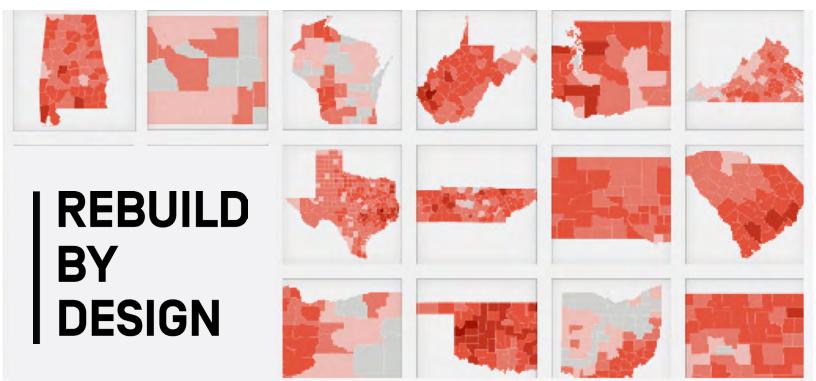


# KIENITUCKY

# ATLAS OF DISASTER

May 2025



# KIENITUCKY



### **EXECUTIVE SUMMARY**

Extreme weather is reshaping Kentucky. In the first six months of 2025, **47 residents** of Kentucky died from extreme weather, adding to a growing pattern of loss and devastation. Between 2011 and 2024, Kentucky faced 23 federally declared major disasters, costing taxpayers over \$1.5 billion. The scale of the recovery needed reveals the financial and structural challenges that persist: communities face mounting risks from future disasters due to aging infrastructure, limited resources, and insufficient capacity to address vulnerabilities comprehensively. For many, rebuilding means more than replacing what was lost—it requires re-imagining infrastructure and planning systems to withstand increasingly frequent and severe weather events.¹ These challenges demand urgent action to safeguard residents and the state's economy and industries.

#### Rebuild by Design's Atlas of Disaster reveals that between 2011 and 2024:

- Kentucky faced 23 federally declared major disasters, costing taxpayers over \$1.5 billion.
- The state had **five of the top 10 counties** in the nation for highest number of major disaster declarations between 2011 and 2024.
- Twenty of these disasters were flood-related, underscoring the urgency of flood mitigation.
  Counties with the most disaster declarations include Franklin and Johnson County (16) and
- Counties with the most disaster declarations include Franklin and Johnson County (16) and Lawrence, Magoffin, Clay, Lee, and Owsley counties (15 each).

These changing conditions are already impacting Kentucky's agriculture sector, where heavy rainfall and cold temperatures during calving season pose a growing challenge. These conditions disrupt planting schedules, increase risks for livestock, and raise feeding costs. Average summer temperatures in Louisville have risen 3.4°F since 1970, and by 2050, **residents could face 46 days annually over 94.6°F**, compared to just seven days today. This heat increase threatens worker productivity in agriculture, construction, and emergency services, resulting in lost wages and economic strain.<sup>2</sup>

Similarly, bourbon—another Kentucky staple—relies on specific weather conditions, and extreme weather events threaten the factors that give it its distinct flavor. Temperature fluctuations essential for aging are disrupted by extreme cold or heat, while rising temperatures and increased rainfall jeopardizes crops like corn and rye, key bourbon ingredients. The growing demand for barrels also risks depleting the supply of American white oak. Facing these challenges, Kentucky distillers are turning to sustainable practices to ensure bourbon's future. This industry must continue to adapt to protect the state's agricultural and cultural legacies. The growing variability and unpredictability of weather conditions events highlight the need for businesses across the state to protect the state's agricultural future.

Federal policies, have driven significant investments in upgrading Kentucky's infrastructure and promoting clean energy and community resilience amid rising disasters. However, budget reductions may jeopardize the continuation of this crucial support. While these investments mark an important step toward safeguarding infrastructure against extreme weather and natural hazards, they are only a fraction of the billions required to fully address Kentucky's growing vulnerabilities. The pressing need for increased funding and more comprehensive strategies remains undeniable.

We cannot wait any longer to protect the lives and livelihoods of Kentucky's residents. Delaying action only increases the burden on taxpayers, with funds diverted to emergency responses, repairs, healthcare costs, and lost productivity. Kentucky must prioritize adaptive strategies to ensure a resilient future for its communities

<sup>1</sup> https://www.kentucky.com/news/weather-news/article306626606.html

<sup>&</sup>lt;sup>2</sup> https://climatecheck.com/kentucky/louisville

https://www.wave3.com/2023/10/13/behind-forecast-can-weather-change-bourbons-flavor/

<sup>4</sup> https://www.politico.com/news/2025/01/21/trump-fight-biden-infrastructure-money-00199796

## TOGETHER, WE CAN FIX THIS

Flooding in Kentucky has become an all-too-familiar crisis, forcing businesses and residents to choose between rebuilding in flood-prone areas or abandoning their homes. While some Kentuckians remain determined to rebuild after every flood, others are considering relocation after their homes and businesses have been repeatedly inundated. This cycle of devastation raises questions about the sustainability of staying in flood-prone communities, especially as damage continues to mount. Rising insurance costs further compound these challenges,<sup>5</sup> with homeowners' premiums jumping 22% since 2022, driving Kentucky's average home insurance rate to nearly \$3,000 in 2023.<sup>6</sup>

Robust flood mitigation measures and funding for resilient infrastructure are vital. Given that Kentucky has yet to develop a statewide adaptation plan, it's critical to prioritize the creation of a comprehensive strategy and funding to guide and coordinate efforts across regions and sectors. Without significant investment in protecting these communities, the region may continue to face a painful cycle of destruction and rebuilding—until a more permanent solution is

To effectively tackle these challenges, Kentucky must prioritize sustained investments, including funding for flood mitigation infrastructure, nature-based solutions, stormwater management systems, and enhanced drainage systems. Special emphasis should be placed on state planning and funding for resilient infrastructure in rural communities. Without targeted support, underresourced communities remain disproportionately affected by disasters, widening existing inequities. Kentucky's path to resilience is achievable, but it demands a renewed commitment to collaboration and funding tailored to local needs. Together, we have the power to change this—if we act now.

**MENTAL INVESTMENTS IN HEALTH BENEFITS RESILIENT INFRASTRUCTURE CREATION OF GREEN AND GREY INFRASTRUCTURE REDUCES RISKS PHYSICAL** FROM CLIMATE **HEALTH HAZARDS BENEFITS ECOLOGICAL ENHANCEMENTS CREATION AND EXPANSION OF DIRECT** RESILIENCE **BENEFITS** WORKFORCE **INCREASED** SOCIAL RESILIENCE ALIGNMENT **OF SECTORS:** BUSINESS, ENVIRONMEN, GOVERNMENT, MITIGATED LABOR, ETC. PUBLIC + INDIRECT **PRIVATE COSTS BENEFITS OF FUTURE ECONOMIC** CLIMATE DEVELOPMENT **IMPACTS QUALITY OF** LIFE **IMPROVEMENTS** 

https://www.wkyt.com/2024/05/16/how-is-extreme-weather-impacting-home-insurance-rates-kentucky/
 https://spectrumnews1.com/ky/louisville/news/2023/07/29/report--average-kentucky-home-insurance-rates-up-22- https://www.georgetownclimate.org/adaptation/state-information/kentucky/overview.html
 https://kypolicy.org/kentucky-must-do-more-to-increase-flood-resilience/
 https://www.clevelandfed.org/publications/cd-reports/2023/20230927-resilience-and-recovery

## IFUINIDIING OUR IFUTURE

To secure a livable future, it is essential for Kentucky to establish sustainable, long-term funding for resilient adaptation infrastructure. This funding would act as a catalyst for innovative, data-driven, and community-led solutions to address extreme weather risks. A reliable state-level funding source, such as a statewide ballot measure or a surcharge on certain types of insurance, would support vital extreme weather adaptation projects.

The following are potential models that the State of Kentucky can employ to raise the funding needed to support local communities' plans to prepare for extreme weather events.

## Develop a Statewide Ballot Measure

Voters nationwide have consistently shown support for funding infrastructure projects that enhance resilience and address environmental challenges. In Kentucky, residents play a key role in influencing these decisions by participating in the legislative process. By advocating for policies focused on sustainability and preparedness with elected representatives, Kentuckians can drive meaningful change.

#### RECENT VOTER-APPROVED BALLOT MEASURES

YEAR	LOCALITY	AMOUNT	PURPOSE	VOTER %
2024	CALIFORNIA	\$10 billion bond	Climate resilience, infrastructure, and adaptation	58%
2022	NEW YORK	\$4.2 billion bond	Ecological and climate resilience	68%
2022	RHODE ISLAND	\$50 million bond	Municipal climate resiliency and habitat protection	66%
2022	EL PASO, TX	\$272.5 million bond	Streets, parks, and climate projects	55%
2022	DENVER, CO	\$25 million bond	Outdoor learning spaces development	56%
2021	DENVER, CO	0.25% sales tax to raise \$40 million per year	Climate mitigation and adaptation for underserved communities	62%
2021	MAINE	\$100 million bond	Infrastructure adaptation for safety and resiliency	72%
2021	VIRGINIA BEACH, VA	\$567.5 million bond	Comprehensive flood protection measures	73%
2020	KEY BISCAYNE, FL	\$100 million bond	Sea level rise mitigation and infrastructure hardening	57%
2018	CALIFORNIA	\$4 billion bond	Environmental and recreational purposes	58%
2018	HARRIS COUNTY, TX	\$2.5 billion bond	Flood damage reduction projects	85%
2018	BAY AREA, CA	\$425 million bond	Seismic strengthening and flood protection projects	83%
2017	MIAMI, FL	\$400 million bond	Sea level rise and flood protection, public safety and affordable housing	55%

Many cities and states have successfully passed similar measures, such as California's \$10 billion Climate Resilience Bond Act, which focuses on wildfire protection, drought response, and flood protection. Additionally, New York State passed the \$4.2 billion Environmental Bond Act in 2022, which is already being used to upgrade infrastructure, improve disaster resilience, and support projects such as wastewater infrastructure, municipal stormwater projects, and other water quality improvements.<sup>19</sup> One such project is the Shinnecock Canal Stormwater Remediation Improvements in Hampton Bays, Suffolk County, NY.

This project, led by Suffolk County and funded through the New York State Department of Environmental Conservation (DEC), has been awarded \$1,000,000 in Bond Act funding. The initiative aims to improve water quality by implementing bioretention areas and a hydrodynamic separator to prevent untreated stormwater from entering the Shinnecock Canal. Covering a 77-acre area, the project will effectively capture, store, and treat stormwater, protecting the vital ecosystems of the Shinnecock and Great Bay watersheds. By investing in such essential infrastructure, the Bond Act not only safeguards public health but also stimulates job creation and economic growth in rural areas.<sup>20</sup>



#### Leverage a Modest Insurance Surcharge to Support Billions in Climate Infrastructure

The insurance industry faces mounting challenges, with annual insured losses exceeding \$100 billion. Growing populations, rising property values, and secondary hazards like floods and wildfires now pose greater risks than hurricanes. Severe weather is also becoming more unpredictable, impacting regions once considered safe.<sup>21</sup>

Insurers are reassessing risk models, adjusting coverage, and withdrawing from high-risk areas. Before Hurricanes Helene and Milton, insurers had already pulled out of nine states due to escalating weather threats.<sup>22</sup> More than a dozen left Louisiana after storms in 2020 and 2021.<sup>23</sup> In 2022, Florida saw a 42% spike in premiums,<sup>24</sup> while Allstate warned New Jersey homeowners of a 55% rate hike due to inflation and extreme weather exposure.<sup>25</sup>

Rebuild by Design's 2022 Atlas of Disaster,

modeled the opportunity to levy a modest two-percent surcharge on certain lines of property and casualty insurance. This approach could generate \$3.3 billion over 10 years to fund critical disaster resilient infrastructure investments in Kentucky.

A surcharge offers an economically progressive solution to create the needed funds to equitably adapt to major disasters. This model can achieve equitable outcomes because community members with more wealth have more insurance, while those with less resources are likely to have little or no insurance. Creating a dedicated funding mechanism, independent of the state's general fund, ensures transparency and accountability. To maximize investments, the state would leverage these revenues through bonding, which will produce capital and ensure that bondholders would hold the state accountable for the funds being used for the intended purpose.

By implementing this surcharge, Kentucky can proactively invest in infrastructure to reduce risks and mitigate future costs before communities bear the brunt of extreme weather events. As extreme weather and hazard mitigation interventions are implemented, the risk of loss or damage will decline, reducing the property and casualty payouts for some insurers. Additionally, for communities in FEMA flood zones who take advantage of FEMA's Community Rating System (CRS), community-wide infrastructure and policy investments could lower flood insurance payments by 5% – 45%, 26 magnifying the opportunity to decrease household insurance payments multifold.

As of October 2022, 37 Kentucky communities participate in the CRS. Integrating floodplain management into the state's risk reduction strategy can further reduce losses and costs. For example, Richmond's Class 8 CRS rating grants residents a 10% flood insurance discount. Expanding such efforts statewide could enhance resilience and lower insurance costs.<sup>27</sup>

Shifting weather trends are already impacting Kentucky, and their effects are expected to worsen. If we do not act with urgency, Kentuckians will continue to face the devastating consequences of storms, flooding, rising temperatures, and droughts. With more frequent extreme weather events and rising insurance costs on the horizon, Kentucky can break the cycle of loss by securing sustainable funding to proactively design and implement resilient infrastructure to save lives. The time to act is now.

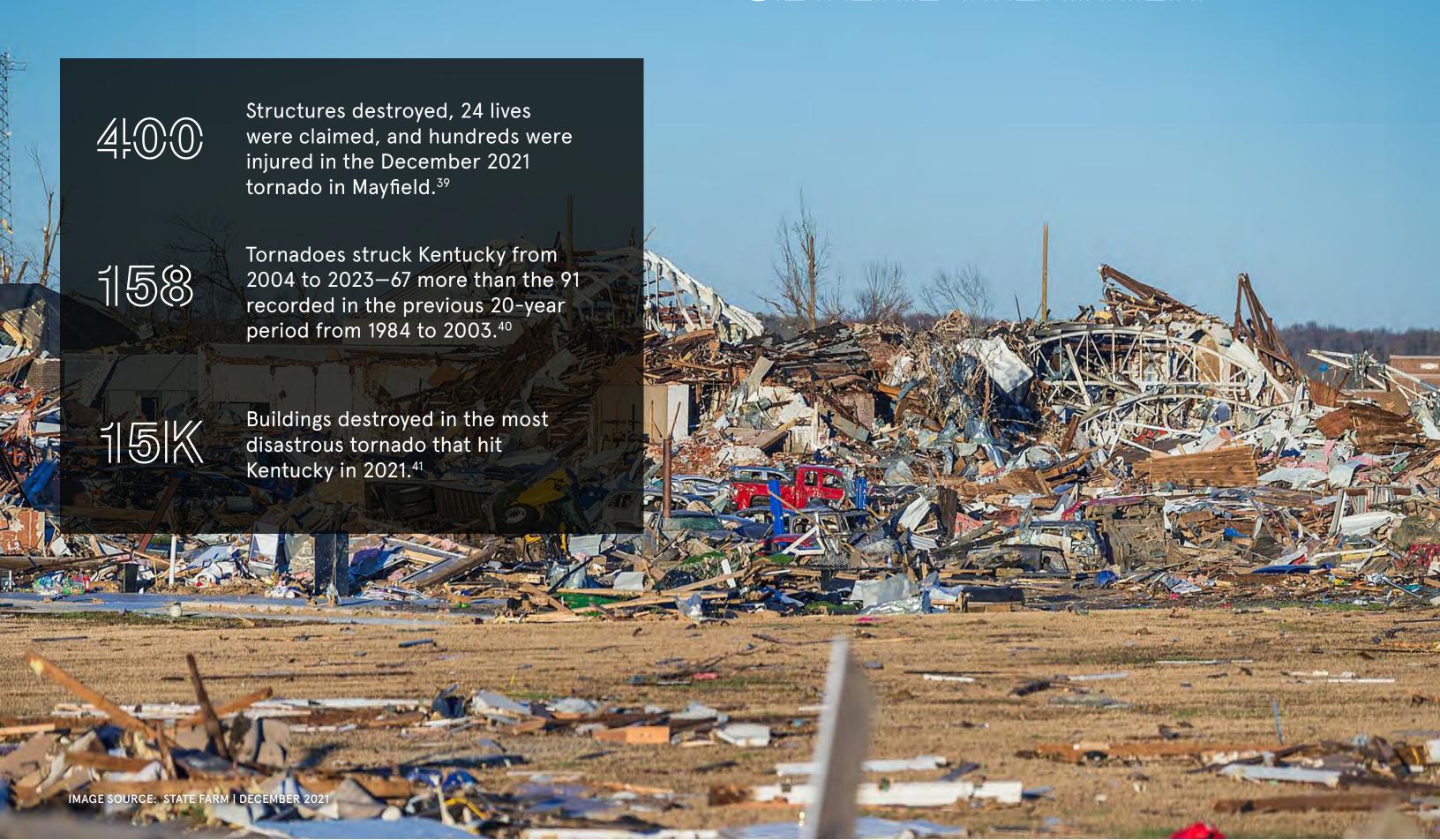


## DISPLACEMENT Adults in Kentucky have been displaced by disasters due to extreme weather (from 2024 107.91% data)-roughly 3.16% of the state's adult population. This rate is nearly double the national average. Of 330,070 Kentuckians never 6-21% returned home after being displaced, signaling long-term disruption and community destabilization. Kentuckians still reported "a lot" of loss of electricity a month 59\_9| after a disaster, a breakdown that severely hampers emergency response, healthcare, and everyday survival.32 GE SOURCE: NATIONAL WEATHER SERVICE MAY 2024





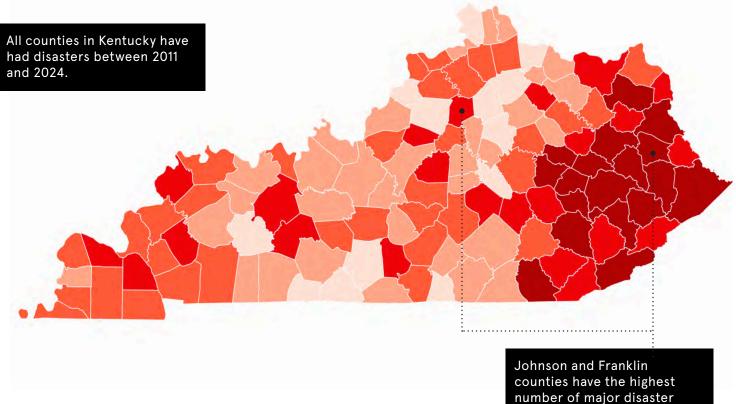
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## **DISASTER OCCURRENCES 2011–2024**

FEDERALLY DECLARED MAJOR DISASTERS BY COUNTY





#### **Number of Disaster Events**

Major Disaster Declarations (2011-2024)

0 occurrences

1 occurrence

2-3 occurrences

4-6 occurrences

7-9 occurrences

10+ occurrences

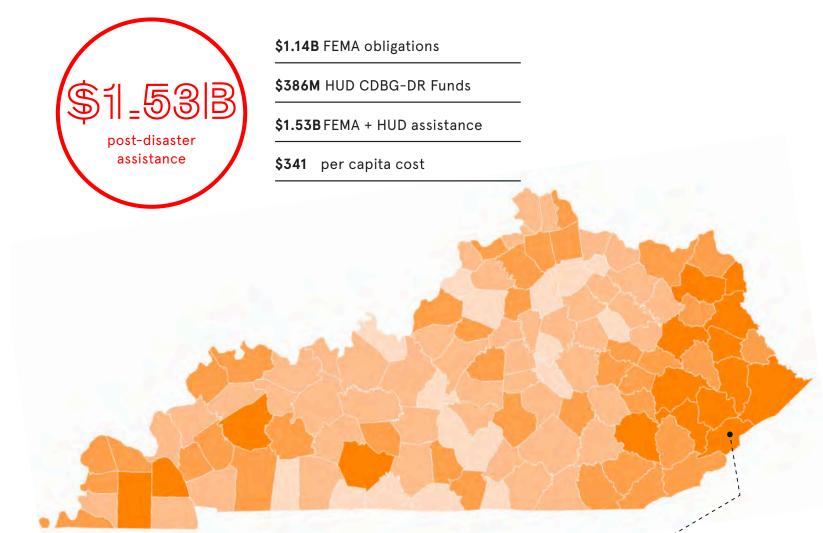
MAP MADE BY REBUILD BY DESIGN FEMA DATA COURTESY OF IPARAMETRICS

declarations in the state, with

a total of 16.

## FEDERAL ASSISTANCE 2011-2024

POST-DISASTER PUBLIC ASSISTANCE AND HAZARD MITIGATION FUNDS **OBLIGATED BY COUNTY FOR CLIMATE DISASTERS** 



#### **FEMA Public Assistance and Hazard Mitigation**

Federal Share Obligated (2011-2024)

\$0 to \$100K

\$100K to \$1M

\$1M to \$10M

\$10M to \$50M

\$50M to \$100M

\$100M to \$500M

MAP MADE BY REBUILD BY DESIGN FEMA DATA COURTESY OF IPARAMETRICS

Letcher County has received the most post-disaster FEMA

funds in the state: \$56.9

million.

## **SOCIAL VULNERABILITY INDEX 2022**

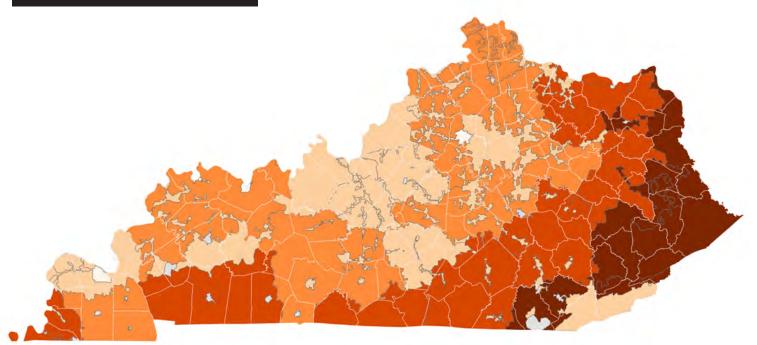
#### AREAS OF GREATEST SOCIAL VULNERABILITY



## **ENERGY RELIABILITY 2011-2021**

#### **COUNTIES AT GREATEST RISK OF POWER OUTAGES**

Eighteen counties in Kentucky have high social vulnerability and low energy reliability.



#### Social Vulnerability Index

CDC (2022)



#### 0.0 - 0.2

0.2 - 0.4

#### 0.4 - 0.6

0.6 - 0.8

0.8 - 1.0

MAP MADE BY REBUILD BY DESIGN DATA SOURCE: CDC/ATSDR 2022 SVI

#### **Aggregated Annual Electric Outage Duration** Including major events - SAIDI\_W\_MED

missing electric outage data

0 - 60 minutes

60 - 120 minutes

120 - 240 minutes

240 - 456 minutes

456-7,700 minutes

Source: U.S. Energy Information Administration

Maps courtesy of APTIM

## **KENTUCKY**

TOTAL DISASTERS: 23 FEMA PA + HM: \$1.14 B		Total	1976: SEVERE STORMS,	,	TOTALO, TIOO. OLVERE OTOTALO,	4216: SEVERE STORMS, SNOV	E WINTER 4217: SEVI	2015 ERE STORMS, 4218: SEVE	ERE WINTER 4239: SEVERE STO	2016  RMS, 4278: SEVERE STOR  IGHT- TORNADOES, FLOODII	4358: SEVERE STOR	RMS, TOPNADOES ELOODING S			2021 SEVERE WINTER 4595: SEVERE,	STEALCHT I INE WINDS	STRAIGHT-LINE WINDS 4663	: SEVERE STORMS,	4702: SEVERE STOR	2023 RMS, 4711: SEVERE NDS. STRAIGHT-LINE	STORMS, 4782: SEVE	2024 ERE STORMS, 4804: SEVERE F-LINE WINDS. STRAIGHT-LINI	E STORMS,	REMNANTS OF
HUD CDBG-DR: \$386 M FEMA + HUD ASSISTANCE: \$1	.53 B		TORNADOES, AND FLOODING	TORNADOES, AND TORNADOES, STI FLOODING LINE WINDS AND F	,	FLOODING, LAN AND MUDS		LIDES, AND FLOODING, OSLIDES AND MU	LANDSLIDES, LANDSLIDES, STRAI LANDSLIDES, LINE WINDS, FLOOD JOSLIDES LANDSLIDES, AN	DING, LANDSLIDES, AND MUDSLIDES	FLOODING LANDSLIE	DES, LANDSLIDES AND FL	OODING, LANDSLIDES, AND MUDSLIDES	,,,	LANDSLIDES, AND FLOODING, LANI MUDSLIDES AND MUDSL	OSLIDES, FLOODING AND	TORNADOES ELOODING FLOO	DING, LANDSLIDES, AND MUDSLIDES	TORNADOES, FLOOD LANDSLIDES, AN	DING, FLOODING, LAN	OSLIDES, TORNADOES,  LIDES AND MU	I-LINE WINDS, STRAIGHT-LINE S, LANDSLIDES, TORNADOES, LA IUDSLIDES AND MUDSI	ANDSLIDES, HURRICA	CANE HELENE
COUNTY NAME # OF		PA Obligations HM Obligations	PA HM Obligations Obligation	ns Obligations Obligations Ob	HM PA HM ligations Obligations Obligations	Obligations C		HM PA Obligations Obligations		ations Obligations Obligati	ions Obligations Obligat	tions Obligations Obligations Ob	ligations Obligations Obl	PA HM PA ligations Obligations Obligation	HM PA ons Obligations Obligations O	HM PA HM obligations Obligations	PA HM F Obligations Obligations Oblig	A HM ations Obligations	PA HI Obligations Obliga	M PA ations Obligations C	HM PA bligations Obligations	Obligations Obligations C	Obligations Obligations	HM ns Obligations
Total         23           21000: Statewide         22	\$510,101,320.96	\$504,298,097.62 \$5,803,223.34	0,804,934.28 \$733,687.	.95 \$2,569,085.90 \$139,963.79 14,924,163.49 \$2,2	49,217.90 \$2,019,091.02 \$54,632.9	99 \$1,462,033.32	\$45,365.98 \$2,842,209.1	3 \$168,092.00 \$9,745,839.68	\$201,689.00 \$4,387,725.97 \$156	,281.00 \$1,125,860.54 \$43,78	85.29 19,226,030.92 \$186,1	121.00 \$5,647,649.98 \$295,853.00 343,4	03,230.35 \$1,343,771.00 551,7	******************************	24.87       \$2,566,507.26       \$93,231,807.14       \$5,         31.02       \$110,804.00       \$42,819,736.58       \$	901,650.62   56,615,801.83   10,811,890.63   164,785.00   344,656,812.98   \$300,836.00	3 16,160,777.29     \$49,883.00 330,271       0 \$4,174,773.73     \$49,883.00 97,183	,966.39 ;65,765,844.82 ; ,006.92 \$1,233,646.00 ;	\$31,608,570.71 \$718,3 \$15,506,378.73 \$170,3	365.94 319,294,629.80 \$ 826.00 \$3,214,417.61	124,973.00 \$0.00 \$49,973.00	\$0.00 \\$17,693,429.63 \\$3,863,567.31	\$0.00 \$605,544.3 \$0.00 \$596,122.1	2.11 \$0.00
21073: Franklin County       16         21115: Johnson County       16	\$7,518,197.29 \$19,515,159.74	\$4,382,279.39 \$3,135,917.90 \$16,497,357.29 \$3,017,802.45	\$186,333.09 \$0.	.00 \$354,330.86 \$2	74,449.56 \$425,940.54 \$70,128.7	\$129,816.58 70	φο.σο φ=σ 1, 1σσ.σ	\$0.00 \$149,028.50	\$111,904.90 \$85,577.62 \$1,933,706.25 \$413,623.20 \$39,	,334.29	*****	*****	50,241.16       \$0.00       \$1         62,283.71       \$583,181.25	53,866.67       \$0.00       \$257,83         \$0.00       \$0.00       \$4,222,76	83.58     \$0.00     \$807,571.19       83.36     \$66,992.40     \$7,398,973.56	\$0.00 \$9,274.93 \$2,653,775.00 \$12,510.00		,970.85 \$0.00 ,664.16 \$37,500.00	\$865,263.89 \$0.00	\$0.00 \$0.00 \$530,658.56	\$0.00	\$21,892.05	\$0.00 \$0.0 \$0.0	
21051: Clay County 15 21127: Lawrence County 15	\$21,842,402.24 \$17,014,336.14	T-1, -1-1 T-1-1	\$155,747.43 \$0. \$282,455.38 \$225,774.	.00 \$96,815.93	\$0.00	\$8,765.15		\$426,266.88 \$0.00 \$270,109.55	10111	\$0.00 \$6,091.48 \$ \$0.00	\$199,917.78		92,057.81 \$0.00 \$1,1 14,347.40 \$0.00 \$1,0	******	\$1.12 \$0.00 \$6,893,738.53 89.44 \$0.00 \$234,447.42	\$0.00 \$0.00	\$2,227,990.92 \$0.00 \$0.00 \$0.00	\$0.00	\$0.00	\$0.00 \$2,072,136.11 \$1,771,107.31	\$0.00 \$0.00	\$0.00	\$0.00 \$0.0 \$4,646.4	
21129: Lee County 15 21153: Magoffin County 15	\$3,991,176.06 \$7,124,768.19	\$3,991,176.06 \$6,837,573.69 \$287,194.50		\$0.00 \$252,119.56 \$0.00 \$0.00 \$133,435.65 \$66,767.00 \$575,354.23		\$35,693.71 \$42,416.82	\$0.00 \$1,172,823.1			\$0.00 .525.50	\$123,323.07 \$173,193.23 \$48,7	1 1 1 1	07,058.52 \$0.00 43,985.55 \$0.00 \$9	\$ \$0.00 \$313,32	\$0.00 \$0.00 \$1,434,073.22 21.95 \$109,152.00 \$608,651.16	\$0.00 \$0.00	111	,734.61 \$0.00 ,858.41 \$0.00	\$0.00	\$0.00 \$108,738.54 \$456,180.73	\$0.00 \$0.00	\$0.00	\$0.00 \$0.0 \$0.0	
21189: Owsley County 15 21071: Floyd County 14	\$3,750,798.32 \$36,452,296.02	\$3,750,798.32 \$0.00 \$18,738,714.83 \$17,713,581.19	\$232,990.34 \$0.			, , , , ,	\$29,465.5		\$0.00 \$184,245.99 \$716,853.91 \$34,270.87	\$0.00 \$0.00	\$112,808.13 \$648,973.53 \$386,6	\$0.00	89,503.43 \$0.00 \$1 08,807.11 \$0.00	.,,,	92.30 \$0.00 \$836,236.51	\$0.00	\$404,862.28 \$0.00 \$1,167			\$0.00 \$172,499.58 \$0.00 \$1,291,067.53	\$0.00 \$0.00	\$11,254.92		0.00 \$0.00
21025: Breathitt County 13 21119: Knott County 13	\$35,758,441.94 \$39.124.209.61	\$19,046,110.17 \$16,712,331.77 \$29,905.061.22 \$9,219.148.39	\$909,902.03	.00 \$237,384.01 \$0.00 .00 \$168,636.36 \$0.00	\$225,513.59		\$589,683.0		\$0.00 \$423,131.63	\$0.00	\$821,472.72	\$0.00	06,928.25 \$0.00	777,27	\$0.00 \$0.00 \$3,053,686.77 \$ \$457.572.10	113,389.52	\$254,173.82 \$0.00 \$10,986	,933.13 \( \)16,598,942.25 \\ ,337.07 \( \)\$9,141,831.19		\$698,490.31 \$2,456,010.87	\$0.00 \$0.00		\$0.0	0.00 \$0.00
21193: Perry County 13 21237: Wolfe County 13	\$35,124,205.01 \$36,846,373.95 \$946.461.55	\$27,953,116.48 \$8,893,257.47		.00 \$191,711.26 \$0.00 .00 \$39,827.93		\$258,763.81 \$62,541.49		\$845,743.17	\$150,233.76 \$156,276.70 \$17.342.55			\$0.00		\$19,111.04 \$317,872.80 \$461,01 \$19,111.04 \$317,872.80		\$0.00 \$0.00 \$0.00	\$19,666	,440.60 \$8,288,409.00 .707.59 \$0.00	\$0.00	\$1,751,811.88 \$0.00 \$50,766.18	\$0.00 \$0.00 \$0.00	\$286,263.87		0.00 \$0.00
21237: Worre County 13 21043: Carter County 12 21065: Estill County 12	\$10,702,365.36 \$1,552,218.45	\$10,388,370.19 \$313,995.17	777,-171-1	.00		\$51,458.67	\$155,922.9	\$0.00 \$31,090.94	\$0.00 \$202,186.12	\$0.00	\$147,361.10	\$410,849.81 \$0.00 \$6	85,579.20 \$0.00 44,270.06 \$0.00	\$4,797,58 \$35,61	37.83 \$231,195.17 \$3,315,145.28	\$82,800.00	\$263,670.02 \$0.00	,101.58		\$75,377.37 \$0.00	\$0.00	\$0.00	\$0.0 \$0.0 \$0.00	0.00 \$0.00
21095: Harlan County 12	\$9,387,321.75	\$9,224,234.25 \$163,087.50	\$0.00 \$0.	.00		\$120,175.29		\$0.00	\$0.00		\$147,361.10	\$3,3	76,781.21 \$0.00 \$1,8	\$36,664.48 \$0.00 \$75,40	\$0.00 \$621,677.31	\$0.00	\$965	,223.08 \$7,500.00		\$1,422,914.03	\$0.00	\$0.00	\$0.00 \$0.0	0.00 \$0.00
21175: Morgan County 12 21235: Whitley County 12 21100: Jackson County 14	\$11,689,415.66 \$4,249,594.43	\$10,347,628.86 \$1,341,786.80 \$4,249,594.43 \$0.00 \$9.101.728.65 \$0.00	\$224,418.35 \$0.0	.00 p4,922,402.00 p1,1	86,472.00	\$122,382.99	\$126,544.3	\$0.00 \$174,502.26	\$0.00 \$97,627.62 \$0.00 \$291,681.64		\$432,689.88	\$0.00	95,568.16 \$0.00 \$4 08,252.86 \$0.00 \$1,1 54,793.27 \$0.00	43,043.70 \$0.00 \$	\$0.00 \$0.00 \$38,588.86	\$0.00	71,111	,309.06 \$0.00 .943.59 \$0.00		\$388,859.79 \$0.00 \$0.00 \$0.00 \$13.090.71	\$0.00 \$0.00 \$0.00	0 \$0.00 \$29,663.47	\$0.00	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
21109: Jackson County 11 21165: Menifee County 11	\$9,101,728.65 \$474,944.67	\$358,394.67 \$116,550.00	\$64,050.75 \$0.	.00 \$115,688.50	\$0.00 \$826,966.26 \$185,875.5	\$16,019.79	\$0.00	\$26,212.18	\$0.00 \$82,841.39		\$774,340.32		, , ,		32.06 \$26,550.00 \$0.00			, , , , , , , , , , , , , , , , , , , ,	\$0.00	ψ ψ,σσσ	\$0.00	\$428,587.33 \$0.00		0.00 \$0.00 0.00 \$0.00
21195: Pike County 11 21197: Powell County 11	\$30,680,754.55 \$1,653,745.50	\$26,745,921.61 \$3,934,832.94 \$1,621,366.50 \$32,379.00 \$16,890,911.92 \$366,571.50		.00		\$246,771.33 \$144,669.48	\$0.00		\$0.00		\$7,675.16	\$0.00	52,080.36 \$214,307.25 \$2 97,243.16 \$32,379.00	\$0.00 \$0.00 \$115,55	, , , , , , , , , , , , , , , , ,	\$0.00		\$101,985.00 \$0.00 \$0.00		\$0.00 \$128,258.92		00.00		0.00 \$0.00
21019: Boyd County 10 21121: Knox County 10	\$17,257,483.42 \$4,444,373.51	\$4,444,373.51 \$0.00		\$37,365.26 \$0.00		\$22,647.25		\$1.087,798.85	\$0.00	20.00	\$283,017.10 \$890,695.29	7.11	50,710.80 \$0.00 \$1,2	\$17,823.27 \$0.00 \$287,37		\$0.00	\$236,444.06 \$0.00	045.00	\$150,809.30	*****	\$0.00	\$1,294,625.26	\$0.00	
21131: Leslie County 10 21133: Letcher County 10	\$9,031,408.60 \$56,933,251.36	\$8,993,905.60 \$37,503.00 \$42,499,049.48 \$14,434,201.88				\$189,516.06 \$2,344.61	• • • • •	\$227,951.08	\$0.00 \$212,684.11	\$0.00 \$0.00	\$295,331.87	\$0.00	\$0.00 \$0.00 \$2,5	\$0.00 \$0.00 \$7,18	\$8.16 \$0.00 \$962,744.50 \$336,966.57	****		,015.28 \$0.00 ,592.81 ;14,434,201.88		\$198,329.22 \$1,677,006.98	\$0.00	\$14,687.07	\$0.0	0.00 \$0.00
21169: Metcalfe County 10 21031: Butler County 9	\$1,531,722.66 \$1,376,477.30	\$1,520,472.66 \$11,250.00 \$865,510.80 \$510,966.50	\$0.00 \$0.	.00		\$2,344.61	φο.σο φ.σ.,σ	\$27,800.01	\$0.00	\$45,752.30 \$15,44	T	\$0.00 \$18,750.00 \$	71,098.48 \$11,250.00 \$1 88,846.57 \$211,063.97 \$4	84,526.78 \$110,041.20					\$59,199.31 \$17,245.69 \$155,			\$0.00 \$78,294.43	\$0.00	
21063: Elliott County 9 21089: Greenup County 9	\$7,107,634.48 \$2,132,406.97	\$6,816,200.08 \$291,434.40 \$1,843,258.64 \$289,148.33	\$323,740.84 \$0.	.00		\$71,948.35	,		\$0.00 \$0.00 \$0.00 \$	\$0.00		\$180,493.13 \$0.00	\$0.00 \$99,999.75	\$4,139,45 \$851,62		\$0.00				\$187,930.54	\$0.00		\$0.00 \$0.0	\$0.00 \$0.00 \$0.00
21145: McCracken County 9 21159: Martin County 9	\$5,059,304.93 \$3,349,845.18	\$4,984,437.93 \$74,867.00 \$2,209,545.18 \$1,140,300.00			\$0.00			\$105,417.79					65,007.52 \$0.00	\$29,71	0.15 \$1,140,300.00 \$1,099,599.13	\$776,073.40 \$0.00 \$0.00		\$99.81 \$0.00	\$0.00	\$0.00 \$0.00		\$296,652.05	\$0.00	
21203: Rockcastle County 9 21225: Union County 9	\$3,229,502.31 \$2,199,442.87	7-,,	\$679,752.68 \$675.			\$105,184.56 \$46,099.27	\$0.00		\$0.00 \$126,225.09 \$25,	\$53,034.26	\$0.00	\$703,708.28 \$0.00 \$4		\$39,31	\$0.00 \$1,600,952.98 \$165,320.30	****			\$7,500.00 \$0.00	\$0.00 \$0.00	\$0.00	\$3,025.54		0.00 \$0.00
21229: Washington County 9 21013: Bell County 8	\$1,132,509.61 \$3,237,020.88	\$1,031,344.61 \$101,165.00 \$3,237,020.88 \$0.00	7	\$753,565.93 \$0.00		\$28,987.19	,	\$29,503.41 \$16,851.35	\$0.00 \$54,823.18 \$0.00		\$546,291.22	\$0.00 \$0.00 \$ \$0.00 \$	27 204 50	97,436.77 \$0.00	\$0.00	\$0.00			\$97,709.14	\$385,494.09	\$0.00	\$0.00	\$0.0	0.00 \$0.00 0.00 \$0.00
21033: Caldwell County 8 21049: Clark County 8	\$7,506,363.87 \$4,520,451.81	\$4,329,529.41 \$190,922.40	\$61,589.37 \$0.	.00		\$70,589.58 \$102,675.68	\$0.00 \$294,034.8	\$0.00	\$226,776.32	\$41,736.52 \$ \$0.00	\$0.00	\$0.00		\$3,123,51	5.13 \$190,922.40 \$228,273.39	\$5,341,292.24 \$695,320.20 \$0.00			\$28,572.09 \$300,570.78	\$0.00 \$243,482.94 \$0.00	\$0.00	\$1,023,780.93 \$53,683.28	\$0.00 \$0.0	\$0.00
21135: Lewis County 8 21157: Marshall County 8	\$1,161,890.05 \$10,749,737.96	\$10,749,737.96 \$0.00	\$305,805.54 \$0. \$352,399.17 \$0.			\$29,101.56 \$0.00	\$0.00	\$55,409.40	\$0.00	\$824,613.68	\$0.00		87,479.81 \$0.00			\$9,384,049.14 \$0.00			\$0.00				\$0.00	
21181: Nicholas County 8 21183: Ohio County 8	\$470,905.82 \$821,194.52	\$771,471.52 \$49,723.00	\$319,425.12 \$0.	\$0.00	\$0.00			\$10,155.73	\$0.00 \$55,358.34 \$0.00	\$41.302.24	00.02	\$235,572.75 \$0.00	\$0.00	\$11,98		\$49,723.00 \$210,825.93 \$0.00			1117	\$0.00 \$0.00		\$103,587.19	\$0.00	\$0.00
21061: Edmonson County 7 21105: Hickman County 7	\$3,021,573.41 \$567,245.05	\$546,575.05 \$20,670.00	\$24,146.23 \$0. \$178,162.30 \$20,670.	.00		\$19,850.00						\$46,181.13 \$0.00 \$			\$2,508,744.67	\$139,910.98 \$0.00			\$0.00				\$0.00 \$0.00	
21137: Lincoln County 7 21205: Rowan County 7	\$290,076.39 \$786,161.35	\$290,076.39 \$0.00 \$274,634.35 \$511,527.00	*****	\$0.00			\$0.00 \$30,536.2 \$168,595.0 \$96,741.2		\$0.00 \$63,866.22 \$376					\$124,44 \$	\$0.00 \$0.00 \$0.00 \$135,000.00			,488.67 \$0.00	\$0.00	\$0.00			\$0.0	.00 \$0.00
21215: Spencer County 7 21221: Trigg County 7	\$2,426,659.25 \$637,229.50	\$1,968,280.31 \$458,378.94 \$637,229.50 \$0.00	\$116,416.81 \$0.0 \$99,265.43 \$0.0	.00					\$0.00 \$278,258.31 \$419, \$0.00	\$160,080.96	\$0.00	\$1,357,877.96 \$39,180.75 \$0.00 \$0.00	69,418.17 \$0.00			\$0.00	)		\$83,908.44 \$36,594.28	\$0.00		\$181,204.62	\$0.00	
21001: Adair County 6 21005: Anderson County 6	\$17,950.96 \$275,385.18	\$17,950.96 \$0.00 \$275,385.18 \$0.00	\$207,644.38 \$0.			\$17,575.96 \$18,654.01	\$0.00	\$49,086.79	\$0.00	\$0.00					\$0.00	\$0.00			\$0.00 \$0.00					0.00 \$0.00
21007: Ballard County 6 21011: Bath County 6	\$2,244,620.87 \$864,170.60	\$2,244,620.87 \$0.00 \$764,435.61 \$99,734.99	\$500,378.21 \$0. \$114,349.84 \$0.			\$12,301.37			\$0.00			\$	\$1,986.93 \$0.00		\$1,394,966.22  7.98	\$0.00						\$53,136.87	\$0.0	0.00 \$0.00
21035: Calloway County 6 21045: Casey County 6	\$3,079,041.78 \$1,132,951.48	\$849,240.48 \$2,229,801.30 \$1,132,951.48 \$0.00	\$281,359.56 \$0.	.00					\$0.00	\$73,506.66	\$0.00		\$0.00 \$0.00	\$	\$377,710.36 \$2, 60.00 \$0.00 \$716,690.21		\$201	,948.77 \$0.00	\$0.00 \$0.00	\$0.00 \$0.00		\$48,458.71	\$0.00	
21047: Christian County 6 21055: Crittenden County 6	\$9,419,547.20 \$818,838.79	\$7,356,705.24 \$2,062,841.96 \$818,838.79 \$0.00	\$357,012.71 \$445,661. \$67,312.55 \$0.							\$423,671.72 \$ \$545,770.21 \$		\$127,801.53 \$0.00	39,991.95 \$0.00			\$3,235,658.54 \$1,617,180.93			\$18,459.97	\$0.00 \$0.00		\$315,623.00 \$19,502.58	\$0.00	
21057: Cumberland County 6 21075: Fulton County 6	\$4,228,692.24 \$2,433,101.98	\$3,792,714.24 \$435,978.00 \$2,328,669.98 \$104,432.00	\$779,304.22 \$104,432.	.00				\$32,701.02	\$32,577.93 \$435, 2 \$0.00	,978.00		\$0.00 \$0.00 \$3	76,975.55 \$0.00 21,826.97 \$0.00			\$0.00 \$1,171,891.14 \$0.00		,056.83 \$0.00	\$0.00	\$0.00		\$0.00 \$22,946.63	\$0.00 \$0.00	
21081: Grant County 6 21083: Graves County 6	\$1,599,251.97 \$55,590,833.97	\$1,599,251.97 \$0.00 \$54,915,833.97 \$675,000.00	\$388,961.01 \$0.0 \$0.00 \$0.0		\$0.00			\$40,395.87	\$0.00			\$395,745.44 \$0.00 \$ \$1,079,197.40 \$0.00	\$0.00			\$0.00 353,586,106.48 \$675,000.00	)		\$0.00 \$0.00	\$0.00 \$0.00		\$35,336.94		
21099: Hart County 6 21103: Henry County 6	\$893,821.47 \$523,716.24	\$527,708.47 \$366,113.00 \$523,716.24 \$0.00	\$278,195.85 \$0.	.00				\$73,651.36	\$66,113.00 \$78,470.47	\$0.00 S	\$0.00	\$86,877.97 \$0.00	67,676.74 \$0.00			\$306,122.98 \$225,000.00	0			\$0.00 \$0.00 \$0.00	\$75,000.00 \$0.00		\$0.00	
21113: Jessamine County 6 21125: Laurel County 6	\$2,042,301.26 \$598,332.13	\$2,042,301.26 \$0.00 \$573,506.13 \$24,826.00		\$573,506.13	24,826.00	\$80,172.40	\$0.00						\$0.00 \$0.00		8.27     \$0.00     \$0.00       \$0.00     \$0.00     \$0.00	\$0.00 \$0.00				\$0.00 \$0.00	\$0.00	0 \$0.00 \$8,481.66 \$0.00	\$0.00 \$0.00	
21139: Livingston County 6 21143: Lyon County 6	\$878,239.95 \$3,037,001.82	\$878,239.95 \$0.00 \$3,012,263.41 \$24,738.41	\$486,090.44 \$0. \$185,972.83 \$0.	.00		\$28,935.60	\$24,738.41			\$150,766.16 \$30,648.03		\$49,407.25 \$0.00 \$				\$2,485,912.24 \$0.00				\$0.00 \$0.00		\$9,917.90 \$280,794.71	*****	
21155: Marion County 6 21187: Owen County 6	\$250,483.51 \$1,087,769.71	\$250,483.51 \$0.00 \$1,003,359.07 \$84,410.64	\$89,316.41 \$0.4 \$13,675.82 \$0.4	.00			\$101,165.1	9 \$0.00 \$19,756.21	\$0.00			\$790,249.72 \$84,410.64 \$	48,645.34 \$0.00 78,512.13 \$0.00	\$	\$0.00 \$0.00 \$0.00	\$0.00 \$62,534.90 \$0.00			+,	\$0.00 \$0.00				
21233: Webster County 6 21029: Bullitt County 5	\$1,033,547.56 \$847,946.25	\$929,815.25 \$103,732.31 \$847,946.25 \$0.00	\$692,995.53 \$22,267.	.00			\$92,164.8	\$0.00 \$6 \$0.00 \$146,830.82	\$0.00 2 \$0.00	\$86,247.96 \$44,68	85.31	\$95,520.55 \$0.00 \$ \$347,882.47 \$0.00	\$36,780.00			\$0.00	)		\$0.00 \$261,068.10	\$0.00 \$0.00				
21039: Carlisle County 5 21041: Carroll County 5	\$1,742,686.41 \$2,510,340.22		\$628,864.68 \$34,535. \$66,969.14 \$0.		\$0.00				\$394,594.22	\$0.00			91,921.47 \$0.00 \$0.00						\$0.00	\$0.00		\$0.00	\$0.00	
21069: Fleming County 5 21085: Grayson County 5	\$241,195.80 \$209,488.27	1 1	\$142,681.34 \$0. \$100,679.71 \$0.					\$35,206.99	\$0.00 \$63,307.47	\$0.00				\$	\$0.00	\$14,824.14 \$0.00	)		\$18,696.26	\$0.00		\$75,288.16	\$0.00	00 \$0.00
21091: Hancock County 5 21101: Henderson County 5	\$454,208.47 \$2,863,599.21	\$454,208.47 \$0.00 \$2,843,352.96 \$20,246.25	\$65,640.95 \$0. \$864,277.00 \$0.	.00				\$33,426.24	\$0.00			\$114,684.19 \$0.00 \$ \$1,335,397.88 \$20,246.25 \$2		\$26,233.73 \$0.00					,,.	\$0.00 \$0.00				
21107: Hopkins County 5 21111: Jefferson County 5	\$25,647,117.55 \$8,092,230.70	\$24,136,676.35 \$1,510,441.20 \$4,091,180.44 \$4,001,050.26	ψ170,100.10	.00				\$1 \$35,435.99		\$137,949.08	\$0.00	\$2,186,214.02 \$1,854,671.25				\$21,925,554.13 \$1,510,441.20	)		\$1,151,805.11	\$0.00 \$0.00	\$0.00	\$1,771,546.62 0 \$0.00		
21147: McCreary County 5 21151: Madison County 5	\$354,975.99 \$1,072,061.78	\$354,975.99 \$0.00 \$800,031.60 \$272,030.18					\$65,878.3	\$8 \$237,830.18					34,196.86 \$0.00 \$1 82,483.62 \$0.00	13,574.89 \$0.00 \$7,20 \$443,97	\$0.00 \$0.00 \$3,564.89	\$34,200.00			\$0.00 \$4,125.00			\$0.00	\$0.00	
21191: Pendleton County 5 21201: Robertson County 5	\$1,292,693.52 \$33,501.54	\$1,163,170.77 \$129,522.75 \$33,501.54 \$0.00	\$351,001.00 \$0.0 \$11,995.96 \$0.0		67,682.00	\$18,038.19		\$6,141.48	\$0.00 \$15,364.10	\$0.00		\$182,466.79 \$0.00 \$4	40,745.05 \$50,487.75						\$0.00	\$0.00			\$0.	\$0.00
21217: Taylor County 5 21219: Todd County 5	\$387,913.19 \$150,444.79	\$387,913.19 \$0.00 \$150,444.79 \$0.00	\$33,928.69 \$0.	.00		\$40,305.58				\$65,790.09	\$0.00			\$	\$0.00	\$230,393.37 \$0.00 \$0.00	*****		\$117,214.24 \$0.00			\$50,726.01		
21223: Trimble County 5 21231: Wayne County 5	\$294,813.81 \$154,354.12	\$294,813.81 \$0.00 \$122,874.86 \$31,479.26	\$105,600.05 \$0.	.00 \$11,461.21	\$0.00	\$53,623.62			\$144,958.05	\$0.00		\$28,844.81 \$0.00	38,626.13 \$0.00	\$30,62	\$0.00				\$3,949.69 \$0.00			\$0.00		
21239: Woodford County 5 21009: Barren County 4	\$2,007,253.21 \$3,024,472.48	\$575,544.41 \$1,431,708.80 \$2,923,222.48 \$101,250.00				\$50,184.33	\$1,124.90	\$48,493.36	\$0.00	\$41,990.51	\$0.00				\$0.00 \$1,	\$295,263.13 \$0.00			\$448,385.18 \$29,3 \$1,937,888.12 \$101,3			\$28,481.54 \$648,080.72		
21017: Bourbon County 4 21027: Breckinridge County 4	\$390,876.71 \$119,965.35	\$390,876.71 \$0.00 \$119,965.35 \$0.00	\$119,965.35 \$0.	.00			\$345,825.2	\$0.00 \$45,051.44	\$0.00							\$0.00			\$0.00 \$0.00			\$0.00	\$0.00	0.00 \$0.00
21037: Campbell County 4 21059: Daviess County 4	\$1,377,313.19 \$1,806,952.24	\$1,124,519.68 \$252,793.51 \$994,280.24 \$812,672.00	\$228,952.13 \$252,793. \$240,206.04 \$0.		\$0.00			\$87,573.27	\$0.00	\$380,630.71 \$812,67	72.00	\$238,984.36 \$0.00 \$6	56,583.19 \$0.00						\$285,870.22	\$0.00				
21077: Gallatin County 4 21087: Green County 4	\$547,082.00 \$10,790.87		\$411,666.34 \$0. \$10,790.87 \$0.					\$22,688.80	\$0.00			\$112,726.86 \$0.00					\$0.00		\$0.00 \$0.00			\$0.00	\$0.00	
21123: Larue County 4 21141: Logan County 4	\$35,612.64 \$1,140,805.69	\$35,612.64 \$0.00 \$1,005,355.69 \$135,450.00		.00	\$0.00			\$14,707.87	\$0.00							\$129,028.07 \$45,000.00	)		\$0.00 \$333,884.74 \$90,			\$9,221.72 \$501,534.79		
21149: McLean County 4 21161: Mason County 4	\$419,184.63 \$179,868.22		\$219,274.56 \$85,985.0 \$126,974.57 \$0.0					\$52,893.65	5 \$0.00			\$84,496.11 \$0.00			\$0.00	\$0.00			\$0.00		\$0.00	\$29,428.96	\$0.00	
21163: Meade County 4 21171: Monroe County 4	\$64,460.05 \$70,593.39	\$64,460.05 \$0.00 \$31,021.51 \$39,571.88	\$64,460.05 \$0.0 \$8,574.20 \$0.0										\$	\$22,447.31 \$0.00		\$0.00	0		\$0.00 \$0.00 \$39,				\$0.00 \$0.00	
21173: Montgomery County 4 21199: Pulaski County 4	\$49,073.62 \$299,129.64	\$33,135.62 \$15,938.00 \$299,129.64 \$0.00		\$0.00	\$0.00				\$33,135.62 \$15,	,938.00				\$260,61	\$0.00 \$0.00 3.74 \$0.00 \$0.00	\$0.00			\$0.00	\$0.00		\$38,515.90		\$0.00
21207: Russell County 4 21211: Shelby County 4	\$659,712.77 \$478,013.97	\$191,757.77 \$467,955.00 \$336,344.97 \$141,669.00		\$0.00 \$4	67,955.00				\$47,278.61	\$0.00		\$81,014.27 \$141,669.00	17,810.00 \$0.00			\$0.00	)		\$73,947.77 \$208,052.09			\$0.00	\$0.00	
21227: Warren County 4 21021: Boyle County 3	\$15,114,665.25 \$313,793.51	\$12,023,330.25 \$3,091,335.00 \$252,098.51 \$61,695.00				\$114,710.17	\$0.00							\$68,57	\$0.00 76.60 \$61,695.00	\$0.00 310,818,312.39 \$2,997,585.00			\$616,888.86 \$93, \$68,811.74			\$588,129.00	\$0.00	
21023: Bracken County 3 21053: Clinton County 3	\$157,972.68 \$0.00	\$157,972.68 \$0.00 \$0.00 \$0.00	\$121,091.00 \$0.	.00					\$36,881.68	\$0.00				\$	\$0.00				\$0.00	\$0.00		\$0.00	\$0.00	\$0.00
21067: Fayette County 3 21079: Garrard County 3	\$912,798.86 \$0.00	\$714,564.86 \$198,234.00 \$0.00 \$0.00												\$	\$0.00 \$0.00 \$	198,234.00			\$714,564.86 \$0.00		\$0.00	\$0.00	\$0.00	
21093: Hardin County 3 21097: Harrison County 3	\$712,361.72 \$85,206.02	\$712,361.72 \$0.00 \$85,206.02 \$0.00		.00				\$67,727.07	\$0.00			\$712,361.72 \$0.00							\$0.00 \$17,478.95	\$0.00				0.00 \$0.00
21117: Kenton County 3 21167: Mercer County 3	\$923,934.62 \$138,620.72	\$899,897.12 \$24,037.50 \$138,620.72 \$0.00	\$340,170.93 \$0.		\$0.00							\$429,726.04 \$24,037.50		\$4.82	27.32 \$0.00				\$133,793.40					
21177: Muhlenberg County 3 21179: Nelson County 3	\$8,049,455.40 \$186,204.47	\$7,957,703.10 \$91,752.30 \$186,204.47 \$0.00	\$0.00 \$0.												\$0.00	\$1,835,960.72 \$91,752.30			\$801,466.13 \$186,204.47	\$0.00		\$5,320,276.25	\$0.00	
21213: Simpson County 3 21003: Allen County 2	\$200,865.07 \$67,139.76	\$163,365.07 \$37,500.00 \$67,139.76 \$0.00				\$18,008.48	\$0.00												\$43,911.71 \$37,4 \$67,139.76	500.00		\$101,444.88 \$0.00	\$0.00 \$0.00	
21185: Oldham County 2 21015: Boone County 1	\$24,104.20 \$696,713.22	\$24,104.20 \$0.00	\$24,104.20 \$0. \$696,713.22 \$0.																		\$0.00	\$0.00		
21209: Scott County	\$0.00	\$0.00					\$0.0	\$0.00																

## CASCAIDIING IIMIPACTS OF CLIIMATE EWENTS

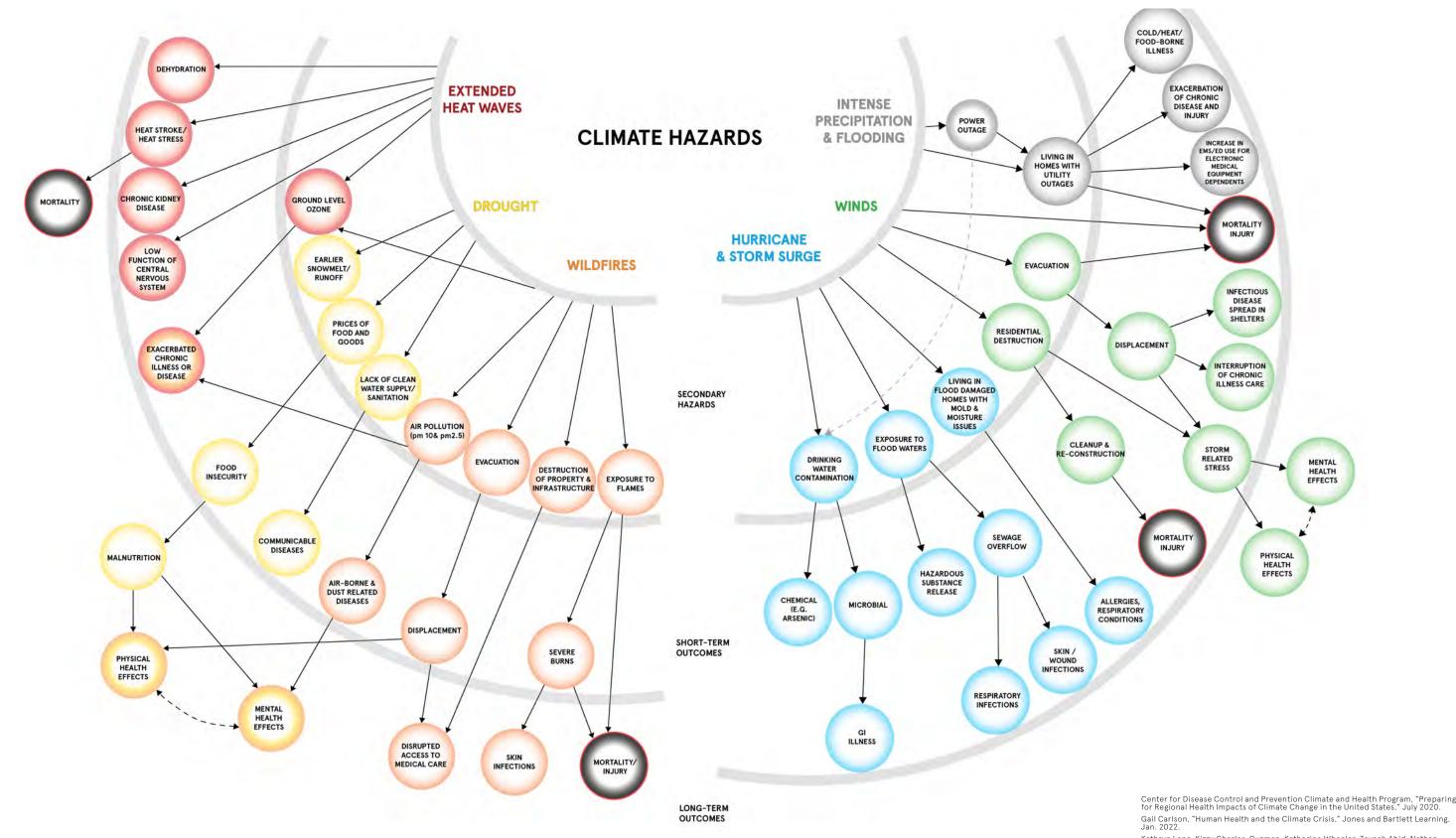
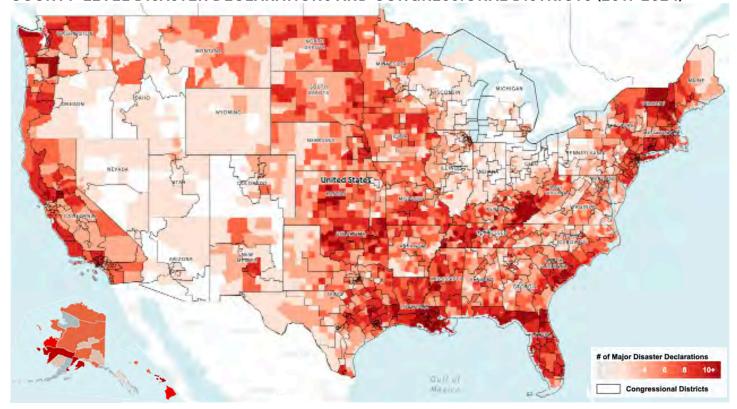


Illustration: Geethanjali MR

Kathryn Lane, Kizzy Charles-Guzman, Katherine Wheeler, Zaynah Abid, Nathan Graber and Thomas Matte, "Health effects of coastal storms and flooding in Urban Areas: A Review and Vulnerability Assessment," Journal of Environmental and Public Health Volume 2013. http://dx.doi.org/10.1155/2013/913064

## ATILAS OF ACCOUNTABILITY

COUNTY-LEVEL DISASTER DECLARATIONS AND CONGRESSIONAL DISTRICTS (2011-2024)



As extreme weather continues to impact the U.S., Rebuild by Design launches the Atlas of Accountability, a mapping tool designed to help communities and policymakers understand their localized, climate-fueled exposure to extreme weather disasters. The tool builds on Rebuild by Design's 2022 report, "Atlas of Disaster," which analyzes county-level extreme weather disaster declarations and post-disaster federal assistance. The analysis highlights the urgency of bipartisan cooperation and the need to unite across the urban-rural divide.

99.5% OF CONGRESSIONAL DISTRICTS include a county that received a major disaster declaration for extreme weather between 2011 and 2024, amounting to \$117.9 BILLION in federal post-disaster assistance from FEMA and HUD CDBG-DR.

## **FINDINGS**

80% OF STATES	EXPERIENCED 10 OR MORE MAJOR DISASTER DECLARATIONS
28 STATES	HAD EVERY COUNTY IMPACTED BY A MAJOR DISASTER DECLARATION
39 DISASTERS	CALIFORNIA HAD THE HIGHEST COUNT IN THE U.S., SOME OF WHICH INCLUDED DECLARATIONS FOR TRIBAL GOVERNMENTS
22 DISASTERS	WASHINGTON COUNTY IN VERMONT, RECORDED THE HIGHEST NUMBER OF MAJOR DISASTER DECLARATIONS
HIGHEST PER CAPITA	STATES WITH THE HIGHEST PER CAPITA POST-DISASTER ASSISTANCE SPAN ACROSS BOTH POLITICAL AFFILIATIONS: LOUISIANA, HAWAII, NEW YORK, VERMONT AND NEW JERSEY.

## AT A GLANCE

**# OF DISASTER** 

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## STATES WITH HIGHEST DISASTER DECLARATIONS

STATE

**CALIFORNIA\*** 

OKLAHOMA\*

**TENNESSEE** 

IOWA\*

ALASKA

MISSISSIPPI

VERMONT

KENTUCKY

**NEW YORK** 

WASHINGTON\*

## COUNTIES WITH HIGHEST DISASTER DECLARATIONS

S	COUNTY	# OF DISASTERS
	WASHINGTON, VT	22
	MERRIMACK, NH	19
	LAMOILLE, VT	17
	FRANKLIN, KY	16
	JOHNSON, KY	16
	ESSEX, VT	16
	ORLEANS, VT	16
	CLAY, KY	15
	LAWRENCE, KY	15
	LEE, KY	15

Disaster declarations for climate events (2011-2024) from iParametrics: geographic boundaries from U.S. Census TIGER/Line Shapefiles (2023); congressional representation boundaries from USDOT BTS (2024); population data from U.S. Census ACS (2018-2022, 5-Year Estimate). Congressional districts were assigned to counties using spatial analysis, with a minimum 5% area overlap threshold between county and district boundaries.

27

**METHODOLOGY** 

REBUILD

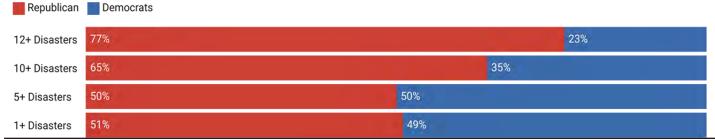
DESIGN

#### TOP 10 COUNTIES BY POST-DISASTER FEMA FUNDS BETWEEN 2011-2024

NEW YORK, NY       9.1 BILLION       NY-10, NY-12, NY-13         NASSAU, NY       2.6 BILLION       NY-02, NY-03, NY-04         HARRIS, TX       1.6 BILLION       TX-02, TX-07, TX-08, TX-09, TX-18, TX-29, TX-38         CALCASIEU, LA       1.3 BILLION       LA-03, LA-04         QUEENS, NY       1.1 BILLLION       NY-03, NY-05, NY-06, NY-07, NY-14         BAY, FL       978.1 MILLION       FL-02         TERREBONNE, LA       730.9 MILLION       LA-03	
HARRIS, TX       1.6 BILLION       TX-02, TX-07, TX-08, TX-09, TX-18, TX-29, TX-38         CALCASIEU, LA       1.3 BILLION       LA-03, LA-04         QUEENS, NY       1.1 BILLLION       NY-03, NY-05, NY-06, NY-07, NY-14         BAY, FL       978.1 MILLION       FL-02	
TX-38  CALCASIEU, LA  1.3 BILLION LA-03, LA-04  QUEENS, NY  1.1 BILLLION NY-03, NY-05, NY-06, NY-07, NY-14  BAY, FL  978.1 MILLION FL-02	
QUEENS, NY         1.1 BILLLION NY-03, NY-05, NY-06, NY-07, NY-14           BAY, FL         978.1 MILLION FL-02	ГХ-36,
BAY, FL 978.1 MILLION FL-02	
TERREBONNE, LA 730.9 MILLION LA-03	
SUFFOLK, NY 599.1 MILLION NY-01, NY-02	
LEE, FL 590.4 MILLION FL-17, FL-19	

<sup>\*</sup> FEMA funds refers to Public Assistance (PA) and Hazard Mitigation (HM) only.

## **ACROSS ALL DISTRICTS**



**WE WANT TO WORK WITH YOU!** Rebuild by Design partners with communities and policymakers to design regional and local processes that create and implement climate-adaptive infrastructure with multiple co-benefits. Contact us at info@rebuildbydesign.org.

<sup>\*</sup> In instances where tribal land is affected, federal disaster declarations may count the same

## **DISASTER DECLARATIONS**

**ALL 50 STATES (2011-2024)** 

STATE	TOTAL DISASTERS	STATE	TOTAL DISASTERS
California*	39	Georgia	15
Oklahoma*	30	New Jersey	14
Tennessee	30	Oregon*	14
lowa*	26	New Mexico*	14
Vermont	25	Virginia	14
Alaska	25	Maine	14
Mississippi	25	Hawaii	13
New York	23	South Carolina	11
West Virginia	23	Connecticut	11
Kentucky	23	Massachusetts	11
Washington*	23	Arizona*	11
South Dakota*	22	Pennsylvania	10
New Hampshire	22	Maryland	10
Florida*	21	Idaho	10
Nebraska*	21	Wisconsin	10
Texas	20	Illinois	9
Arkansas	20	Colorado	8
Kansas	20	Rhode Island	8
Louisiana	19	Utah	8
Alabama	19	Michigan	7
North Dakota*	18	Ohio	7
Montana	18	Wyoming	6
North Carolina*	17	Delaware	5
Missouri	17	Indiana	5
Minnesota	16	Nevada	4

# FEMA AND HUD COST PER CAPITA ALL 50 STATES (2011-2024)

COUNTY	PER CAPITA*	COUNTY	PER C
Louisiana	\$2,953	Tennessee	\$149
Hawaii	\$1,772	Georgia	\$145
New York	\$1,385	Arkansas	\$135
/ermont	\$902	Montana	\$116
ew Jersey	\$854	Massachusetts	\$77
lorth Dakota	\$846	New Hampshire	\$77
Alaska	\$770	Kansas	\$77
lorida	\$571		\$72
Гехаѕ	\$531	Illinois	\$67
Vest Virginia	\$531	Maine	\$62
lebraska	\$453	Minnesota	\$61
Iorth Carolina	\$428	Washington	\$61
(entucky	\$341	Rhode Island	\$61
outh Dakota	\$339	Pennsylvania	\$58
outh Carolina	\$336	Maryland	\$41
owa	\$329	Idaho	\$38
Mabama	\$314	Michigan	\$33
Dregon	\$294	Wyoming	\$30
Oklahoma	\$274	Wisconsin	\$27
Mississippi	\$272	Utah	\$23
New Mexico	\$256	Delaware	\$20
California	\$224	Ohio	\$19
Missouri	\$187	Nevada	\$11
Connecticut	\$158	Indiana	\$10
Colorado	\$157	Arizona	\$3

<sup>\*</sup>In instances where tribal land is affected, federal disaster declarations may count the same event twice.

<sup>\*</sup>Per capita is calculated using FEMA (PA+HM) & HUD CDBG-DR federal post-disaster funds.

## **DISASTER DECLARATIONS**

**TOP 50 CONGRESSIONAL DISTRICTS (2011-2024)** 

DISTRICT	REPRESENTATIVE	DISTRICT	REPRESENTATIVE
VT-AT-LARGE	Becca Balint (D)	KS-01	Tracey Mann (R)
NH-01	Chris Pappas (D)	KS-04	Ron Estes (R)
NH-02	Maggie Goodlander (D)	LA-06	Cleo Fields (D)
KY-05	Harold Rogers (R)	OK-03*	Frank Lucas (R)
KY-06	Andy Barr (R)	SD-AT-LARGE*	Dusty Johnson (R)
LA-01	Steve Scalise (R)	WA-03*	Marie Perez (D)
LA-02	Troy Carter (D)	CA-03*	Kevin Kiley (R)
LA-03	Clay Higgins (R)	CA-06*	Ami Bera (D)
LA-05	Julia Letlow (R)	CA-07*	Doris Matsui (D)
MO-03	Robert Onder (R)	CT-01	John Larson (D)
NE-02*	Don Bacon (R)	CT-03	Rosa DeLauro (D)
KY-04	Thomas Massie (R)	CT-04	James Himes (D)
MS-02	Bennie Thompson (D)	CT-05	Jahana Hayes (D)
MS-03	Michael Guest (R)	FL-04*	Aaron Bean (R)
NE-03*	Adrian Smith (R)	FL-05*	John Rutherford (R)
OK-02*	Josh Brecheen (R)	FL-06*	Michael Waltz (R)
TN-05	Andrew Ogles (R)	KY-01	James Comer (R)
TN-06	John Rose (R)	SC-01	Nancy Mace (R)
TN-07	Mark Green (R)	SC-06	James Clyburn (D)
TX-08	Morgan Luttrell (R)	TN-08	David Kustoff (R)
TX-17	Pete Sessions (R)	TN-09	Steve Cohen (D)
WV-01	Carol Miller (R)	TX-36	Brian Babin (R)
CA-04*	Mike Thompson (D)	WA-06*	Emily Randall (D)
FL-02*	Neal Dunn (R)	CA-01*	Doug LaMalfa (R)
FL-03*	Kat Cammack (R)	CA-02*	Jared Huffman (D)

<sup>\*</sup>In instances where tribal land is affected, federal disaster declarations may count the same event twice.

## TOGETHER, WE CAN FIX THIS

- Shifting post-disaster federal dollars for pre-disaster funding so communities can in invest infrastructure before they suffer.
- Creating new sources of dedicated funding such as investigating state voter referendums, surcharges on certain types of insurance coverage (e.g., property and casualty), and state-level superfund laws.
- Mandating that U.S. insurance companies take into account mitigation measures when pricing insurance policies, giving policyholders incentives to take small actions that will save all taxpayers money, just as FEMA does with the National Flood Insurance Program's Community Rating System.
- Creating better infrastructure: ensuring that every piece of new infrastructure is built to withstand climate events to the life cycle of that infrastructure; is designed infrastructure to address both physical and social vulnerabilities, thus multiplying taxpayers investments.
- Amending the Stafford Act to ensure that heat waves are treated the same as other federal disasters, deploying resources to communities who have been suffering with no end in sight.



# CILIIMIATIE CHANGE IINICIRIEASIES IINIEQUITIIES

The impacts of storms and flooding disproportionately affect the most vulnerable people. Disasters are not created by natural events alone; rather, they are the product of natural events and a combination of social, political, and economic stressors. Therefore, as climate change increases the frequency of flooding, it will further reinforce underlying vulnerabilities and

#### **DURING A FLOOD**

Low-income communities experience greater challenges evacuating due to the cost of transportation and relocation, placing them at a greater risk of injury, disease, or death.

Residents who do not leave during a storm have increased health risks, such as exposure to contaminated water, interrupted access to medical care, and difficulty acquiring food.

Low-income and minority populations, as well as elderly nursing home residents, are more likely to have chronic health problems, increasing their vulnerability to other storm hazards.<sup>1</sup>

#### **AFTER A FLOOD**

A medium-sized natural disaster leads to a 5% increase in the share of people with debt collections after one year, which doubles to 10% after four years.<sup>2</sup>

People in poverty are less likely to have flood insurance or to maintain flood insurance payments.

The Urban Institute has found that after 4 years, a medium-sized disaster causes an average 31-point decline in credit scores for people living in communities of color, whereas people living in majority-white communities experienced a 4-point decline.3

FEMA funding largely focuses on homeowners; meanwhile renters typically face rent hikes and mass evictions.

Lower income households may not have the financial and educational resources to advocate for fair buyouts, repair damages, and afford temporary housing.

After federal aid has been distributed to communities that have experienced a disaster, predominantly white, well-educated homeowners experience a significant increase in wealth. Conversely, communities of color, particularly those who are less educated renters, experience a decline in wealth.<sup>4</sup>

## THIE COST OF DISASTERS

Benefit - Cost Ratio for Investing in Hazard Mitigation Infrastructure

13:1

The US Chamber of Commerce found that \$13 was the amount saved in economic impact and cleanup costs for every \$1 invested in resilience.<sup>6</sup>

#### **Economic Impacts for the USA**



HAZARD MITIGATION FUNDING IS A STRATEGIC INVESTMENT IN OUR FUTURE, REDUCING RISKS AND COSTS ASSOCIATED WITH CLIMATE CHANGE WHILE BUILDING MORE RESILIENT AND SUSTAINABLE COMMUNITIES.

Project types range from green infrastructure, such as wetlands restoration or bioswales for stormwater management, to grey infrastructure, such as right-sizing a dam or bridge.



IMAGE SOURCE: BURO HAPPOLD

32 THERE IS NO TURNING BACK

<sup>1.</sup> Lane et. al, "Health Effects of Coastal Storms and Flooding in Urban Areas: A Review and Vulnerability Assessment," 2013.

<sup>2.</sup> Urban Institute, "Insult to Injury: Natural Diasasters and Residents' Financial Health," 2019.

<sup>3.</sup> Urban Institute, 2019

<sup>4.</sup> Howell & Elliott, "Damages done, the Longitudinal Impacts of Natural Hazards on Wealth Inequality in the United States," 2018; Muñoz & Tate, " Unequal Recovery? Federal Resourcee Distribution after Midwest Flood Disaster," 2016.

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REBUILD BY DESIGN PARTNERS WITH COMMUNITIES TO DESIGN REGIONAL AND LOCAL PROCESSES THAT CREATE AND IMPLEMENT INFRASTRUCTURE POLICY AND PROJECTS TO PREPARE COMMUNITIES FOR THE WORLD'S MOST PRESSING PROBLEMS.

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