with maximum temperature > 90°F	51.4 Days + 21.3 since 1976-2005	53.5 Days + 23.5 since 1976-2005
Annual days with maximum temperature > 95°F	21.9 Days + 12.9 since 1976-2005	23.9 Days + 14.9 since 1976-2005
Annual days with maximum temperature > 100°F	5.8 Days + 4.4 since 1976-2005	7.0 Days + 5.6 since 1976-2005
Annual days with maximum temperature > 105°F	0.8 Days + 0.7 since 1976-2005	1.1 Days + 1.0 since 1976-2005

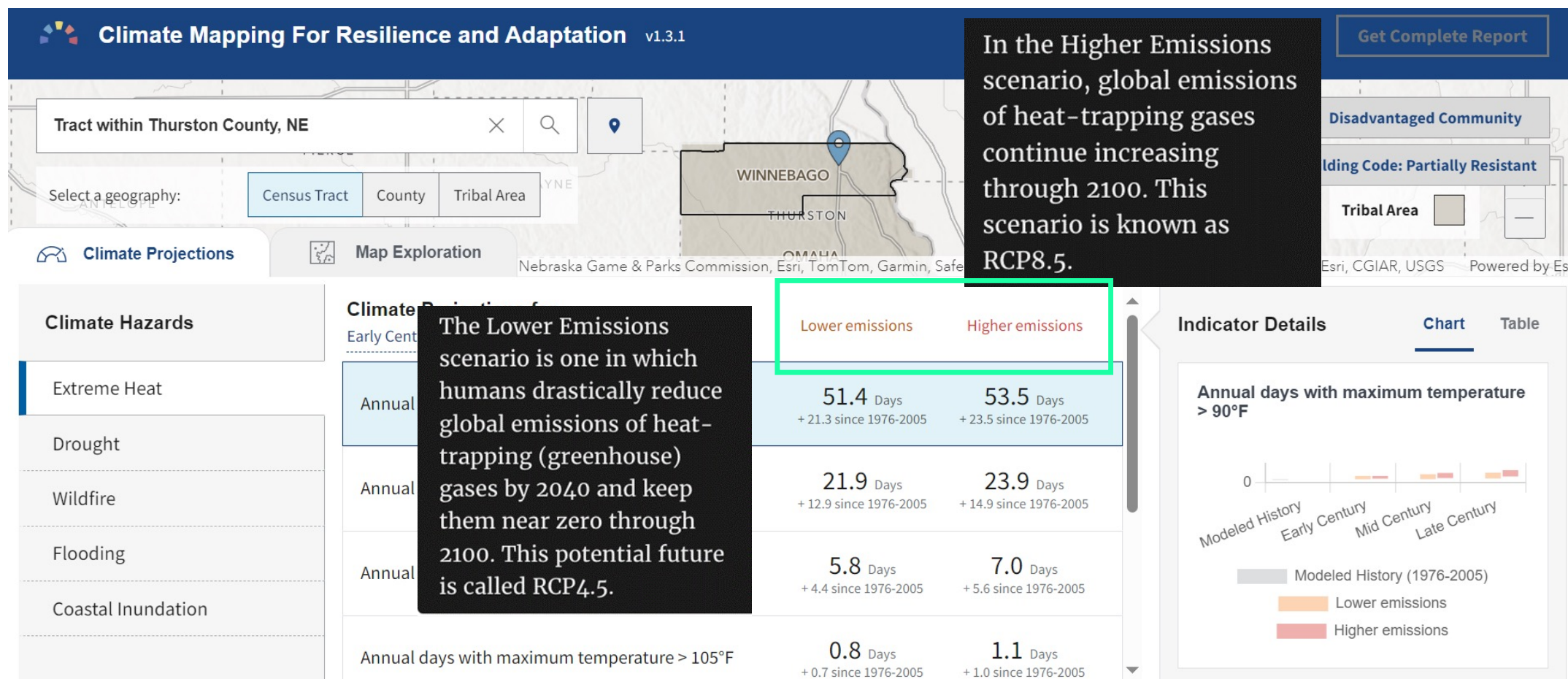
**Indicator Details**

Chart
 Table

**Annual days with maximum temperature > 90°F**

Modeled History (1976-2005)
 Lower emissions
 Higher emissions

# Understand the Output: Emission Scenarios





# Understand the Output: Disadvantaged Communities

**Climate Mapping For Resilience and Adaptation** v1.3.1
 [Data Sources](#)
[CMRA](#)
[User Guide](#)
[Get Complete Report](#)

Select a geography:

Census Tract

County

Tribal Area

Climate Projections

Map Exploration

Climate Hazards

Extreme Heat

Drought

Wildfire

Flooding

Coastal Inundation

Climate Projections for Early Century (2015–2044)

Annual days with maximum temperature > 90°F	+ 21.3 since 1976-2005	+ 23.5 since 1976-2005
Annual days with maximum temperature > 95°F	21.9 Days + 12.9 since 1976-2005	23.9 Days + 14.9 since 1976-2005
Annual days with maximum temperature > 100°F	5.8 Days + 4.4 since 1976-2005	7.0 Days + 5.6 since 1976-2005
Annual days with maximum temperature > 105°F	0.8 Days + 0.7 since 1976-2005	1.1 Days + 1.0 since 1976-2005

or Details

Chart

Table

Annual days with maximum temperature > 90°F

Disadvantaged Community

Building Code: Partially Resistant

Tribal Area

PS, USFWS | Esri, CGIAR, USGS

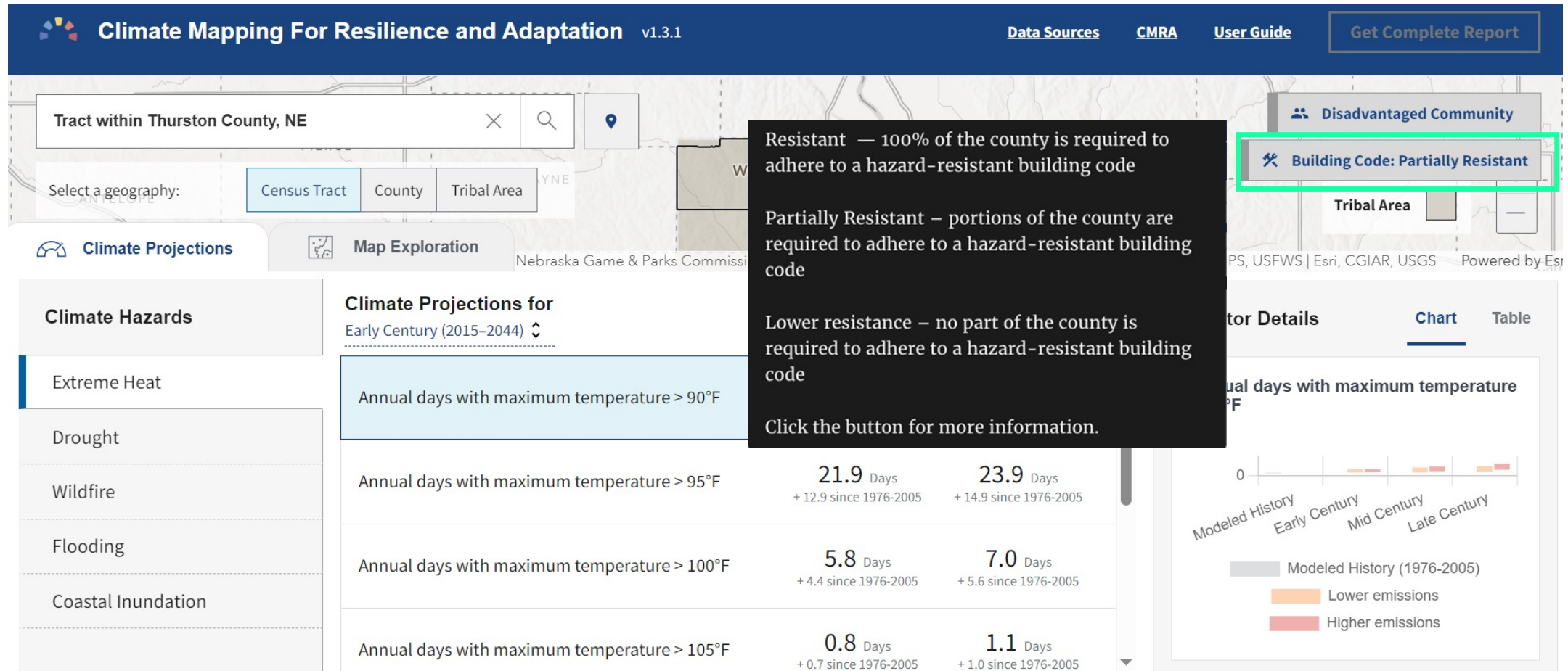
Powered by Esri

Disadvantaged Community — A census tract is identified as disadvantaged in the Climate and Economic Justice Screening Tool (CEJST) because it meets certain eligibility criteria.

Federal agencies will use the CEJST to help identify disadvantaged communities that will benefit from programs included in the Justice40 Initiative.

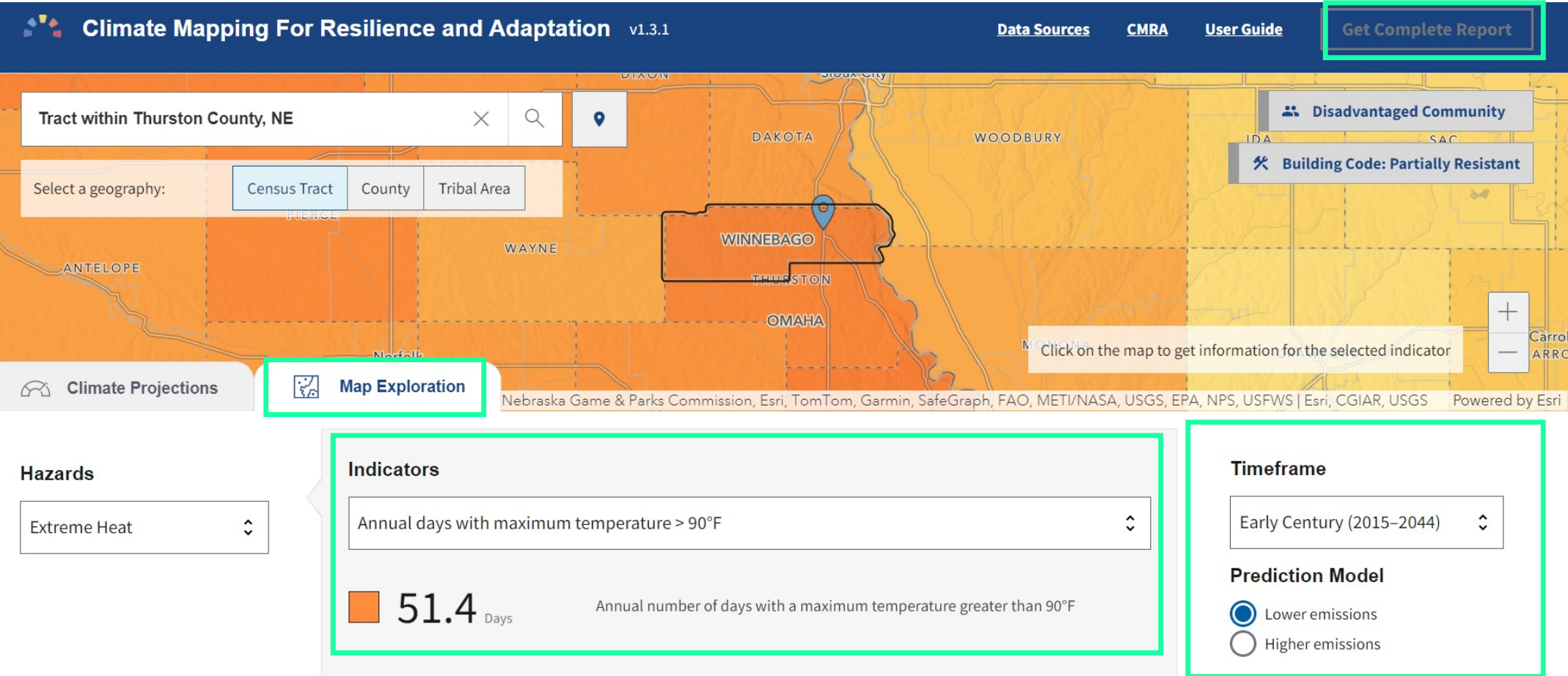
Click the button for more information

# 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

## Hazard Report

### Extreme Heat

Census Tract (31173940200) in Thurston County, Nebraska

**Total Population**  
2,751

**Non-Hispanic White Population (%)**  
74%

**Income Below Poverty in Last 12 Mo (%)**  
26%

**Building Codes Hazard Resistance**  
Partially Resistant

**Community Status**  
Disadvantaged Community

[Explore additional data](#)

U.S. Climate Resilience Toolkit  
Source: Census Bureau, CEQ, Esri, FEMA, MRLC, NOAA, UCSD

National Risk Index Rating  
Relatively High

Extreme Heat Annualized Frequency  
1.07

## Hazard Report

### Drought

Census Tract (31173940200) in Thurston County, Nebraska

**Total Population**  
2,751

**Non-Hispanic White Population (%)**  
74%

**Income Below Poverty in Last 12 Mo (%)**  
26%

**Building Codes Hazard Resistance**  
Partially Resistant

**Community Status**  
Disadvantaged Community

[Explore additional data](#)

U.S. Climate Resilience Toolkit  
Source: Census Bureau, CEQ, Esri, FEMA, MRLC, NOAA, UCSD

National Risk Index Rating  
Relatively High

Drought Annualized Frequency  
15.56

**Expected Annual Loss Rating**  
Relatively Moderate

**Expected Annual Loss Total (\$)**  
\$226,435.06

according to the FEMA National Risk Index

### Future Climate Indicators

Indicator	Modeled History (1976 - 2005)	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
<b>Precipitation:</b>							
Average annual total precipitation	28" 27 - 29	28" 26 - 32	28" 26 - 31	28" 25 - 33	29" 26 - 33	29" 25 - 32	30" 25 - 35
Days per year with precipitation (wet days)	136 days 130 - 140	135 days 119 - 143	134 days 118 - 146	134 days 121 - 145	134 days 116 - 150	134 days 117 - 150	132 days 103 - 157
Days per year with no precipitation (dry days)	229 days 226 - 235	230 days 222 - 246	231 days 219 - 248	231 days 220 - 244	232 days 215 - 249	231 days 215 - 249	234 days 208 - 262
Maximum number of consecutive dry days	20 days 16 - 21	20 days 17 - 22	20 days 17 - 23	20 days 17 - 24	20 days 16 - 24	20 days 17 - 24	20 days 16 - 25
<b>Temperature thresholds:</b>							
Annual days with maximum temperature > 90 °F	30 days 27 - 34	51 days 34 - 69	54 days 40 - 68	62 days 36 - 86	69 days 46 - 98	71 days 42 - 101	99 days 63 - 127
Annual days with maximum temperature > 100 °F	1 days 1 - 2	6 days 2 - 13	7 days 2 - 15	10 days 3 - 20	14 days 4 - 31	15 days 3 - 20	38 days 10 - 72

N/A = Data Not Available for the selected area



# CMRA: Decision-relevant Climate Data

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

## Decision-relevant climate data

Select a climate-related hazard icon to explore relevant curated data and tools. These collections offer both Federal and non-federal resources.



Extreme Heat



Drought



Wildfire



Flooding



Coastal  
Inundation

Explore additional data: [Climate Models](#), [Demographics](#), [Infrastructure](#), [Environment](#), [Hazards](#)

About the data



# National Risk Index (FEMA)



# FEMA's National Risk Index



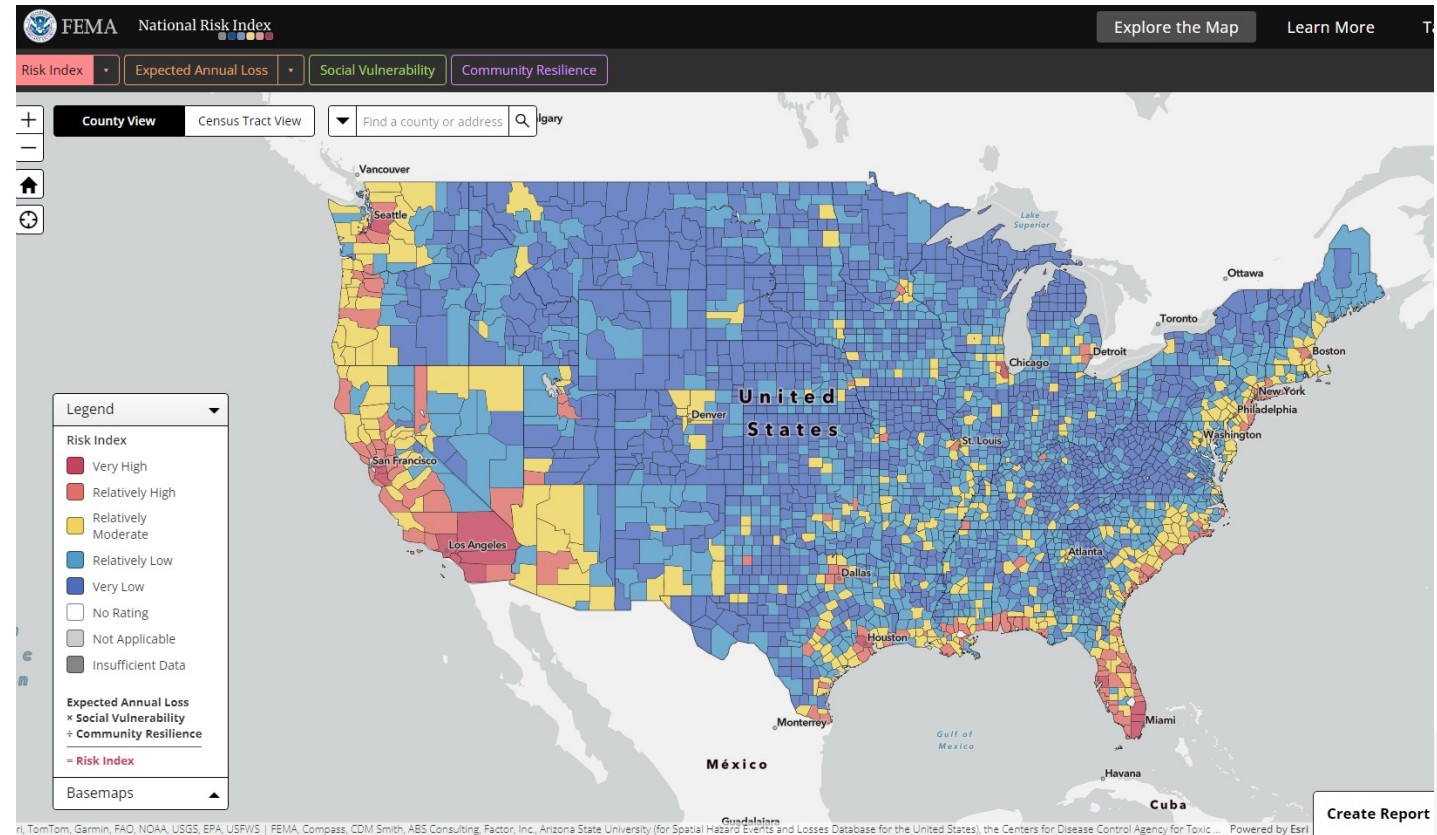
- User friendly interactive tool that shows which communities are most at risk to 18 natural hazards
- Includes data at county and census tract levels
- Risk Index scores presented as composite score for all 18 hazard types and individual scores for each hazard type
- Risk Index Equation:

Expected Annual Loss

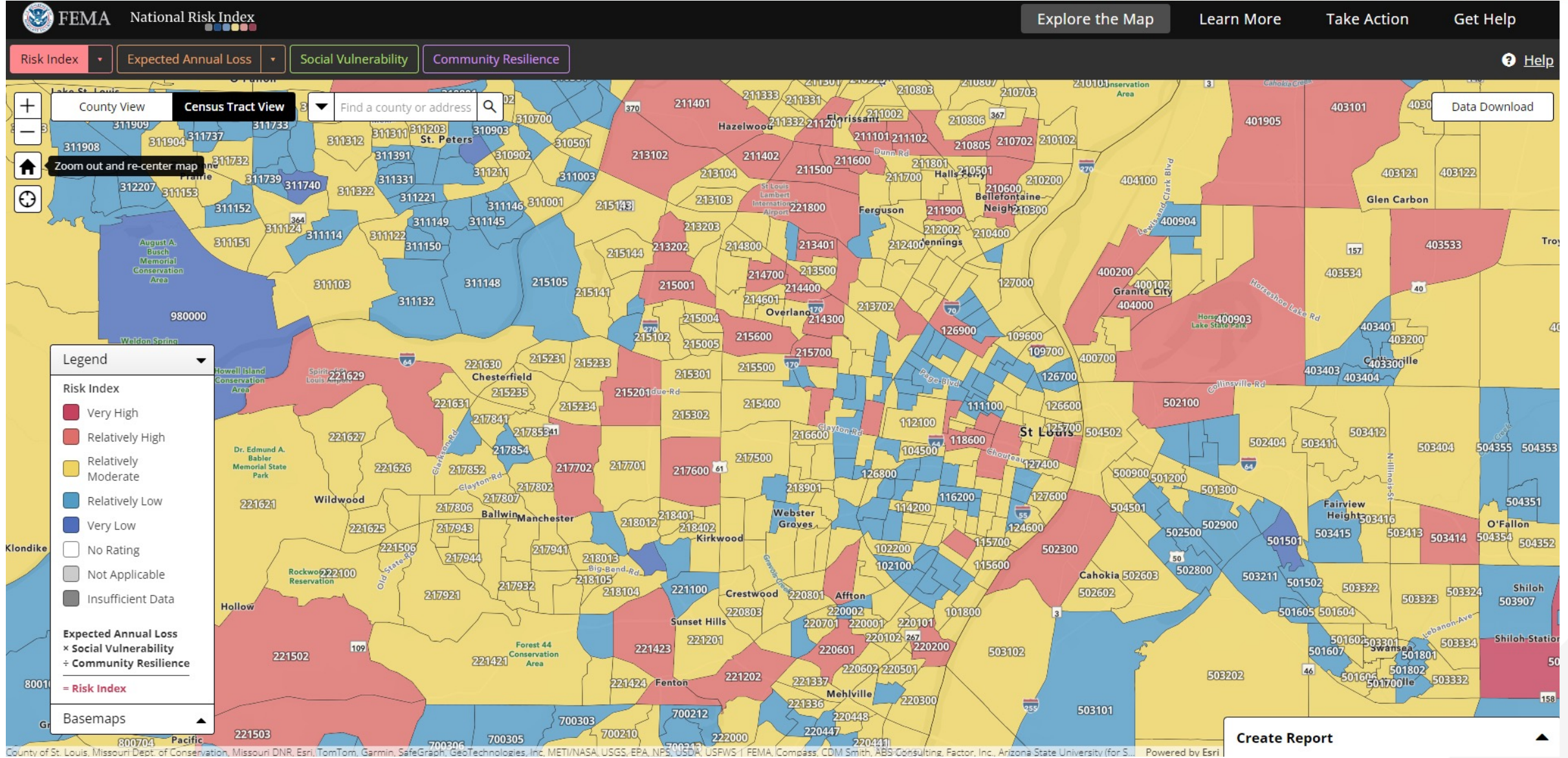
× Social Vulnerability

÷ Community Resilience

= Risk Index









# National Risk Index



May 02, 2024

## St. Louis City, Missouri

### Summary

### Risk Index Report

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**

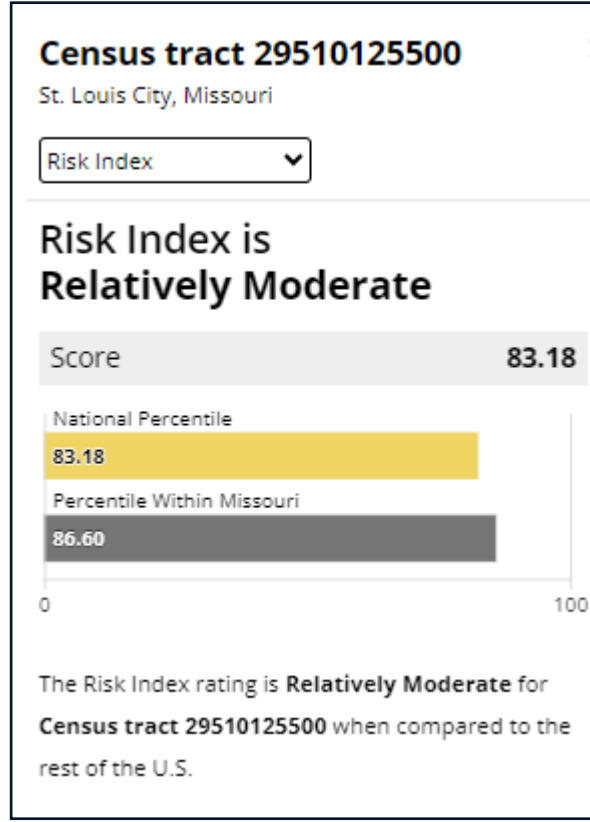
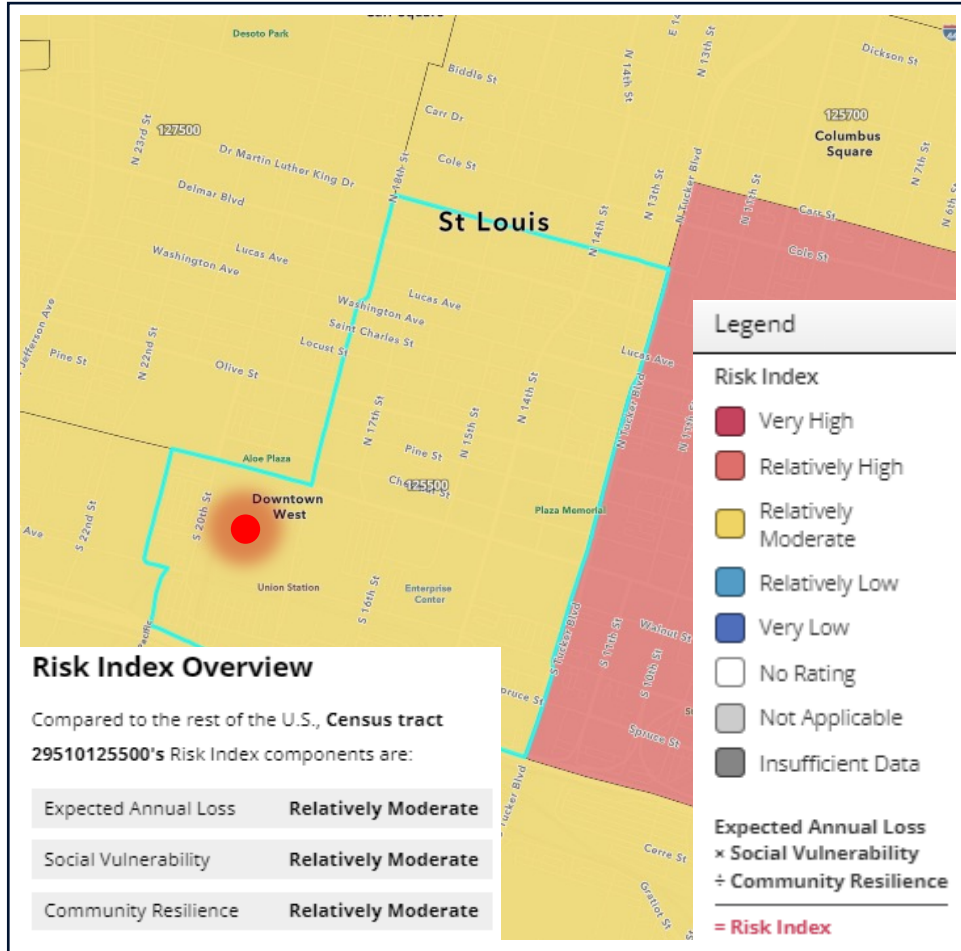
Score **61.1**



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?



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



A photograph of the St. Louis skyline, including the Gateway Arch and the Old Courthouse, framed within a white hexagonal border. The background of the slide features green and blue geometric shapes.

# 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

## Resources

### Build for the Future

There are more resources available on the Build for the Future page. View details for upcoming trainings and learn more about available guides and tools.

[Return to Build for the Future](#)

## Resource by Topic



### Energy Efficiency

View resources on reducing energy waste and increasing efficiency in buildings.



### Renewables

View resources on sustainable energy sources derived from natural resources such as sunlight, wind, water, and geothermal heat.



### Resiliency

View resources on increasing the capacity of systems and communities to withstand and adapt to climate-related challenges and disturbances.



### Environmental Justice

View resources on inclusive environmental decision-making and policy implementation that amplifies the voices of marginalized communities.

## 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

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).

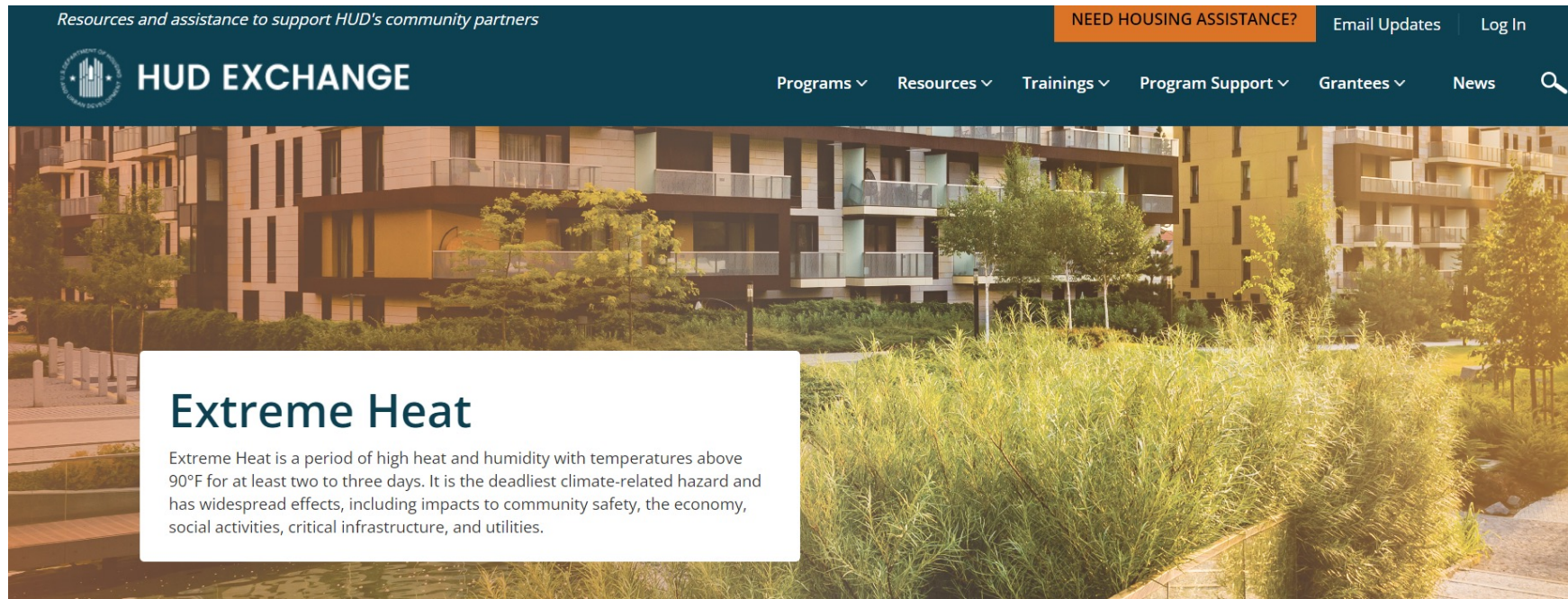
Feedback

[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)

A photograph of the St. Louis Gateway Arch and the city skyline is framed within a white, irregular hexagonal shape on the left side of the slide. The arch is a large, white, catenary-shaped structure. The skyline includes various skyscrapers and a flagpole with the American flag. The foreground shows a green field and some trees.

# Thank You!

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