United States Government Accountability Office

Report to Congressional Requesters

September 2025

TORNADOES

Agencies Promote Resilience but Actions Needed to Improve Access to FEMA Assistance

GAO-25-107384

GAO Highlights

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GAO-25-107384 September 2025

Highlights of GAO-25-107384, a report to congressional requesters.

Why This Matters

Tornadoes claim more lives annually in the U.S. than hurricanes and earthquakes combined. In 2024, there were more than 2,100 tornadoes in the U.S., the highest annual total on record dating back to 1950. FEMA helps tornado survivors and communities through a variety of programs.

GAO Key Takeaways

The President approved 94 major disaster declarations involving tornadoes, in fiscal years 2019 through 2024. For those disasters, FEMA obligated $2.8 billion for Public Assistance and the Individuals and Households Program, as of December 2024.

FEMA also assists tribal, state, local, and territorial governments through its Emergency Management Performance Grant program. This program is the primary source of federal support for developing and maintaining emergency management expertise. It pays for salaries and provides resources related to hazard preparation.

Per statute, only states and territories are eligible to receive Emergency Management Performance Grant awards directly from FEMA; Tribes are not eligible to apply directly. States may distribute grant awards to local governments and Tribes.

From fiscal years 2014 through 2023, 17 states did not distribute any awards to Tribes within their state.

When communities cannot access assistance to build emergency management capacity, it could mean not being able to plan and prepare for a disaster, such as a tornado.

In April 2023, FEMA submitted a legislative proposal to Congress outlining several possible solutions that would enable Tribes to more easily access this funding. Congress has not yet acted on FEMA's legislative proposal, as of August 2025.

A Home in Nebraska Damaged by a Tornado in April 2024

Source: GAO. | GAO-25-107384

How GAO Did This Study

We analyzed FEMA data on tornado disasters from 2019 through 2024. We also visited four states, and interviewed emergency management officials from seven counties and two Tribes impacted by tornadoes during that span.

What GAO Recommends

We are recommending that Congress consider creating a new program or amending an existing program to provide grants directly to tribal governments to build emergency management capacity. We are also making three recommendations to FEMA to improve access to assistance. FEMA concurred with the recommendations.

For more information, contact Chris Currie at curriec@gao.gov.

Contents

Abbreviations

ASCE	American Society of Civil Engineers
BRIC	Building Resilient Infrastructure and Communities
EAS	Emergency Alert System
EF Scale	Enhanced Fujita Scale
EMPG	Emergency Management Performance Grant
FEMA	Federal Emergency Management Agency
IPAWS	Integrated Public Alert and Warning System
ICC	International Code Council
NIST	National Institute of Standards and Technology
NOAA	National Oceanic and Atmospheric Administration
Windstorm Program	National Windstorm Impact Reduction Program
PCA	Partial County Alerting
WEA	Wireless Emergency Alert

U.S. GOVERNMENT ACCOUNTABILITY OFFICE
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September 2, 2025

The Honorable Bennie G. Thompson
Ranking Member
Committee on Homeland Security
House of Representatives

The Honorable Tim Kennedy
Ranking Member
Subcommittee on Emergency Management and Technology
Committee on Homeland Security
House of Representatives

The Honorable Troy Carter
House of Representatives

About 1,200 tornadoes impact communities across the U.S. every year, claiming dozens of lives, destroying property and crops, and disrupting businesses. In the first half of 2025, tornadoes resulted in almost 70 deaths. Tornadoes pose a significant threat to life, property, and critical infrastructure due to their devastating power – including winds that can exceed 300 miles per hour. The largest tornadoes can carve damage paths more than 1 mile wide and more than 50 miles long. Tornadoes are responsible for claiming more lives annually in the U.S. than hurricanes and earthquakes combined.[1] In addition, storms spawning tornadoes surpass the collective annual insured losses of hurricanes and tropical storms, causing an average loss of over $10 billion per year.[2] In 2024, there were over 2,100 recorded tornadoes in the U.S., the highest annual total on record dating back to 1950.

Several federal departments and agencies have roles in tornado mitigation, response, and recovery. Among them, within the Department of Homeland Security, the Federal Emergency Management Agency (FEMA) leads the nation's efforts to mitigate against, respond to, and

[1]Calculations for tornadoes and hurricanes do not include deaths caused by flooding.

[2]NIST, *Major New Building Standard Can Map Out Tornado Threat for the First Time* (Gaithersburg, MD: June 21, 2021). National Windstorm Impact Reduction Program, *Strategic Plan for the National Windstorm Impact Reduction Program* (2018). Insurance Information Institute, *Spotlight on: Catastrophes - Insurance issues* (Feb. 19, 2024).

recover from natural disasters, including tornadoes.[3] FEMA administers assistance to tornado survivors and affected communities through a variety of programs, which we describe below.

Additionally, within the Department of Commerce, the National Institute of Standards and Technology (NIST) brings measurement science to key measurement and documentary standards, including for building codes.[4] The National Oceanic and Atmospheric Administration's (NOAA) National Weather Service, also within the Department of Commerce, is responsible for weather forecasting and for issuing storm warnings, including for tornadoes.[5]

You asked us to review issues related to the Federal government's efforts to help communities prepare for tornadoes. This report examines (1) the extent to which FEMA and NIST have helped communities mitigate the effects of tornadoes; (2) how emergency alert systems are used to warn residents about tornadoes, and what tribal, state, and local officials report are their alerting needs; and (3) actions FEMA has taken to help communities respond to and recover from tornadoes, and the extent to which FEMA has addressed communities' needs.

To address these topics, we analyzed data for FEMA's Public Assistance and Individual Assistance programs for tornado-related major disaster declarations that were declared in fiscal years 2019 through 2024.[6] We also analyzed data for FEMA preparedness and mitigation grant programs from fiscal years 2014 through 2024, including to describe funding obligated for tornado-related projects.[7] To assess the reliability of the data, we conducted electronic data testing, reviewed database

[3]6 U.S.C. § 313.

[4]See 15 U.S.C. § 271.

[5]See 15 U.S.C. § 313.

[6]Based on data reliability assessments from previous GAO reviews, we limited our analysis of Individual Assistance data to one of its component programs, the Individuals and Households Program.

[7]Specifically, we analyzed data for the following FEMA grant programs: Building Resilient Infrastructure and Communities (BRIC), Hazard Mitigation Grant Program, Pre-Disaster Mitigation, Pre-Disaster Mitigation Congressionally Directed Spending, and the Emergency Management Performance Grant. We analyzed Emergency Management Performance Grant data from fiscal years 2014 to 2023. An obligation is a definite commitment that creates a legal liability of the government for the payment of goods and services ordered or received.

documentation, and interviewed knowledgeable agency officials about the processes for collecting and maintaining these data. We found the data to be sufficiently reliable for our purposes.

We interviewed emergency management officials from a non-generalizable sample of five states, seven counties, and two Tribes that were impacted by tornadoes from 2019 to 2024. We selected these jurisdictions to obtain a variety of perspectives based on factors such as the recency of a tornado-related disaster declaration, the FEMA region, and the racial demographics and socioeconomic status of the county. We conducted in-person and virtual site visits with two Tribes, as well as in five states: Iowa, Michigan, Mississippi, Nebraska, and Oklahoma. See appendix I for our analysis of major disaster declarations and FEMA obligations for tornado mitigation and recovery projects for the four states we visited in-person. We spoke with one national organization representing emergency management officials (the National Emergency Management Association) and one organization representing tribal emergency management officials.[8]

We reviewed relevant laws and agency guidance and strategy documents, as well as assessments of FEMA disaster assistance. We interviewed FEMA, NIST, and NOAA headquarters and field officials about the agencies' efforts to help communities prepare for, respond to, and recover from tornadoes, including for their perspectives on challenges accessing resources that communities identified. See appendix II for additional details about our scope and methodology.

We conducted this performance audit from February 2024 to September 2025 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

[8]The National Emergency Management Association is the professional association for emergency management directors from all 50 states, eight U.S. territories, and the District of Columbia. The association aims to enhance public safety by improving the nation's ability to prepare for, respond to, and recover from emergencies, disasters, and threats to national security. Through the National Emergency Management Association, we obtained perspectives on tornado-related disasters from state emergency management officials in Alabama, Illinois, Kansas, and Ohio.

Background

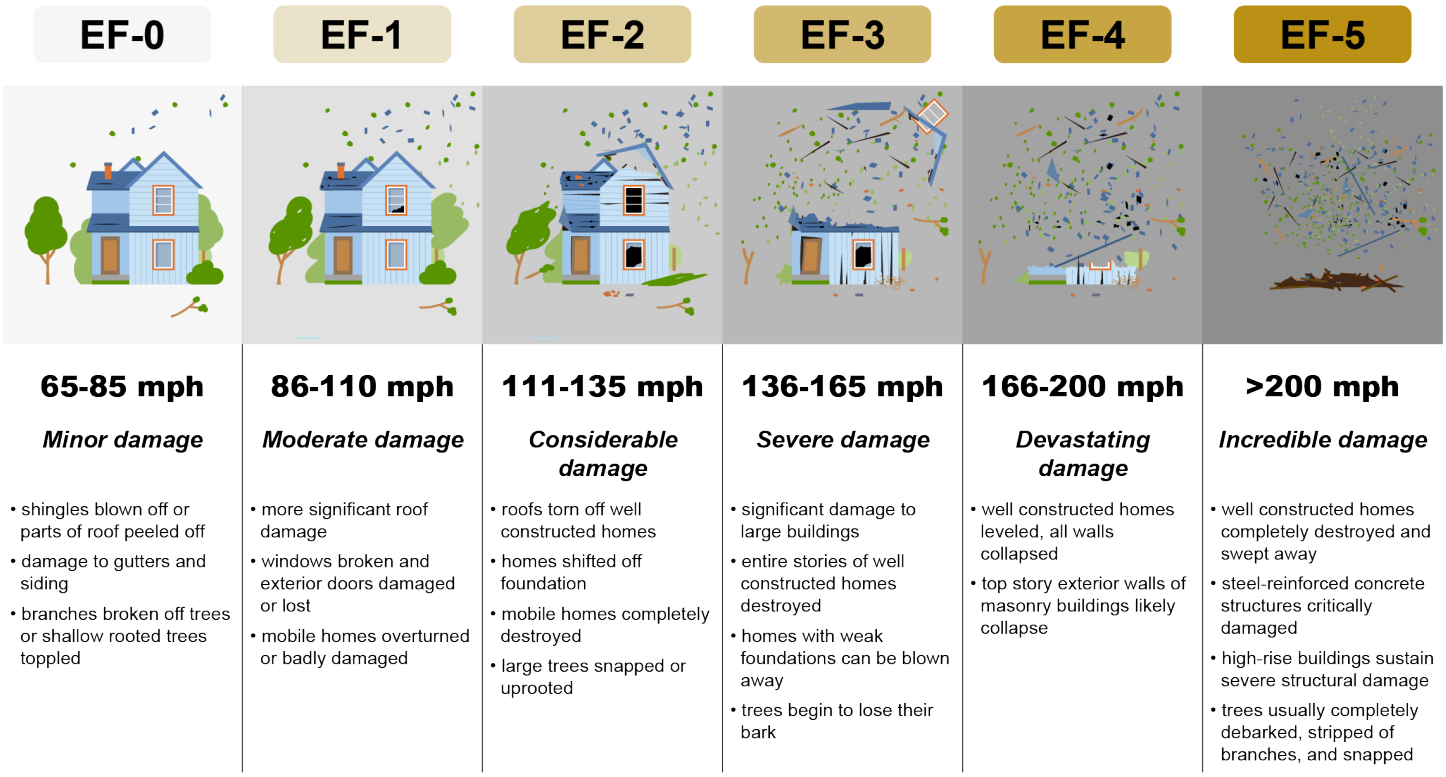
Tornadoes in the U.S.

Since 2007, the National Weather Service has used the Enhanced Fujita Scale (EF Scale) to assign a tornado a rating based on estimated wind speeds and related damage. As shown in figure 1, the scale ranges from relatively minor EF-0 tornadoes, with wind speeds 65-85 miles per hour, to the most destructive EF-5 tornadoes with wind speeds greater than 200 miles per hour.[9]

About 97 percent of the 1,200 tornadoes in the U.S. each year are rated as EF-2 or lower on the EF Scale, with wind speeds below 135 miles per hour. At the same time, less than 1 percent of tornadoes are rated EF-4 or EF-5 with winds above 166 miles per hour, but they account for 70 percent of all tornado deaths. Further, these tornadoes typically occur as part of a large tornado outbreak lasting several hours and collectively covering hundreds of miles, according to NIST officials. There were 15 EF-5 tornadoes in the U.S. from calendar years 1990 through 2024. This included an EF-5 in 2011 in Joplin, Missouri, which killed 161 people, injured over a thousand, and resulted in nearly $3 billion in insured losses.

[9]The EF Scale is a set of wind estimates based on damage, using three-second gust estimates at the point of damage.

Figure 1: Enhanced Fujita (EF) Scale for Tornadoes



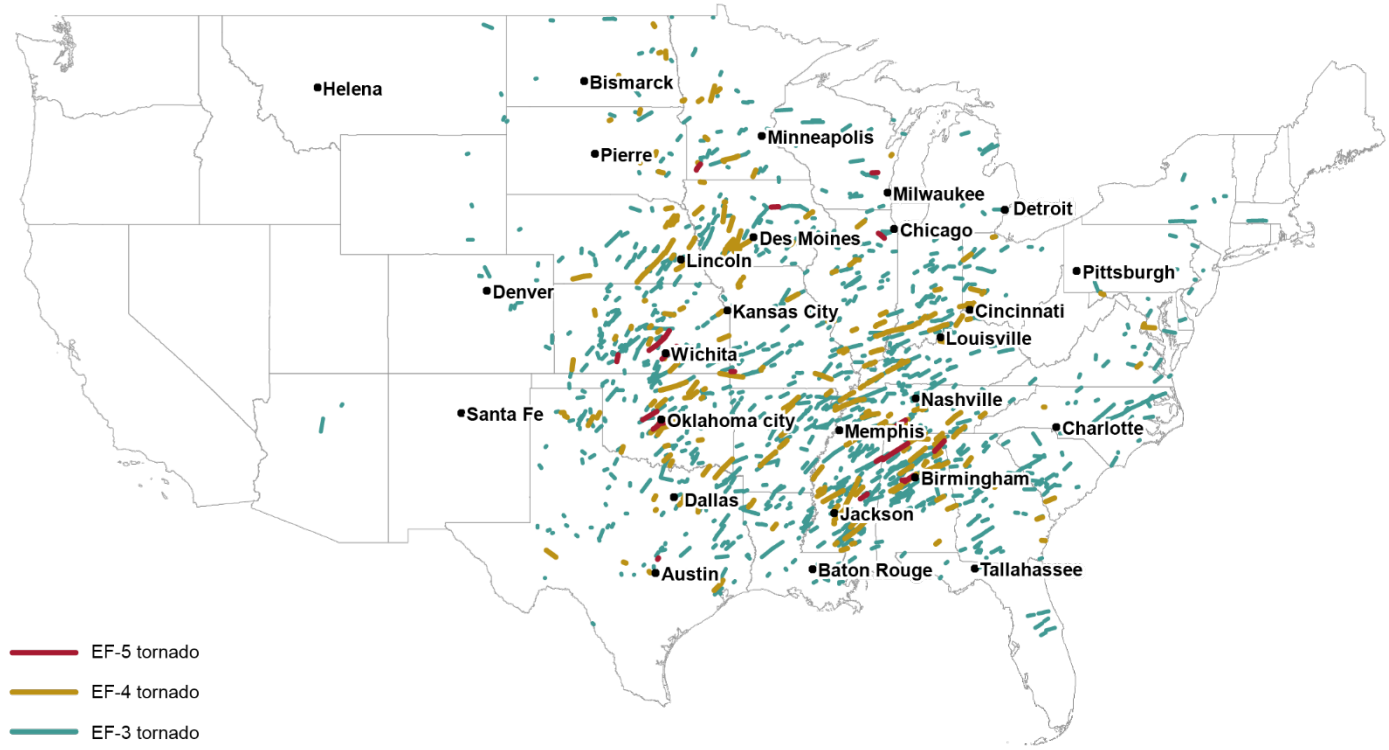
Source: GAO analysis of National Oceanic and Atmospheric Administration information; inspiring team/adobestock.com; GAO icons. | GAO-25-107384

Because of its unique geography, the U.S. has more tornadoes, and more intense tornadoes, than any country in the world.[10] Tornadoes occur in all 50 states, but most tornadoes, and the most powerful tornadoes, occur east of the Continental Divide as shown in figure 2. Tornadoes form frequently in three distinct regions, shifting seasonally: (1) the Southern Plains (including Texas, Oklahoma, and Kansas); (2) the Gulf Coast; and (3) the Northern Plains and upper Midwest (including North Dakota, South Dakota, Nebraska, Iowa, and Minnesota). Recent studies suggest that tornadoes may be occurring more frequently during times of the year and in parts of the U.S. where they have historically been less frequent,

[10]Royal Meteorological Society, *Tornadoes Around the World* (Reading, United Kingdom: Dec. 14, 2023).

including the Southeast.[11] Tornadoes are most common during spring and summer, and during the late afternoon or early evening. However, tornadoes can occur any time of year if favorable conditions develop.

Figure 2: Paths of EF-3, EF-4, and EF-5 Tornadoes in the U.S., 1990-2024



Source: GAO Analysis of National Weather Service Storm Prediction Center data, U.S. Census Bureau (map). | GAO-25-107384

Note: Tornado track lines are not to scale. Specifically, according to the National Weather Service, the tracks represent the path lengths and frequencies of extreme tornadoes, but the width of the track lines are greater than the widths of the areas prone to damaging winds. EF-3 tornadoes produce winds up to 165 mph. EF-4 tornadoes produce winds up to 200 mph. EF-5 tornadoes produce winds greater than 200 mph.

[11]Vittorio A. Gensini and Harold E. Brooks, "Spatial Trends in United States Tornado Frequency," npj Climate and Atmospheric Science, vol. 1, no. 38 (2018). Moore, T.W., "Annual and seasonal tornado trends in the contiguous United States and its regions," International Journal of Climatology, vol. 38, no. 3 (2018).

Federal Agency Roles and Responsibilities

National Windstorm Impact Reduction Program

The National Windstorm Impact Reduction Program (Windstorm Program) is a science and engineering-based coordinating program that seeks to achieve major measurable reductions in losses of life and property from windstorms, including tornadoes. The program is a coordinated federal effort in cooperation with other levels of government, academia, and the private sector.

NIST is designated by federal law as the lead agency for the Windstorm Program.[12] In this role, NIST has primary responsibility for planning and coordinating the four Windstorm Program agencies, which also include FEMA, NOAA, and the National Science Foundation. Each agency's responsibilities for the Windstorm Program include:

- NIST: conduct research and development to improve model building codes, voluntary standards, and best practices for the design, construction, and retrofit of buildings, other structures, and lifelines.[13]
- FEMA: support the development of risk assessment tools and mitigation techniques and the promotion of windstorm preparedness, mitigation measures, and better building practices, among other responsibilities.[14]
- NOAA: support atmospheric sciences research to improve the understanding of the behavior of windstorms and their impact on buildings, structures, and lifelines.[15]
- National Science Foundation: support research in (1) engineering and atmospheric sciences on the behavior of windstorms and their impact on buildings, structures, and lifelines, and (2) economic and social factors influencing windstorm risk reduction measures.[16]

[12]42 U.S.C. § 15703(b)(1). The National Windstorm Impact Reduction Act of 2004 established the program, which seeks to achieve major measurable reductions in losses of life and property from windstorms. Pub. L. No. 108-360, tit. II, 118 Stat. 1668, 1675. This statute was amended by the National Windstorm Impact Reduction Act Reauthorization of 2015. Pub. L. No. 114-52, 129 Stat. 496.

[13]42 U.S.C. § 15703(b)(2).

[14]Id. § 15703(b)(5).

[15]Id. § 15703(b)(4).

[16]Id. § 15703(b)(3).

FEMA Assistance for Tornadoes

FEMA assists tribal, state, and local governments in addressing tornado threats as the lead federal agency for disaster mitigation, response, and recovery. While state and local entities have the primary responsibility for managing tornado disasters, these entities can seek FEMA assistance if a tornado exceeds, or threatens to exceed, their ability to effectively respond.[17] Additionally, FEMA may provide technical assistance, training, and technological support to eligible tribal, state, and local governments. FEMA provides assistance for tornadoes through two types of declarations: major disaster declarations and emergency declarations (see fig. 3).

Figure 3: Disaster Declaration Types

	Major disaster	Emergency
Purpose	Authorize emergency and permanent work, direct federal assistance, assistance to individuals, and/or hazard mitigation assistance	Authorize emergency assistance to save lives and protect property, including direct federal assistance, and assistance to individuals[a]
Who can request	State, territorial, and tribal governments	State, territorial, and tribal governments
Who approves request	U.S. President, via Federal Emergency Management Agency (FEMA)	U.S. President, via FEMA
FEMA assistance programs available	Public Assistance emergency and permanent work Individual Assistance Hazard Mitigation Grant Program	Public Assistance emergency work Individual Assistance-Individuals and Households Program and Crisis Counseling

Source: GAO analysis of Congressional Research Service and FEMA documentation, and federal law; GAO icons; Gstudio/stock.adobe.com (tornado graphic). | GAO-25-107384

[17]See 42 U.S.C. §§ 5170, 5191.

[a]While emergency declarations can authorize some Individual Assistance programs, it is rare. FEMA's Individual Assistance consists of multiple component programs, including the Individuals and Households Program, which provides assistance to eligible uninsured or underinsured individuals and households with necessary expenses and serious needs due to the disaster.

Major disaster declarations. A state or tribal government can request that the President declare a major disaster when a tornado-related disaster is of such severity and magnitude that an effective response is beyond tribal, state, and/or local capabilities and federal assistance is therefore necessary.[18] A major disaster declaration may provide a wide range of federal support through three key grant programs—Public Assistance, Individual Assistance, and Hazard Mitigation Grant Program. Table 1 describes the types of assistance available under these programs.

Table 1: Federal Emergency Management Agency (FEMA) Assistance Available under Major Disaster Declarations

FEMA Program	Who may apply directly	Assistance provided
Public Assistance	Eligible state, local, territorial, and tribal governments, and certain nonprofit organizations	• Emergency work, such as debris removal and emergency protective measures. • Permanent work, such as repairing or replacing roads and bridges, water control facilities, buildings and equipment, utilities, and parks or other recreational facilities.
Individual Assistance	Eligible disaster survivors and households	• Housing assistance, such as rental assistance and/or home rebuilding assistance. • Other needs assistance, such as funeral expenses or medical costs. • Transitional sheltering assistance for temporary sheltering via hotels. • Disaster legal services, unemployment assistance, case management, and crisis counseling services.

[18]A major disaster is any natural catastrophe or, regardless of cause, any fire, flood, or explosion, in any part of the U.S., which the President determines causes damage of sufficient severity and magnitude to warrant major disaster assistance to supplement the efforts and available resources of states, local governments, and disaster relief organizations in alleviating damage, loss, hardship, or suffering. See 42 U.S.C. § 5122(2). Federal agencies can become involved in responding to a disaster when effective response and recovery are beyond the capabilities of the state and affected local governments and federal assistance is necessary. In such cases, the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), permits the President to declare a major disaster in response to a request by the governor of a state or territory or by the chief executive of a tribal government. 42 U.S.C. § 5170.

FEMA Program	Who may apply directly	Assistance provided
Hazard Mitigation Grant Program	State, territorial, and tribal governments[a]	• Mitigation projects designed to reduce risk and the potential impacts of future disasters. • Examples of possible project types include property acquisition, flood risk reduction, safe rooms, sirens, retrofits, secondary power sources (e.g., generators), and warning systems.

Source: GAO summary of FEMA documentation and federal law. | GAO-25-107384

Note: A state, territorial, or tribal government can request that the President declare a major disaster when a tornado-related disaster is of such severity and magnitude that an effective response is beyond state, local, and/or tribal capabilities and federal assistance is therefore necessary. Not all major disaster declarations authorize all three of these assistance programs.

[a]A governor, tribal chief executive, or equivalent, may request that Hazard Mitigation Grant Program assistance be available throughout the state, local, territorial, or tribal area or only in specific jurisdictions. Local governments can apply for Hazard Mitigation Grant Program assistance as sub-applicants. Depending on the declaration, jurisdictions not affected directly by the disaster may qualify for assistance.

FEMA can also provide direct federal assistance under major disaster and emergency declarations. For example, FEMA can mobilize mass care resources, including providing meals and water. In some cases where a declaration authorizes Individual Assistance, FEMA may provide direct temporary housing, such as manufactured housing units. FEMA can also "mission assign" tasks to other federal agencies, such as debris removal, hazardous waste disposal, mortuary and forensic services, and search and rescue.

Emergency declarations. A state, tribal, or territorial government may request an emergency declaration, which is issued by the President. Such a declaration makes limited federal financial and direct assistance available, such as for emergency response work under Public Assistance.[19] In some cases, emergency declarations may authorize some Individual Assistance programs for survivors.

In addition to efforts to respond to and recover from disasters, including tornadoes, FEMA provides assistance in building resilience to future disasters through its Hazard Mitigation Assistance programs. For example, from 2020 through 2023, FEMA operated the Building Resilient Infrastructure and Communities (BRIC) program, which provided pre-disaster mitigation assistance. However, in April 2025, FEMA announced

[19]Per statute, total assistance under a single emergency declaration may not exceed $5 million unless continued emergency assistance is immediately required, there is a continued and immediate risk to lives, property, public health, or safety; and necessary assistance will not otherwise be provided on a timely basis. 42 U.S.C. § 5193.

that it was ending this program.[20] Further, Pre-Disaster Mitigation and Pre-Disaster Mitigation Congressionally Directed Spending provide pre-disaster mitigation assistance,[21] and the Hazard Mitigation Grant Program, discussed above, provides post-disaster mitigation assistance.[22]

Agencies Help Promote Tornado Resilience but Barriers Exist that Limit Communities' Access

FEMA Obligated $486 Million in Grants to Help Communities Mitigate the Effects of Tornadoes, but Communities Reported Challenges Accessing Resources

FEMA Tornado Mitigation Grants Focused on Safe Rooms and Sirens

FEMA obligated $486 million from fiscal years 2014 through 2024 to help communities mitigate the effects of tornadoes. Ninety six percent of those

[20]In August 2025, FEMA officials told us that the agency continues to evaluate whether to end or revise the BRIC program. As of August 2025, we have an ongoing review of the BRIC program, as well as a review of the application of the Impoundment Control Act of 1974, 2 U.S.C. §§ 681–688, to the BRIC program.

[21]Pre-Disaster Mitigation was a competitive grant program through the fiscal year 2019 grant cycle. It was considered to have been replaced by the BRIC program starting in the fiscal year 2020 cycle, but starting in fiscal year 2022, it awarded grants to recipients enumerated in the joint explanatory statements accompanying the relevant appropriations acts. Since then, it has been called Pre-Disaster Mitigation Congressionally Directed Spending.

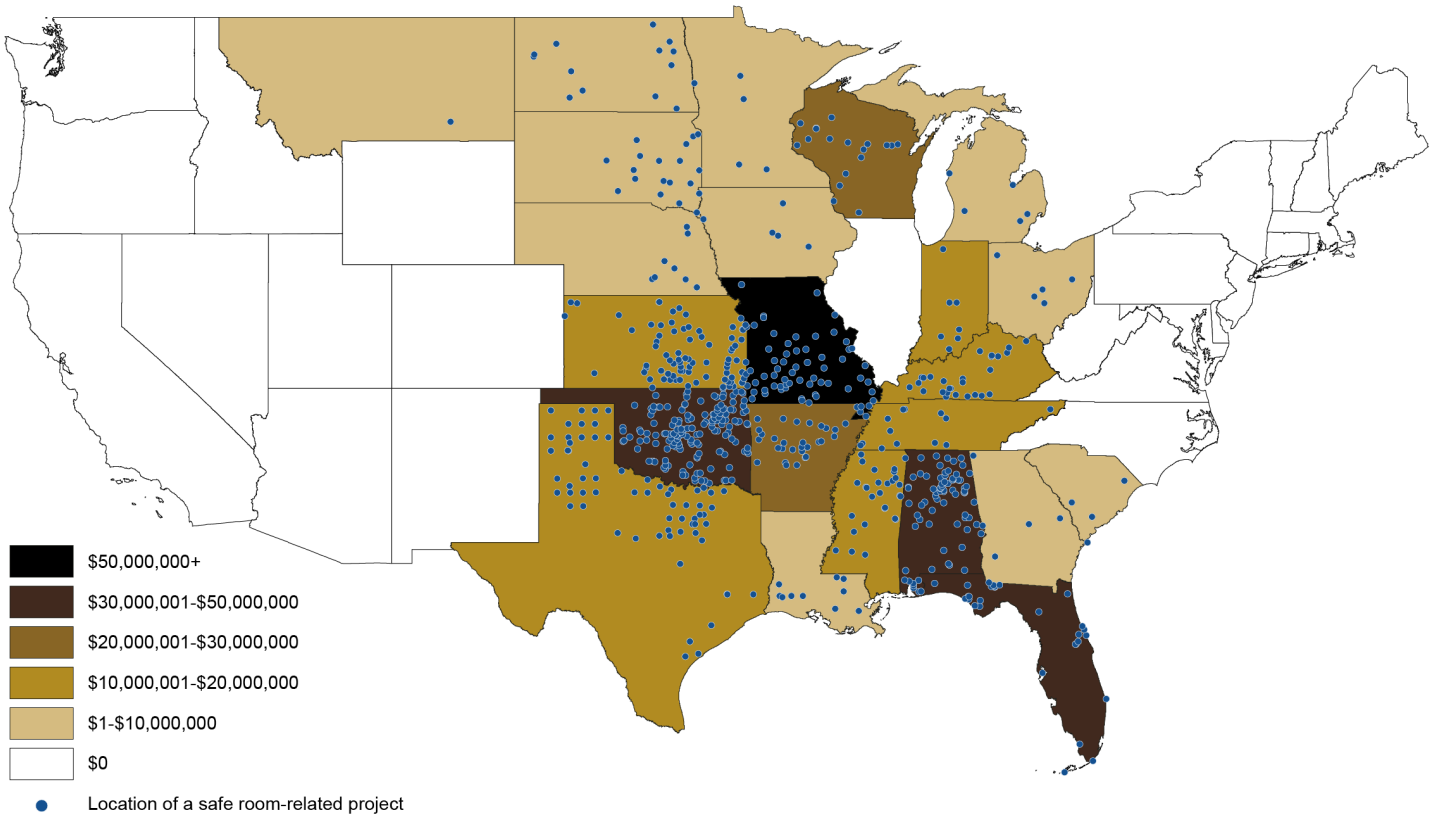
[22]See 42 U.S.C. § 5170c.

obligations related to safe room or warning siren projects.[23] This includes about $436 million for 806 projects related to safe rooms (see fig. 4), and $29 million for 478 projects related to sirens (see fig. 6). FEMA also obligated about $20 million for 123 other tornado-related mitigation projects during that span.[24] Those projects were primarily for tornado mitigation planning, but also included projects for utility and infrastructure protection and supporting building codes, among other areas.

[23]A safe room is an interior room, a space within a building, or an entirely separate building, designed and constructed to provide near-absolute life-safety protection for its occupants from extreme-wind events such as tornadoes or hurricanes. FEMA-funded safe room projects include community safe rooms and state or locally operated residential safe room programs. Local governments use sirens to alert residents that are outdoors in the event of a tornado warning, severe weather, or other emergency threat.

[24]Across a range of hazard mitigation assistance grant programs, FEMA contributes at most 75 to 90 percent of the costs of each project, with tribal, state, or local governments providing the remaining cost share. Safe room and siren project funding obligations include those for the following FEMA grant programs: BRIC, Hazard Mitigation Grant Program, Pre-Disaster Mitigation program, and the Pre-Disaster Mitigation Congressionally Directed Spending. Obligations for other tornado-related projects include those for BRIC and Hazard Mitigation Grant Program. For more information, see appendix II.

Figure 4: Federal Emergency Management Agency (FEMA) Funding Obligated for Safe Room Projects, fiscal years 2014-2024



Source: GAO analysis of FEMA data, U.S. Census Bureau (map). | GAO-25-107384

Note: Safe room project obligations include those for the following FEMA grant programs: Building Resilient Infrastructure and Communities, Hazard Mitigation Grant Program, Pre-Disaster Mitigation program, and the Pre-Disaster Mitigation Congressionally Directed Spending. Safe room projects include any projects where a safe room was a component, or that supplemented or supported the functioning of a safe room. Data as of November 2024.

Safe Rooms in Joplin, Missouri

Before the 2011 catastrophic tornado the city of Joplin did not have any public tornado shelters. The disaster killed 161 people; 135 of the deaths were caused by building and structural failures. The tornado also collapsed or severely damaged half of the city's 20 schools. When it rebuilt, the city included safe rooms in new schools and added safe rooms to schools that were not damaged. It designed the safe rooms not only for the daytime population of the school, but also for everyone within a 5-minute travel distance. The shelters are open to the public during the school day and on nights and weekends upon activation of a tornado warning.

Tornado damage to Joplin High School in May 2011.

Source: National Institute of Standards and Technology and Joplin Schools. | GAO-25-107384

Safe rooms. A safe room provides near-absolute life-safety protection for its occupants during extreme-wind events like tornadoes. All five states, both Tribes, and five of the seven counties we interviewed identified safe rooms as being among their top tornado mitigation priorities. Officials from one of the two counties that did not prioritize safe rooms said they live in an area where most residents have basements to shelter sufficiently from tornadoes. Officials from the other county said tornadoes are not common in their area and therefore the county does not have any planned tornado mitigation measures.

Officials we spoke with highlighted the importance of safe rooms. Alabama state emergency management officials said that community safe rooms are needed because much of the housing is older and vulnerable to tornadoes. For example, the officials identified mobile home parks as an area of need for community safe rooms. Further, FEMA field officials in Mississippi told us that community safe rooms are a priority for emergency management officials in the state, noting that they can help protect renters who are not eligible for residential safe room grants. For example, they said that in Rolling Fork, Mississippi, which was devastated by a tornado in March 2023, renters make up over two thirds of the population. Figure 5 shows two examples of safe rooms: a large community safe room and a small in-ground residential safe room on a homeowner's property.

Figure 5: Examples of Safe Rooms

Community safe room in Louisville, Mississippi

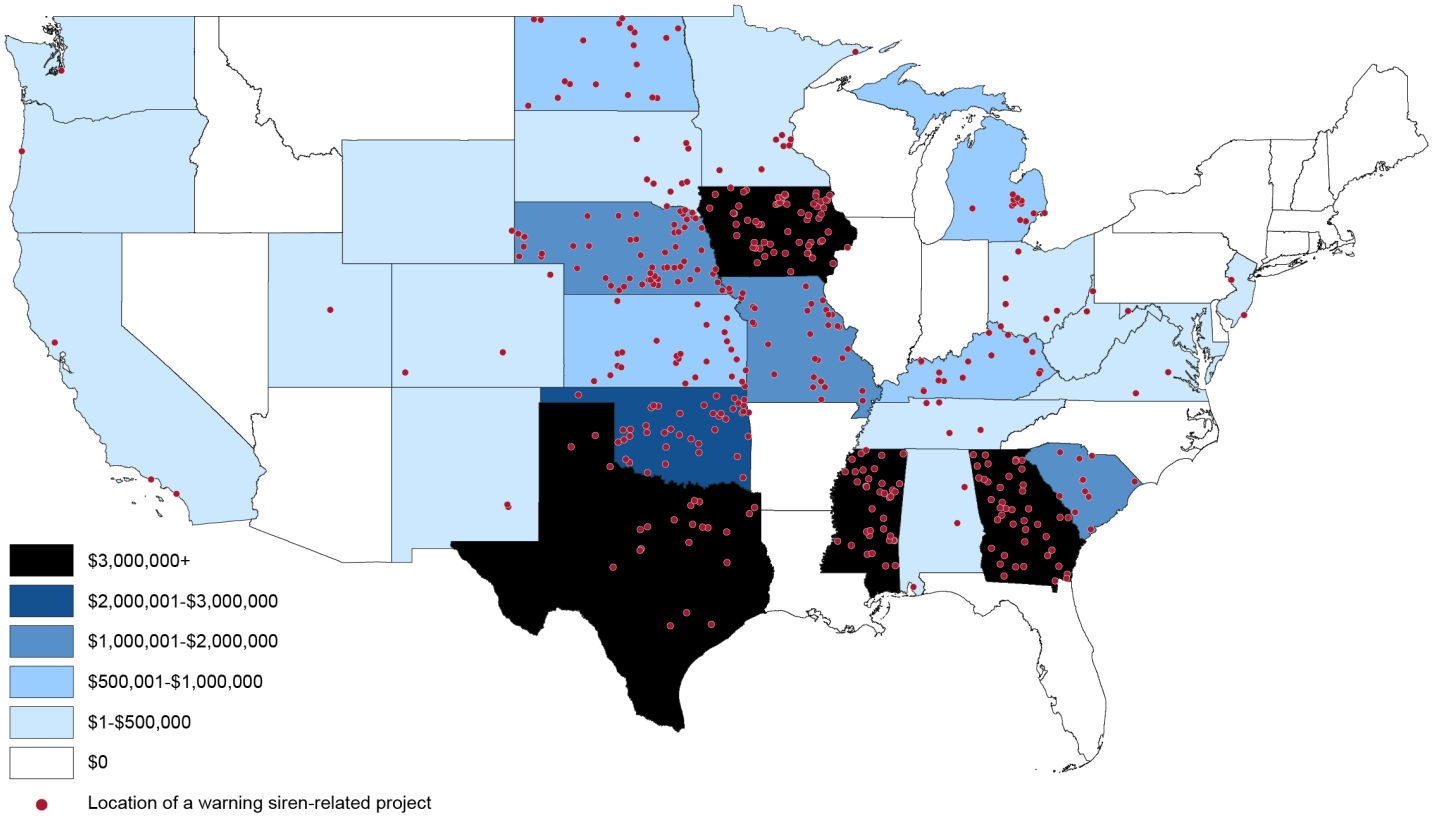
Residential safe room in Sulphur, Oklahoma

Source: Photo by South Industries from Monolithic Commons via Monolithic Dome Institute (left photo); GAO (right photo). | GAO-25-107384

Notes: A safe room is an interior room, a space within a building, or an entirely separate building such as an in-ground structure in the photo on the right. Safe rooms provide near-absolute life-safety protection for its occupants during extreme-wind events like tornadoes. Safe rooms meet International Code Council (ICC) 500 criteria and the more stringent Federal Emergency Management Agency P-361 criteria. A storm shelter provides life-safety protection from extreme-wind events and meets ICC-500 criteria. All safe rooms are storm shelters, but not all storm shelters are safe rooms. For community safe room photo use license see www.creativecommons.org/licenses/by-sa/4.0.

Warning sirens. Local officials can activate outdoor warning sirens for severe weather, including tornado warnings, or other emergencies. All five states, both Tribes, and six of the seven counties we interviewed identified warning sirens as also being among their top tornado mitigation priorities. For example, Kansas state officials said that sirens are critical in areas with limited internet connectivity because they provide a reliable method for alerting the public of a tornado warning. Ohio state officials said they have prioritized installing sirens at sporting events and parks where people will be outside when tornadoes hit, while Iowa officials said they have prioritized installing single sirens in small towns.

Figure 6: Federal Emergency Management Agency (FEMA) Funding Obligated for Outdoor Warning Siren Projects, fiscal years 2014-2024



Source: GAO analysis of FEMA data, U.S. Census Bureau (map). | GAO-25-107384

Note: Siren project obligations include those for the following FEMA grant programs: Building Resilient Infrastructure and Communities, Hazard Mitigation Grant Program, Pre-Disaster Mitigation program, and the Pre-Disaster Mitigation Congressionally Directed Spending. Siren projects include any projects where a siren was a component, or that supplemented or supported the functioning of a siren system. Data as of November 2024.

Some Communities Reported Challenges Accessing FEMA Tornado Mitigation Funding

Benefit-Cost Analysis

FEMA Hazard Mitigation Assistance programs require that projects be cost-effective.[25] To show cost-effectiveness, FEMA's benefit-cost analysis

[25]See 42 U.S.C. §§ 5133(f)(1), 5170c(a); 44 C.F.R. § 206.226(e).

is a method used to calculate the future risk reduction benefits of hazard mitigation projects and compare those benefits to the project's costs.

Officials in one state told us that tornadoes tend to hit places with fewer resources that struggle to recover. In addition, rural communities struggle to compete against larger urban areas for tornado mitigation assistance, according to officials in one county we spoke with. For example, they said rural areas are not populated enough to demonstrate cost effectiveness in FEMA's benefit-cost analysis requirement, or to be successful in FEMA's competitive mitigation grant programs. We have previously reported that communities with smaller populations often cannot reach FEMA's required cost-effectiveness thresholds, and steps FEMA has taken to address these challenges.[26] For example, in 2022 FEMA lowered the threshold for projects under its Building Resilient Infrastructure and Communities (BRIC) program to be considered cost-effective if the project benefitted certain communities, including certain rural communities.[27]

Officials from two state emergency management offices told us that calculating a benefit-cost analysis for siren systems is extremely difficult, which FEMA officials acknowledged. Since some projects are inherently difficult to evaluate using a benefit-cost analysis, including warning systems, FEMA allows Hazard Mitigation Grant Program applicants to forgo a formal analysis under certain conditions. For example, through FEMA's Five Percent Initiative, applicants may provide a narrative description instead of a formal benefit-cost analysis for projects representing up to 5 percent of their award.

[26]GAO, *Water Infrastructure Resilience: Agencies Could Better Assess Efforts to Assist Communities Vulnerable to Natural Disasters,* GAO-25-107013 (Washington, D.C.: Aug. 11, 2025).

[27]For example, this lower threshold applied to Economically Disadvantaged Rural Communities. These communities are defined as communities of 3,000 or fewer people in which residents have an average per capita annual income no more than 80 percent of the national per capita income. 42 U.S.C. § 5133(a). In January 2025, FEMA updated its Public Assistance policy to reflect that safe rooms are a cost-effective mitigation strategy wherever tornadoes occur. Specifically, the guidance stated that FEMA considers safe rooms to be cost-effective Public Assistance mitigation if the project does not exceed 100 percent of the damaged facility's repair cost and is part of the footprint of the facility being repaired due to damage caused by the declared incident. FEMA stated that the agency updated this policy with the aim of preventing future loss of life and ensuring that more funding is available to respond to increasing high wind events. See FEMA, *Public Assistance Program and Policy Guide*, Version 5, FP 104-009-2 (Jan. 6, 2025). In April 2025, FEMA announced that it was ending the BRIC program.

The Five Percent Initiative opens an additional avenue for projects where the benefits are hard to quantify, like sirens. According to officials from one Tribe, five states, and four counties, they have difficulty accessing sufficient mitigation assistance to meet their siren alerting needs, so this additional flexibility is beneficial. However, officials from two states said that even when using all their eligible Five Percent Initiative assistance on siren projects, they still fall well short of meeting their statewide needs. For example, officials from one state said that assistance under the Initiative allowed it to fund only two of its planned 43 siren projects before exhausting the allowable Five Percent funding.

Starting in April 2024, FEMA took additional steps to streamline the benefit-cost analysis process, which could make it easier for grantees to fund siren projects. For example, FEMA began allowing applicants across its mitigation grant programs to submit a narrative instead of a formal benefit-cost analysis for projects costing less than $1 million. The cost of installing a siren system can vary and can cost from $30,000 to $50,000 per siren. In addition, for certain applicants FEMA offered support in developing a benefit-cost analysis, and for those applicants did not require the analysis or narrative at the time of application regardless of the cost of the project. This included for applications from federally recognized Tribes and certain rural or underserved communities.[28]

Finally, FEMA Hazard Mitigation officials said combining project types can provide access to more mitigation funding for sirens beyond the Five Percent Initiative while ensuring the project is cost effective. For example, they said combining siren projects with a safe room project could address benefit-cost requirements because safe room projects have very high

[28]Specifically, for all hazard mitigation assistance programs, eligibility for this assistance applied to projects that were submitted by tribal governments or that were within, or primarily benefit, a Community Disaster Resilience Zone, which are census tracts that are most in need and at risk for the effects of natural hazards. Pub. L. No. 117-255, 136 Stat. 2363 (2022) (codified at 42 U.S.C. § 5136). For BRIC and congressionally directed Pre-Disaster Mitigation, eligibility for this assistance also applied to projects submitted by an Economically Disadvantaged Rural Community. As noted above, in April 2025, FEMA announced that it was ending the BRIC program. For the Hazard Mitigation Grant Program, eligibility for this assistance also applied to projects submitted by a small and impoverished community, which is a community of 3,000 or fewer individuals that is identified by the state as a rural community, and is not a remote area within the corporate boundaries of a larger city; is economically disadvantaged, by having an average per capita annual income of residents not exceeding 80 percent of national, per capita income; the local unemployment rate exceeds by one percentage point or more the most recently reported, average yearly national unemployment rate; and any other factors identified in the State Plan in which the community is located. See 44 C.F.R. § 201.2.

benefits and should result in a grant application with sufficient benefits for funding.

Cost Share

FEMA's Hazard Mitigation Assistance programs require grant recipients to contribute a non-federal cost share, which is generally 25 percent of a project's cost.[29] Officials from two states, one Tribe, and three counties identified concerns with rural or under resourced communities being able to afford the non-federal cost share for mitigation projects. These concerns included that many lower resourced communities cannot afford to provide funding up front or take out loans for mitigation projects. They also said that even well-resourced communities lack the funds for large mitigation projects, even if FEMA will later reimburse 75 percent of the costs. We have previously reported that cost share requirements for FEMA programs can pose a challenge for recipients and potential recipients.[30]

From fiscal years 2020 through 2023, FEMA's BRIC program addressed this barrier through a reduced non-federal cost share requirement of 10 percent for Economically Disadvantaged Rural Communities.[31] However, as noted above, in April 2025, FEMA announced it was ending the BRIC program. As a result, this resource may no longer be available to communities.

Lower-resourced individuals have also struggled to access FEMA mitigation resources. According to FEMA officials, safe rooms in homes, depending on the community, are the best life saving measure for tornadoes, but they can be costly. FEMA officials said that its Hazard Mitigation Grant Program post-disaster grants have funded the vast majority of residential safe room programs and projects. FEMA has helped fund state safe room programs, including in Kansas, Mississippi, Ohio, Oklahoma, and Wisconsin. While these programs differ in how they operate and how much funding they provide to applicants, typically

[29]42 U.S.C. §§ 5133(h), 5170c(e).

[30]See GAO, *Disaster Recovery: Actions Needed to Improve the Federal Approach*, GAO-23-104956 (Washington, D.C.: Nov. 15, 2022) and *Flood Mitigation: Actions Needed to Improve the Use of FEMA Property Acquisitions*, GAO-22-106037 (Washington D.C.: Sept. 13, 2022).

[31]The Stafford Act provides that FEMA may contribute up to 90 percent of the total cost of a mitigation project under this program for Economically Disadvantaged Rural Communities. 42 U.S.C. § 5133(h)(2).

homeowners install a safe room and apply to the state for a maximum rebate of approximately $3,000-$3,500 that defrays some of the project's cost.[32]

However, while many homeowners express interest in FEMA-funded safe room programs, lower-income people have difficulty affording these programs according to FEMA, state, and county officials we spoke with. For example, in one state eligible homeowners can be reimbursed for up to 75 percent of the costs of installing a safe room after submitting the required paperwork, according to FEMA officials. However, they said many homeowners cannot afford to cover the upfront costs of the entire safe room, as required. These costs resulted in a quarter of participants withdrawing from the program. Despite some withdrawals, the officials said that states have found the rebate programs to be an efficient model for getting safe rooms into more communities, and states have flexibility when they implement their safe room programs.

Administrative Burden

Tribal, state, and county officials that we interviewed said obtaining FEMA tornado mitigation assistance is administratively burdensome. Specifically, while some jurisdictions said that FEMA grants are burdensome across its programs, as we describe below, officials from four states, one Tribe, and one county, as well as the tribal emergency management organization we spoke with, specifically identified mitigation grants that would address tornado risks as administratively burdensome.

One major challenge is the administrative costs and staff time needed to apply for and administer tornado mitigation grants, according to the jurisdictions we spoke with. For example, officials from one Tribe said that the grant applications are very technical and difficult to compile, and that they spent more on staff costs than they ultimately received from FEMA in the grant. This included FEMA asking for additional information every few weeks, they said. Further, officials from one state said these issues particularly strain rural communities and deter them from applying because they have limited staff to oversee the grant process, including specialists like attorneys and engineers. We have previously reported on

[32]For example, Mississippi launched its residential safe room program with a $2.5 million award from FEMA's Hazard Mitigation Grant Program. Through the program, applicants were eligible for a 75 percent reimbursement, up to $3,500, for the cost of installing a safe room on their property. Mississippi officials expected the program to fund about 600 safe rooms in eligible counties.

the longstanding issue of the challenges communities face using FEMA programs for hazard mitigation.[33]

FEMA is aware of the challenges with timeliness and administrative burden of its assistance programs. FEMA officials said they analyzed mitigation grant programs to identify and address timeliness concerns in summer 2024. In May 2025, FEMA officials described steps they have taken to improve timeliness. For example, they said FEMA is working with grantees before they receive funds to help ensure they are ready to begin contracting once they receive awards for management costs. However, they said limited capacity at the tribal and state level can still contribute to delays. The officials also said that FEMA hired additional mitigation staff to help improve grant timelines. Overall, agency efforts resulted in FEMA delivering about $2.6 billion in Hazard Mitigation Assistance grants in fiscal year 2024, a 43 percent increase over the previous year, according to FEMA officials.

FEMA Identified Tribal Emergency Management Capacity Challenges but Has Not Assessed Capacity or Needs

Communities with fewer resources may struggle to maintain emergency management staff to plan for a tornado. For example, officials with a tribal emergency management organization told us that Tribes with fewer resources are less able to access FEMA grants to prepare for tornadoes, including because of limited grant writing staff. Further, they said that even if such a Tribe obtained a grant to establish an emergency management program, if the Tribe did not receive a grant the next year its emergency management program would be eliminated.

In its August 2022 National Tribal Strategy, FEMA announced plans to initiate a study on tribal emergency management capacity and capabilities, which it did not complete.[34] FEMA has reported that many Tribes do not have dedicated emergency managers and turnover among tribal staff is common. However, the agency has limited information on

[33]GAO, *Disaster Resilience: FEMA Should Take Additional Steps to Streamline Hazard Mitigation Grants and Assess Program Effects*, GAO-21-140 (Washington, D.C.: Feb. 2, 2021) and *Wildfires: Additional Actions Needed to Address FEMA Assistance Challenges*, GAO-25-106862 (Washington, D.C.: Dec. 18, 2024). In February 2021, we recommended that FEMA take steps to reduce the complexity of its hazard mitigation grant programs. In response to this recommendation, FEMA reported taking actions to allow applicants to apply for funding more easily and reduce award time frames. As a result of these actions, we closed this recommendation as implemented.

[34]FEMA, *2022-2026 FEMA National Tribal Strategy* (Aug. 2022).

specific Tribes' emergency management staff and capacity, according to FEMA Tribal Affairs officials.

For example, FEMA has general information on the number of Tribes in each region that employ a staff member who performs an emergency management function in some capacity. However, FEMA generally does not have information on each Tribe's staffing capacity, such as whether it has a dedicated emergency manager or a staff member with emergency management among other roles.

In March 2025, FEMA officials stated that a thorough assessment of tribal emergency management capacity and capabilities is long overdue and is necessary for FEMA to better tailor technical assistance, training, program delivery, and consistent funding. They also said such a study would help increase flexibilities and reduce administrative burdens on Tribes.

FEMA officials said in March 2025 that an assessment is underway to better understand tribal emergency management needs. Specifically, it seeks to better understand emergency management organizational structures, staffing, funding, and capacity across tribal, state, local, and territorial governments. The Argonne National Laboratory is conducting the study in partnership with FEMA and several national emergency management associations.[35] The study's survey of tribal emergency management staff launched in January 2025 with plans to survey Tribal Nations through fall 2025, before producing a report by the end of calendar year 2025.

FEMA has taken positive steps toward better understanding Tribes' emergency management capacity and needs by partnering to launch the study, as well as by holding tribal consultation feedback sessions on its National Tribal Strategy in 2023 and 2024. However, additional steps are needed, such as completing the study, which would give FEMA a clearer, more comprehensive view of Tribes' needs for emergency management capacity-building. Further, Office of Management and Budget guidance states that agencies should develop a detailed plan describing an evaluation's proposed design, methods, and reporting, along with

[35]Argonne plans to release the findings in a public report based on the study, which is titled the "Emergency Management Organizational Structures, Staffing, and Capacity Study." Study partner organizations include FEMA, the International Association of Emergency Managers, the National Emergency Management Association, and Big City Emergency Managers.

timelines for implementation.[36] After completing the study, outlining steps it plans to take, with timeframes, to address the report's findings would better position FEMA to orient future planning efforts toward Tribes' unique emergency management needs.

State Barriers Limit Tribes' Access to Emergency Management Funding

FEMA has set goals for bolstering the nation's emergency management workforce and expanding access to its grant programs that build Tribes' capacity. Specifically, FEMA's Tribal Policy includes a commitment to ensure FEMA works with Tribal Nations to build, sustain, and improve their capacity to prevent, protect against, mitigate, respond to, and recover from all hazards.[37] In addition, the Policy states that tribal governments have a unique and direct relationship with the federal government, and tribal governments are not political subdivisions of states but are recognized by the U.S. as distinct sovereign entities. Finally, FEMA's National Tribal Strategy set a goal to evaluate and identify methodologies to increase engagement with Tribal Nations in a manner that acknowledges tribal sovereignty and that ensures Tribal Nations have direct federal access to resources in preparing for disasters.[38]

FEMA's Emergency Management Performance Grant program is the federal government's primary source of support for developing and maintaining emergency management expertise. It pays for salaries and provides resources to assist tribal, state, local, and territorial governments in preparing for all hazards, including strengthening communities' emergency management governance structure.

Five states and three counties that we interviewed said the program is critical for their tornado preparedness. For example, emergency management officials in one state told us that the grant is critical because it provides the salaries needed to hire professional county emergency managers across the state with the expertise needed in a do-everything role.

Alternatively, when communities cannot access funding to build emergency management capacity, it could mean not being able to plan

[36]Office of Management and Budget, *Phase 4 Implementation of the Foundations for Evidence-Based Policymaking Act of 2018: Program Evaluation Standards and Practices Memorandum M-20-12* (Washington, D.C.: Mar. 10, 2020).

[37]FEMA, *FEMA Tribal Policy (Rev. 2), FEMA Policy #305-111-1 (Dec. 2020)*.

[38]FEMA, *2022-2026 FEMA National Tribal Strategy*.

and prepare for a disaster, such as a tornado. In addition, without the resources to offer sufficient salaries, underserved areas, including some rural and tribal areas, risk losing skilled staff to larger, better paying areas, according to officials in one county that we spoke with.

Tribal Nations without dedicated emergency management staff face heightened vulnerability to disasters, as there is less likely to be a coordinated system in place to prepare for, respond to, or recover from disasters. For example, the absence of trained staff can result in slower and less effective response efforts, leading to greater loss of life, property, and cultural heritage.

Per statute, only states and territories are eligible to receive Emergency Management Performance Grant awards directly from FEMA; Tribes are not eligible to apply directly to FEMA.[39] FEMA awards grants to states and territories, which may then distribute the grants to subrecipients. According to FEMA officials, after states receive the awards, they determine whether, and under what conditions, to provide part of that grant award to Tribes within their geographical boundaries. States have discretion for how they choose to distribute awards to local jurisdictions and Tribes.

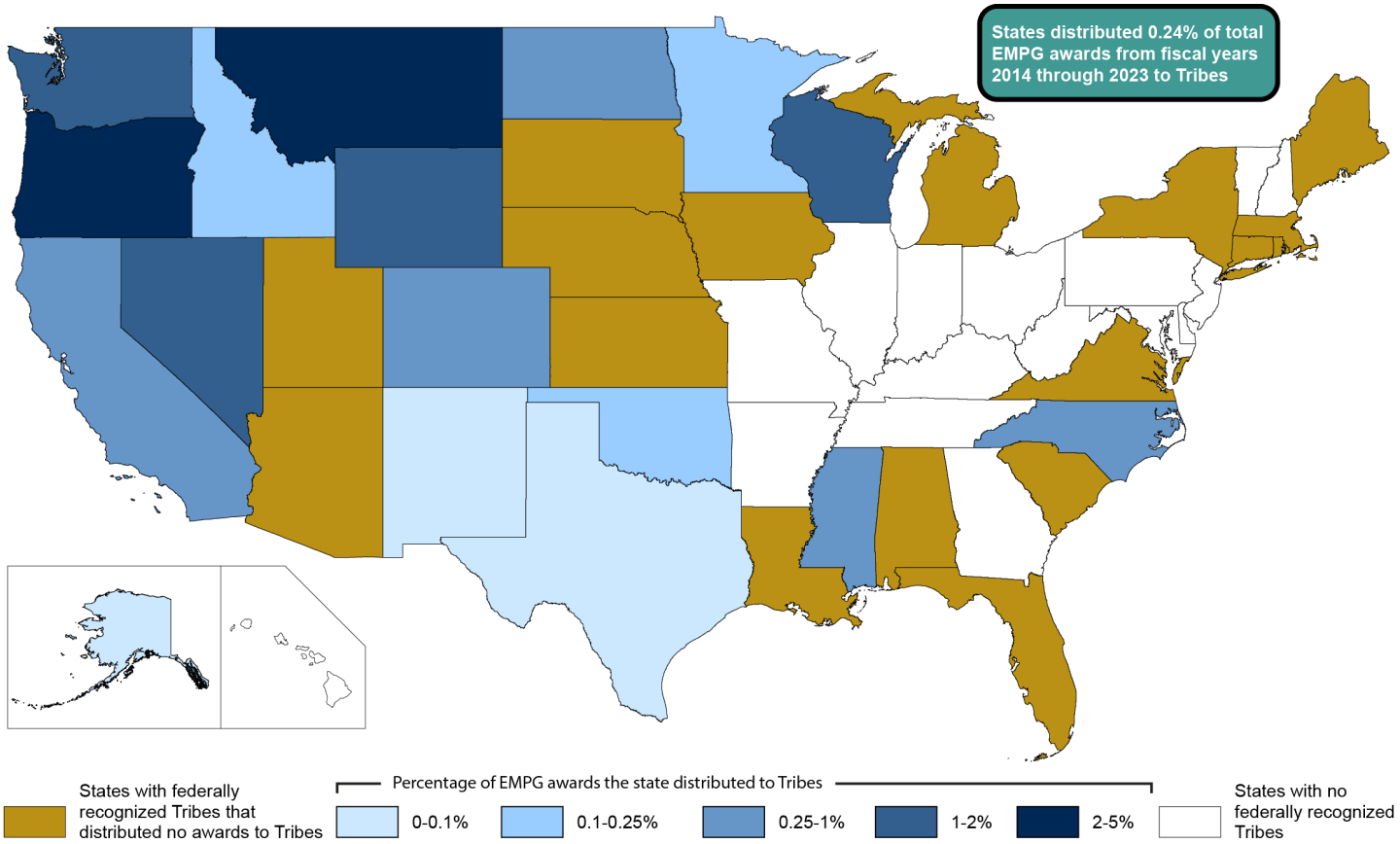
Over the past decade, the proportion of overall Emergency Management Performance Grant awards the states distributed to Tribes has remained low. In May 2018 we found that Tribes received relatively low amounts of the program's awards through the states.[40] Specifically, we reported that from 2013 through 2016, states distributed about $3.3 million to Tribes of the $1.4 billion (0.24 percent) in Emergency Management Performance Grant awards they received. This trend continued in the ensuing years; from fiscal years 2014 through 2023 states also distributed 0.24 percent of awards to Tribes, or $7.4 million out of $3.1 billion.

Some states did not distribute any Emergency Management Performance Grant awards to Tribes from fiscal years 2014 through 2023. For example, 17 states distributed awards to Tribes, while 17 other states have at least one federally recognized Tribe within their borders but did not distribute any awards to Tribes, as shown in figure 7.

[39]6 U.S.C. § 762.

[40]GAO, *Emergency Management: Implementation of the Major Disaster Declaration Process for Federally Recognized Tribes*, GAO-18-443 (Washington, D.C.: May 23, 2018).

Figure 7: Percentage of Federal Emergency Management Agency (FEMA) Emergency Management Performance Grant (EMPG) Awards that States Distributed to Tribes, fiscal years 2014-2023



Source: GAO analysis of FEMA data, U.S. Census Bureau (map). | GAO-25-107384

Note: FEMA EMPG data is based on reporting by the state agency administering the grant and grantees receiving awards from the state, such as a local or tribal government.

Some states have created barriers or conditions on Tribes' access to Emergency Management Performance Grant awards, which we have previously reported.[41] For example, one state requires Tribes to waive their legal immunity and agree to follow state laws as a condition of receiving a grant. In addition, FEMA regional officials told us that multiple Tribes in their region reported at least one state conditioning Emergency Management Performance Grant awards on Tribes opening their financial records to the state. Further, some states have an operating policy of not distributing any of the program's awards to Tribes, according to FEMA

[41]GAO-18-443.

officials. Tribal officials told us that barriers imposed by states have led to some Tribes choosing not to apply for the program's grants.

State-imposed barriers impinge on tribal sovereignty, according to tribal officials we spoke with. They said that as sovereign nations, Tribes should not have to abide by additional rules from states to access grants and requiring that Tribes access funding through the states does not fully recognize tribal sovereignty. Through consultations, tribal leaders have told FEMA that Tribal Nations should be able to apply for grants without going through a state since states do not have treaty and trust responsibilities to Tribal Nations. They said that FEMA, as an arm of the federal government, has that responsibility.

Other FEMA programs allow the agency to award grants directly to Tribes. This previously included BRIC, which had tribal set-aside funds, and the Tribal Homeland Security Grant Program, which is a tribal-specific program.[42] Nonetheless, we have previously reported that Tribes face barriers to accessing federal pre-disaster assistance that could help them build capacity, and face challenges accessing other FEMA mitigation programs where states pass through federal grant awards.[43]

The National Congress of American Indians issued a resolution in 2022 recommending that Congress establish an Emergency Management Performance Grant tribal set-aside at FEMA because the states do not prioritize funding to Tribal Nations, and some states do not allow tribal governments to even apply for the program.

In April 2023, FEMA submitted a legislative proposal to Congress describing state barriers to Tribes accessing grants and outlining several possible legislative solutions. The proposal included options for creating a new program or amending an existing program to allow direct tribal access to emergency management grants.

[42]For fiscal year 2023, BRIC's tribal set-aside allowed Tribes to compete for a total of $50 million. Under the tribal set-aside, FEMA allowed up to $2 million per tribal applicant for capability and capacity building activities and up to $1 million for hazard mitigation planning activities. The Tribal Homeland Security Grant Program aims to help Tribes prevent, prepare for, protect against, and respond to acts of terrorism. Eligible tribal governments include those that are located in the continental U.S., operate a law enforcement or emergency response agency, and have not received funds from a state under a related program, as well as meeting one geographic criteria, such as being near an international border or prioritized critical infrastructure. See 6 U.S.C. § 601(4).

[43]GAO-18-443.

In our previous work we have found that certain program characteristics can create barriers to tribal participation in federal programs, such as complex application and reporting requirements and competitive grant programs. Also, agency actions to mitigate these barriers in federal programs could help improve Tribes' ability to access federal funding intended for them.

For example, we previously reported that a dedicated staff person from one Tribe we interviewed took 60 days to navigate a BRIC application and required parallel applications because FEMA's application system was designed for states.[44] We have also found that when Tribes compete with others for funding, they may receive a small portion of the total amount. Further, competition can inhibit access for smaller Tribes and those with limited resources because competitive grants can include significant administrative requirements that can be difficult to meet.[45] To address these barriers, some agencies have minimized administrative burdens by streamlining applications. This approach could also reduce burden on FEMA staff administering tribal grant programs.

Finally, we previously found that federal programs' cost-share requirements can be an obstacle for Tribes that do not have the resources to provide matching funds.[46] In addition, upfront costs and short spending time frames can be a barrier and lead to increased costs for Tribes. Taking these barriers into consideration when designing an emergency management capacity-building program could help ensure that tribal recipients can access and use funds as Congress intends.

Congress has not acted on FEMA's legislative proposal, as of August 2025. However, Congress taking steps to amend an existing program or create a new program that would provide emergency management grants directly to tribal governments would address state-imposed barriers and

[44]GAO, *Justice40: Additional Efforts Needed to Improve Tribal Applicants' Access to Federal Programs Under Environmental Justice Initiative*, GAO-24-106511 (Washington, D.C.: Apr. 10, 2024).

[45]GAO, *Alaska Native Issues: Federal Agencies Could Enhance Support for Native Village Efforts to Address Environmental Threats*, GAO-22-104241 (Washington, D.C.: May 18, 2022).

[46]The Emergency Management Performance Grant requires a non-federal cost share of 50 percent. 6 U.S.C. § 762(c). See *Tribal Energy: Federal Assistance to Support Microgrid Development*, GAO-24-106278 (Washington, D.C.: July 22, 2024).

increase tribal government access to grants for sustaining emergency management staff capacity.

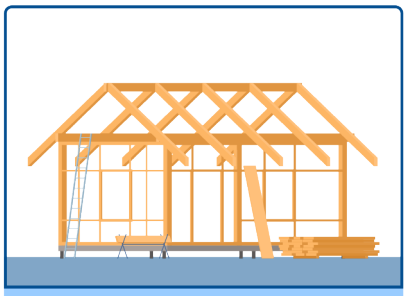
NIST and FEMA Have Promoted Building Codes for Tornado Resilience

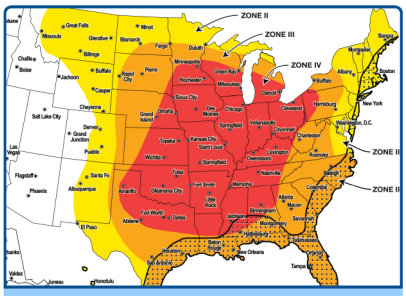
Of the 161 deaths in the 2011 Joplin, Missouri tornado disaster, 84 percent resulted from building and structural failures.[47] How many lives are lost, how long a recovery takes, and the cost of rebuilding often depends upon the structural integrity of the buildings struck by a tornado. The federal government has minimal direct control over building codes. Rather, tribal, state, and local governments adopt and enforce building codes, which define what can be built and how. Those governments typically base their building codes off a model building code, such as the International Building Code. They may strengthen or loosen parts of a model code to meet their needs, and then legally adopt and enforce a building code under their ordinances.[48] Federal agencies, such as NIST, NOAA, and FEMA help shape the development of model codes, as shown in figure 8.

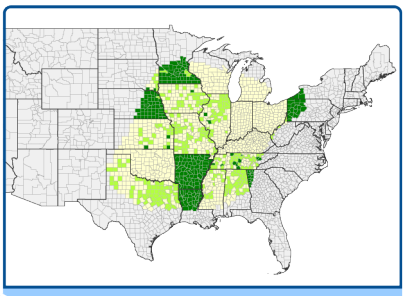
[47]NIST, *Technical Investigation of the May 22, 2011, Tornado in Joplin, MO* (Gaithersburg, MD: March 2014).

[48]Model codes aim to safeguard occupants from dangerous conditions by specifying the level of wind, rain, hail or other hazards that buildings should withstand. The International Code Council (ICC) develops the most commonly used model codes.

Figure 8: Tornado Building Code Development Process







	Building standards	Model codes	Building codes
What	Standards are the building blocks of model codes. They specify how to build, such as which materials and techniques to use, and level of resilience, like the wind speed buildings must be designed to withstand.	Governments often base their building codes off a model code, which they strengthen or loosen to meet their needs.	Building codes are laws that set minimum requirements for how buildings should be designed and constructed.
Who	Standards organizations, such as the American Society of Civil Engineers (ASCE), which develops standards related to structural design and infrastructure.	International Code Council (ICC) produces model codes based on existing building standards.	State/Local/Tribal Governments: Model codes do not become building codes until state, local, tribal, or territorial governments adopt and enforce them.
Federal role	National Institute of Standards and Technology (NIST) researches tornado behavior and impact on buildings, and building design for better resilience.	NIST proposes changes to model code based on research, and leads committees of experts that establish and update model codes.	FEMA incentivizes and tracks building code adoption; helps fund improved building code capacity; and ensures federally funded reconstruction adheres to current standards.
Tornado examples	Wind maps developed by NIST and the National Oceanic and Atmospheric Administration tell builders what wind speeds buildings in their region should be designed to withstand. **2008:** ICC-500 set design specifications for storm shelters to ensure they are strong enough to protect occupants. **2022:** ASCE 7-22 contained the first-ever rules for making critical and high-occupancy buildings resistant to tornadoes.	**2015:** Required storm shelters in certain buildings (like schools and emergency response facilities) in 23-state high-risk tornado region. **2024:** Required new public utilities, hospitals and fire stations, and schools in the high-risk region to be built to withstand EF-2 tornado wind speeds or lower, depending on factors like risk category, building type, and geographic location.[a]	24% of jurisdictions had building codes resistant to tornadoes, as of September 2024.

Source: GAO analysis of NIST and FEMA documents; igor/adobestock.com; U.S. Census Bureau (maps). | GAO-25-107384

[a]The 2024 model code applies to certain types of important community structures in Risk Categories 3 and 4. Risk Category 3 buildings include schools and nursing homes, as well as high occupancy buildings like theaters. Risk Category 4 buildings include essential facilities such as fire and police stations, hospitals, and Emergency Medical Services facilities.

NIST Led the Development of the First Tornado-Resilient Building Standards

Federal Role in Tornado Building Standards

NIST conducted research on how buildings must be designed to withstand tornadoes, and helped codify those standards through leadership in international standards organizations. While a building code creates a requirement, such as installing safe rooms in schools, a standard specifies how to implement the requirement, such as how to build the safe room, the materials to build it with, and the wind speeds it must be designed to withstand.[49]

Federal Roles in Building Codes

The federal government has limited control over building codes, which tribal, state, and local governments adopt and enforce. However, federal agencies, including the Federal Emergency Management Administration (FEMA) and National Institute of Standards and Technology (NIST), collaborate to promote tornado-resistant building codes.

FEMA promotes the adoption and enforcement of hazard-resistant building codes; provides funding for states and localities to adopt and enforce them; and ensures that federally funded reconstruction efforts adhere to current standards.

NIST conducts research on how tornadoes affect the built environment; incorporates it into tornado-resilient design and construction techniques; and works with standards organizations to incorporate those techniques into building codes and standards that state and local governments can adopt.

Source: GAO analysis of FEMA and NIST documents. | GAO-25-107384

NIST conducted research to better understand the unique forces tornadoes exert on buildings so design professionals can create buildings that are more resilient to those forces. For example, NIST has partnered with NOAA and FEMA in post-tornado field research to better understand the impact of tornadoes on the built environment. This includes studying emergency operations, how unique tornadic winds affect buildings and designated safe areas, and life safety outcomes. NIST's findings led to design guidelines and products such as tornado hazard maps that identify the wind speeds buildings in different regions should be designed to withstand.

In addition, based on its research NIST helped enact building standards through its leadership in international organizations. Specifically, NIST leveraged its research to propose changes to organizations that codify building standards, such as the International Code Council (ICC).[50] NIST officials chaired committees of experts that enacted and continue to update standards for tornado-resistant design. Further, engineers and architects use the NIST-developed methodologies in building codes and standards to compute the forces exerted by the tornadic winds and design more resilient buildings.

[49]A building standard is a collection of the most up-to-date minimums for designing a safe structure put together by a committee of public and private sector experts. The American Society of Civil Engineers (ASCE) establishes and updates commonly used minimum design standards for hazards in the U.S. ICC model building codes reference many of the ASCE standards. The standard that deals with wind loads for buildings is called ASCE 7, and the most recent version, published in 2022, is ASCE 7-22.

[50]The International Code Council is an association that helps the building safety community and construction industry provide safe, sustainable, and affordable construction through the development of model codes and standards used in the design, construction, and compliance process.

First Model Codes for Tornado Resilience

Building codes in the U.S. have historically not included any tornado-resistant building design or construction requirements, resulting in an increase of property damage and loss of lives during tornado events, according to NIST. In 2008, the ICC established requirements that the building of storm shelters must meet certain standards.[51] However, this did not include any requirements to install safe rooms in any buildings or regions.

NIST led a decade-long effort along with partners in federal agencies, industry, associations, and academia that began with the Joplin tornado disaster in 2011 to codify building codes for improved tornado resilience. For example, based on its post-disaster field research after the spring 2011 tornadoes, FEMA made a recommendation that resulted in a 2015 ICC model code requirement for storm shelters. The code applies to a tornado-prone region in the central U.S. that includes parts of 23 states and requires jurisdictions that adopt it to install shelters in new buildings like schools and emergency response facilities.[52] NIST officials said that in the last 3 to 4 years more jurisdictions have adopted these shelter requirements, resulting in more storm shelters in public facilities.

While the 2015 model code included requirements for storm shelters, building code standards did not exist to make buildings more resilient to tornadoes. Before NIST's research, builders and engineers considered tornadoes to be too severe, unpredictable, and costly to incorporate into building design plans, according to the ICC. Based on NIST's research, in 2024 the ICC enacted a model code aimed to resist tornadoes with an intensity of EF-2 or lower, which represents 97 percent of the tornadoes that occur in the U.S. Under the model code, the wind speed a building

[51]The standard, known as ICC-500, provided minimum requirements for the design, construction, and installation of storm shelters constructed for protection from high winds associated with tornadoes and hurricanes. In 2010, FEMA required that all FEMA-funded safe room projects be in accordance with latest edition of ICC-500. Safe rooms are designed and constructed to provide near-absolute life-safety protection from extreme-wind events like tornadoes or hurricanes. Safe rooms meet ICC-500 criteria and the more stringent FEMA P-361 criteria. Alternatively, a storm shelter provides life-safety protection from extreme-wind events and only must meet the ICC-500 criteria. All safe rooms are storm shelters, but not all storm shelters are safe rooms.

[52]NIST developed a successful proposal for the 2018 International Existing Building Code requirements. The code expanded to also require storm shelters in new buildings on existing school campuses, in additions to existing school buildings, and for indoor assembly spaces associated on school campuses, like theaters and basketball arenas.

must be designed to resist depends on factors such as its risk category, building type, and geographic location.[53] The new code applies to certain new structures, including: (1) public utilities, (2) facilities that are considered essential during an emergency such as hospitals and fire stations, and (3) buildings that represent a substantial hazard to human life in the event of failure, like schools and nursing homes. To help implement the model code, NIST and FEMA developed a design guide to help structural engineers determine what tornado intensity they need to construct buildings to withstand in their region.[54]

FEMA Incentivizes and Tracks Adoption of Tornado-resistant Building Codes

FEMA Grant Example: Wind Mitigation Voucher Program

Choctaw Nation of Oklahoma received a FEMA grant to create a voucher program for its residents to make improvements in line with tornado-resilient building codes. Through the program, residents could apply for a voucher to fund home mitigation efforts, such as removing a tree that poses a debris risk during extreme winds, retrofitting a home with hurricane straps to secure the roof, or changing to a garage door to one with a higher wind rating.

Source: Choctaw Nation of Oklahoma. | GAO-25-107384

Building Code Incentives

Several FEMA programs provide or have provided financial and technical assistance to tribal, state, and local governments for building code adoption and enforcement. For example, for the first time in fiscal year 2023, FEMA created both the State and Territory Building Codes Plus-Up and the Tribal Building Codes Plus-Up within its BRIC program. These programs allotted up to an additional $2 million per state and territory, and up to $25 million total for federally recognized Tribes, for building code activities. This included adopting or enforcing hazard-resistant building codes or developing building code capacity, for example. In July 2024, FEMA announced that it had selected 129 Building Code Plus-Up projects totaling $55.7 million for fiscal year 2023.[55]

FEMA also encourages resilient building codes by prioritizing applications from jurisdictions that have implemented resilient building codes. For example, FEMA awards criteria points to applicants with favorable building codes, which makes their application more competitive for selection.

Officials in one state told us that there is not enough political support for tornado building codes at the state level, so the state emergency management office works with communities facing higher tornado risk to

[53]For example, a small nursing home (Risk Category III) in northwest Georgia may only need to be designed for EF-0 wind speeds, while a large hospital (Risk Category IV) in central Oklahoma may need to be designed for EF-2 speeds.

[54]FEMA and NIST, *Design Guide for New Tornado Load Requirements in ASCE 7-22* (January 2023).

[55]As mentioned above, in April 2025, FEMA announced that it was ending the BRIC program. In August 2025, FEMA officials stated that the agency continues to evaluate whether to end or revise the BRIC program. As such, it is unclear how many of those projects will receive assistance, as of August 2025.

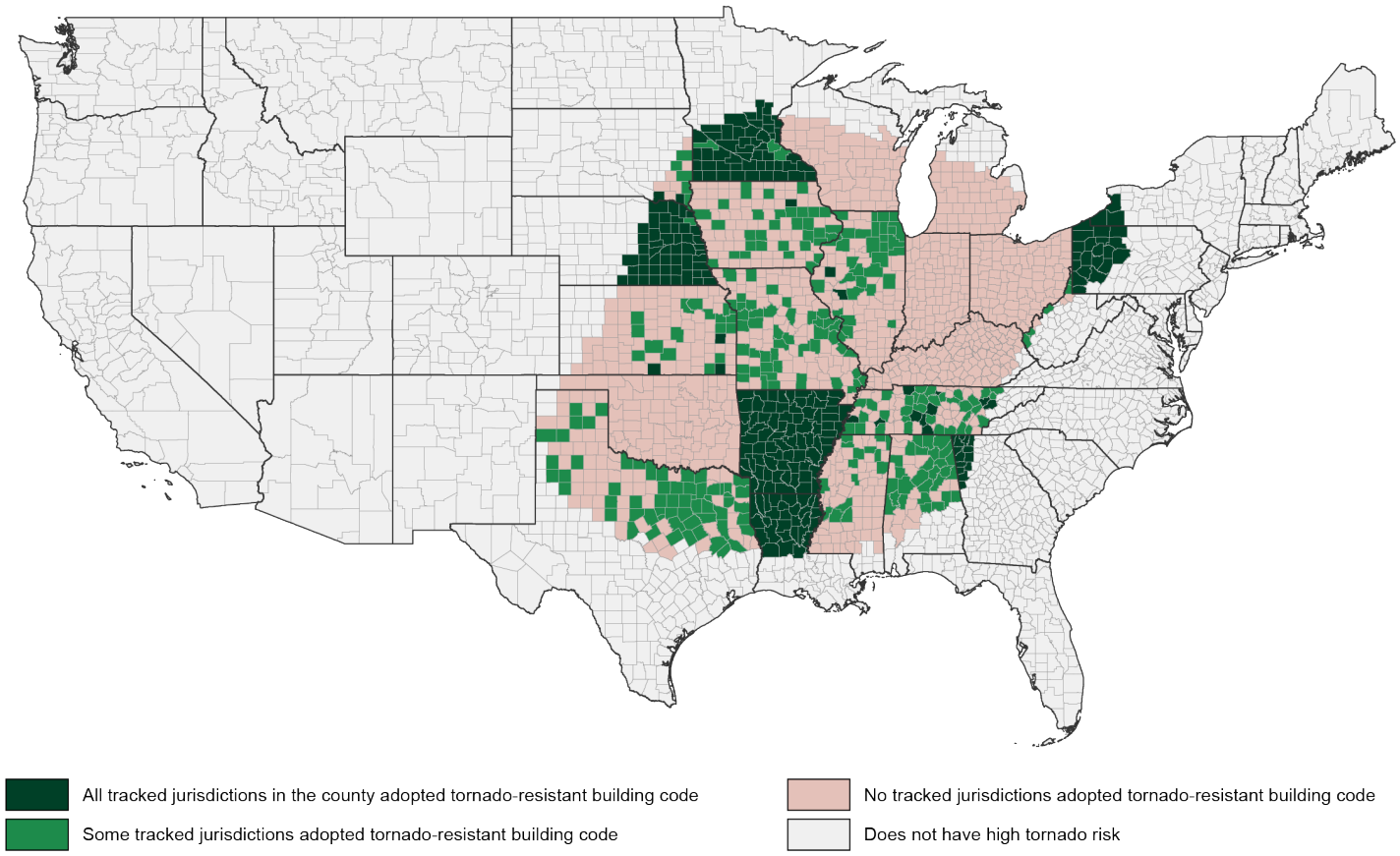
improve building codes on the county level, including with Building Code Plus-Up grants. The officials said they plan to use the grants for evaluating and improving building codes, as well as statewide education about building codes.

Building Code Tracking

FEMA tracks the status of tornado-resistant building codes adopted by tribal, state, and local governments across the U.S., including the adoption or weakening of codes. FEMA considers a jurisdiction's building codes to be tornado resistant if it is within the high tornado risk region that includes parts of 23 states, and has adopted the 2018 or later International Building Code, without weakening it by amending the tornado sections.[56] According to FEMA's Building Code Adoption Tracking program, 24 percent of jurisdictions within the high-risk region had building codes resistant to tornadoes, as of September 2024, as shown in figure 9. This represents an increase of 2 percent from the previous year. According to FEMA officials, 43 percent of the population in the high-risk region was covered by tornado-resistant building codes as of December 2024.

[56]Specifically, the relevant tornado-related International Building Code sections are 423.3 and 423.4, which require installation of tornado shelters in emergency response facilities (such as fire stations, police stations, and 911 call centers) and Educational Group E occupancies (such as schools), respectively. For FEMA's 2024 tornado tracking, jurisdictions located in the high tornado risk area had tornado-resistant codes if they had adopted the 2018 International Building Code or more recent editions without weakening the storm shelter provisions.

Figure 9: Adoption of Tornado-resistant Building Codes, through fiscal year 2024



Source: GAO analysis of Federal Emergency Management Agency data, U.S. Census Bureau (map). | GAO-25-107384

Notes: Tornado risk is based on the 250-mph wind speed zone shown in Figure 304.2(1) in International Code Council 500-2014. FEMA considers a jurisdiction tornado-resistant if it adopted, as mandatory, the 2018 International Building Code or later editions without weakening any of the storm shelter provisions of International Building Code Section 423. Data reported at the county level is based on survey responses and FEMA tracking of nearly 12,000 jurisdictions within and including counties. Jurisdictions within counties that do not participate in tornado building code tracking are not reflected in this map.

FEMA's tornado building code tracking has focused on monitoring state and local amendments to the storm shelter requirements. This is because before 2024, tornado-related building codes only addressed storm shelter requirements. However, as more jurisdictions adopt the 2024 building codes for tornado-resilient buildings, FEMA officials said the agency will track how jurisdictions adopt and amend that requirement. NIST officials said that in the 2 to 3 years after the creation of the 2024 tornado model code, state and local governments will review it to potentially adopt it.

However, they said it typically takes 5 to 10 years before the majority of jurisdictions adopt a new model code.

Building Code Adoption and Enforcement Challenges

Socially vulnerable communities face higher disaster risks due to weaker building codes, including because they are likely to have less resilient housing, according to the Congressional Research Service.[57] Local governments with smaller budgets also may not be able to maintain sufficient staff with the requisite expertise to develop, update, and enforce building codes. For example, officials in one state emergency management office told us that cities are better protected by tornado-resilient building codes than rural areas where codes are typically not as stringent. They also said that codes are only effective if enforced, and some counties often do not enforce them.

Some states and localities we spoke with expressed concerns about the costs of tornado-resilient building codes, especially for housing, and cited political opposition as a barrier. For example, a tribal organization we spoke with said that while important for tornado resilience, adopting new codes increases construction costs, which can be problematic for Tribes with limited resources. According to FEMA officials, many states have amended out tornado code requirements for storm shelters due to funding constraints. For example, they said that when some rural schools are struggling to pay for books, storm shelters are a financial burden they cannot afford.

Federal Actions to Help Address Challenges

FEMA supports state and local efforts to implement building codes by raising awareness of how communities benefit from adopting and enforcing them. For example, FEMA shares information about building codes through public campaigns and educational materials explaining the advantages of modern building codes.

NIST also works to support state and local efforts and share information. NIST officials said they hope there are not setbacks with states and localities removing requirements for more tornado-resilient buildings adopted in the 2024 model code, similar to jurisdictions amending out the storm shelter requirements in the past. To address this concern, NIST

[57]Congressional Research Service, *Building Resilience: FEMA's Building Codes Policies and Considerations for Congress*, R47612 (Oct. 17, 2023).

developed tools to help jurisdictions make a more risk-informed decision. For example, NIST has collaborated with FEMA and the private sector to publish an economic analysis showing that adopting the tornado provisions in the 2024 model code will not lead to major cost increases. NIST found that cost increases for school construction to withstand an EF-2 or weaker tornado would amount to a cost increase of at most 0.14 percent.[58] NIST and FEMA's design guide also aims to help building inspectors, engineers, and architects understand the new requirements and the limited costs associated with implementing them.

Finally, NIST has provided technical assistance to several states and communities to help them understand risks and costs associated with adopting tornado resilient building codes. For example, city of Houston officials reached out to NIST to learn how adopting the most recent tornado design requirements would impact their specific region, according to NIST officials. In addition to providing existing resources on the economic benefit of tornado resilient building codes, NIST analyzed the tornado wind speeds and forces that buildings in Houston need to withstand. According to NIST officials, Houston ultimately decided to adopt the most recent tornado building design provisions into its 2024 city construction code.

The National Weather Service Issues Tornado Warnings and Locals Manage Sirens

Tornado alerting is split between the federal government and tribal, state, and local officials. At the federal level, the National Weather Service tracks weather conditions, issues tornado warnings to the public, and communicates information to tribal, state, and local partners. Tribal and state officials may issue additional alerts via alerting platforms or social media. At the local level, counties may operate sirens, but some local officials reported challenges using or maintaining these systems.

The National Weather Service Issues Warnings and Coordinates with Local Officials Before Tornadoes

Tornado Warnings

[58]NIST, *Economic Analysis of ASCE 7-22 Tornado Load Requirements*, NIST Technical Note 2214 (March 2022).

The National Weather Service's Storm Prediction Center issues tornado watches; local National Weather Service offices issue tornado warnings.[59] Specifically, meteorologists at the Storm Prediction Center issue daily forecasts for severe thunderstorms based on weather conditions across the U.S. If conditions develop that are favorable for tornadoes, the Storm Prediction Center issues a tornado watch, which can cover parts of a state or several states and can occur hours in advance of a tornado.[60] When a tornado has been spotted or indicated by weather radar, local National Weather Service offices issue a tornado warning. A tornado warning can cover parts of counties or cities and indicates that residents should immediately find shelter.

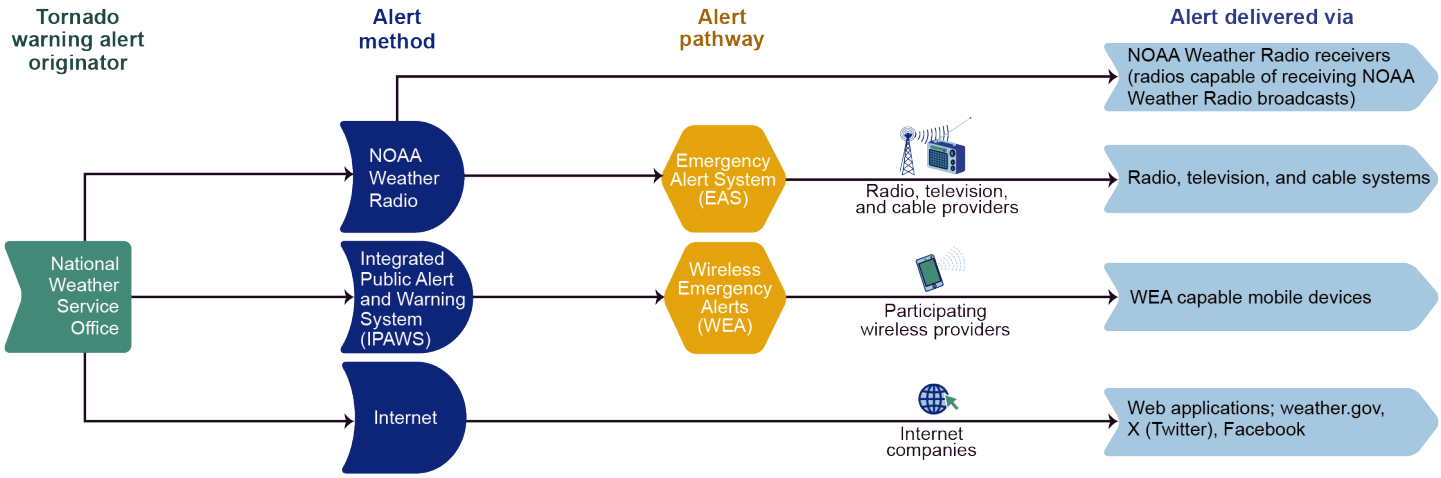
The National Weather Service communicates tornado warnings to the public via: (1) NOAA Weather Radio, (2) the Integrated Public Alert and Warning System (IPAWS), and (3) the internet.[61] Figure 10 below shows the different ways people can receive a tornado warning, including on mobile devices, radio, television, and social media.

[59]See 15 U.S.C. § 313.

[60]In a July 2025 report, the Department of Commerce Office of Inspector General assessed the National Weather Service's tornado forecasting and warning performance. It found that while the National Weather Service has reached its goals regarding false alarms in 9 of the last 12 years, it consistently fell short of its performance goals for detection and warning lead times during that span. For further details, see U.S. Department of Commerce, Office of Inspector General, *Independent Evaluation of the National Oceanic and Atmospheric Administration's National Weather Service Tornado Forecasting and Warning Services*, OIG-25-026-I (Washington D.C.: July 8, 2025).

[61]For more information on these alerting methods, see GAO, *Emergency Alerts: NOAA Should Take Additional Actions to Help Ensure Tsunami Alerts Reach Those at Risk*, GAO-23-105961 (Washington, D.C.: May 16, 2023).

Figure 10: The National Weather Service's Primary Methods for Broadcasting Tornado Warnings to the Public



Source: GAO analysis of National Oceanic and Atmospheric Administration, Federal Communications Commission, Federal Emergency Management Agency information, and GAO (icons). | GAO-25-107384

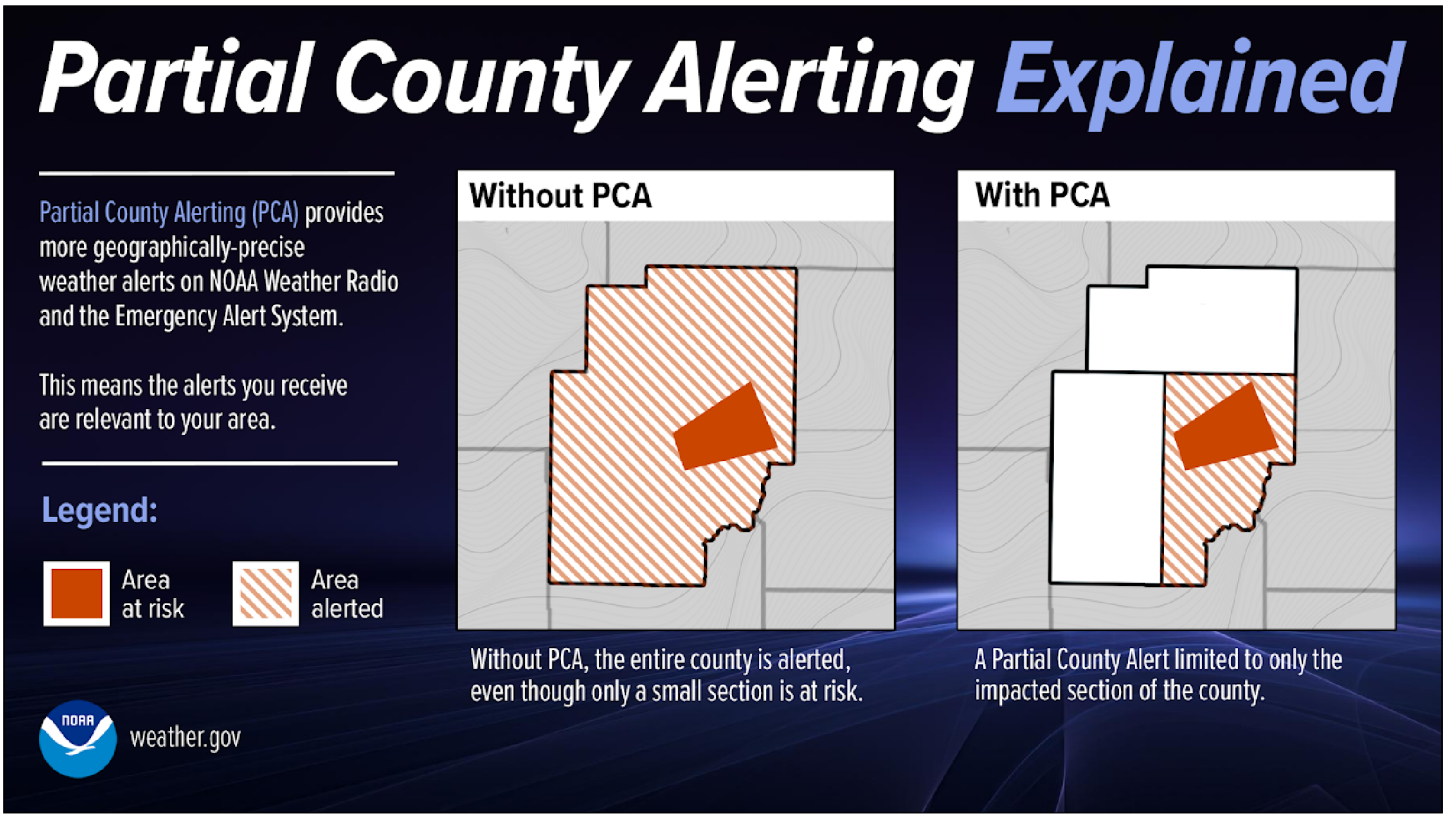
NOAA Weather Radio

NOAA Weather Radio is a radio system—provided to the public by NOAA—that continuously broadcasts weather and hazard information, including tornado alerts, via a nationwide network of over 1,000 radio transmitters. NOAA Weather Radio is also a key method for activating the Emergency Alert System—the nationwide alert system for delivering emergency messages to television and radio audiences.

Tornadoes are disasters where precise location information and alerting is particularly beneficial. Alerts sent via NOAA Weather Radio and the Emergency Alert System generally alert the entire county. However, this results in any entire county receiving an alert when the alert may only apply to select areas within the county. NOAA officials told us that reducing unnecessary alerting and alert fatigue is important. In 2023, we reported that NOAA launched a "partial county alerting" initiative in 2021 and that they expected nationwide expansion to select counties by 2023.[62] NOAA officials told us this initiative would allow alerts sent via NOAA Weather Radio and the Emergency Alert System to be targeted to only the sections of a county determined to be most at risk of a hazard, as shown in figure 11.

[62]GAO-23-105961.

Figure 11: Description of the National Oceanic and Atmospheric Administration's (NOAA) Partial County Alerting Initiative



Source: National Oceanic and Atmospheric Administration. | GAO-25-107384

According to NOAA officials, by more precisely alerting locations closer to hazards like tornadoes, this initiative could allow for alerts to more accurately target at-risk populations and avoid the risks of over-alerting portions of a county not at risk of the hazard. In 2024, NOAA officials told us that the main barrier to implementing partial county alerting is a lack of familiarity by broadcasters. Officials told us they are performing outreach to help counties better understand how partial county alerting works. As of April 2025, eight of 122 local National Weather Service offices have implemented partial county alerting. NOAA officials told us future expansion of partial county alerting will depend on needs and resources at the local level.

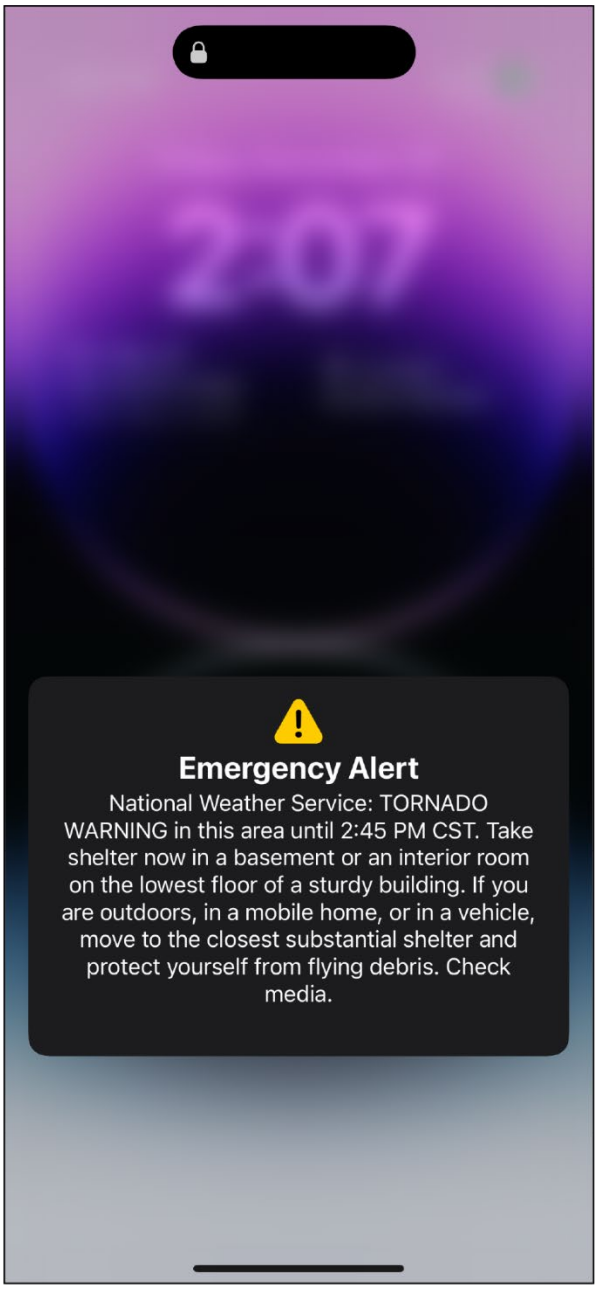
Integrated Public Alert and Warning System (IPAWS)

IPAWS is a FEMA-maintained and operated network of systems that allows tribal, federal, state, and local alert originators to send emergency

messages to the public. Originators can send alerts via various pathways, including to cell phones. Wireless Emergency Alerts are text-like messages sent to cell phones via one-way transmission.[63] Local National Weather Service Offices use IPAWS to send Wireless Emergency Alerts. An example of a tornado warning sent via a Wireless Emergency Alert is shown in figure 12 below.

[63]Wireless Emergency Alerts include a special tone and vibration, both repeated twice. There is no charge associated with receiving it.

Figure 12: Example Wireless Emergency Alert Sent During a Tornado Warning



Source: National Weather Service. | GAO-25-107384

Internet

The National Weather Service also uses the internet to communicate tornado information to the public. For example, it posts daily forecasts, watches, and warnings to its website, weather.gov, and social media sites like Facebook and X.

In addition to alerting the public, the National Weather Service also coordinates with tribal, state, and local officials ahead of possible tornadoes. For example, the National Weather Service operates its "NWSChat 2.0" instant messaging platform, which allows forecasters to communicate real time information on weather conditions and answer questions from state and local partners and the media.

Several tribal, state, and local officials told us they found "NWSChat 2.0" or other NWS resources to be helpful and critical for tornado alerting. For example, an official from one county told us they participate in weekly National Weather Service briefings, where National Weather Service officials update local emergency managers on potential weather for the week. The official also told us that when a tornado appears to be a threat, the National Weather Service holds an additional webinar to provide more information to the emergency managers and public safety officials.

Tribal, State, and Local Alerting

In addition to alerting at the federal level, we were told by tribal, state, and local officials that they may provide additional alerts and information to the public about possible tornado risk.

Tribal tornado alerting. Tribal officials we spoke with reported using various alerting methods. For example, officials from one of the two Tribes we spoke with told us they use IPAWS, their website, radio, and private alerting platforms to alert the public.[64] Those officials also told us that, while they do not operate sirens, the county that the Tribe's land overlaps with does have them. Officials from the other Tribe told us that they are considering using a private alerting platform to send alerts and currently rely on social media for search and rescue efforts after a disaster. In 2024, FEMA established a working group that focuses on tribal alerting needs, including sharing best practices with Tribes and allowing Tribes to share feedback on how IPAWS could better assist Tribes with alerting.

[64]Alerts sent using a private alerting platform are only sent to individuals who subscribe to receive them.

State tornado alerting. Some state officials told us they may not issue alerts themselves, because much of tornado alerting is done at the federal and local level. Officials from three of the five states we spoke with stated they provide information to the public via cellular alerts, whether through IPAWS or a private alerting system, or social media. Officials from the other two states told us that they generally do not issue any alerting related to tornadoes or prefer that local officials take the lead on alerts about local weather conditions. However, they said they can use Wireless Emergency Alerts or the Emergency Alert System if they need to. For example, officials from one state reported sending both types of alerts after a major tornado to warn residents that they were in a high-risk area for a subsequent tornado and that they should listen for sirens. Further, officials from two of the five states we spoke with told us they provide a private alerting platform for counties to opt into, which allows those counties to alert at the local level when needed.

Local tornado alerting. Warning sirens, which can help alert residents who are outdoors, are one of the ways local officials alert their residents about tornadoes, as shown in figure 13. Officials in six of the seven counties we spoke with reported using sirens to alert the public of tornadoes.[65] One of those officials told us that sirens are particularly important in their county because they are easy for the public to understand. For example, they said residents may not understand why they receive Wireless Emergency Alerts or alerts from the Emergency Alert System but if they hear a siren, they know they are in danger.

[65]Officials from one of the Tribes we spoke with stated they do not manage sirens for the Tribe because the county that the Tribe is in does so. Officials from second Tribe we spoke with told us they received a grant through one of FEMA's Hazard Mitigation Assistance programs to install sirens, but they had not done so yet.

Figure 13: A Siren System in Shawnee, Oklahoma

Source: GAO. | GAO-25-107384

City or county officials may activate a siren manually if they perceive a severe weather threat by using a phone or computer app or physically pushing a button on the siren itself. Other sirens may automatically sound in response to a Wireless Emergency Alerts or Emergency Alert System alert.

Local officials may also use other methods, such as private alerting platforms, social media, and radio to alert the public about tornadoes.[66] For example, officials told us while they do not use alerting platforms to warn residents of a tornado, they may use private alerting platforms to communicate information such as shelter locations and hours. An official from one county told us they issued an alert five days after a tornado to alert the residents of a potential subsequent tornado and notify them that the safe room at the public school would be open. Further, an official from another county told us they host a Facebook live stream to show residents weather and road conditions in real-time. Finally, an official in an additional county told us they encourage residents to listen to their local radio station for weather information.

Some Local Officials Face Challenges Using and Maintaining Sirens

Local emergency managers reported challenges with using and maintaining sirens because they may be out of date or expensive to maintain. For example, officials in one county told us their sirens are outdated, and use analog, rather than digital, technology. This makes it more difficult to find people who can repair or install those type of systems. Officials in another county told us they lack the funding to maintain their sirens, which are about 25 years old and will each reach the end of their useful lives around the same time. There are no spare parts available for these older sirens and the county cannot afford to replace the sirens with newer ones.

FEMA provides assistance for siren systems through its Hazard Mitigation Assistance programs, as previously noted. However, FEMA officials said communities have generally been unable to use these programs to maintain siren systems. FEMA has taken steps to address this challenge. Starting in fiscal year 2025, FEMA's Safeguarding Tomorrow Revolving Loan Fund program allows for certain projects to maintain siren

[66]Officials from FEMA's IPAWS office told us local governments typically do not issue Emergency Alert System alerts or Wireless Emergency Alerts for tornadoes because this is the role of the National Weather Service. Officials from IPAWS told us it could cause confusion if local officials sent tornado alerts at the same time as the National Weather Service and that local alerting using IPAWS is not common.

systems.[67] Specifically, they said communities can use the program to help fund projects that make sirens function, but projects cannot cover routine maintenance.

FEMA Provides Assistance for Tornado-Related Disasters, but Selected Tribal, State, and Local Officials Reported Some Challenges with Assistance

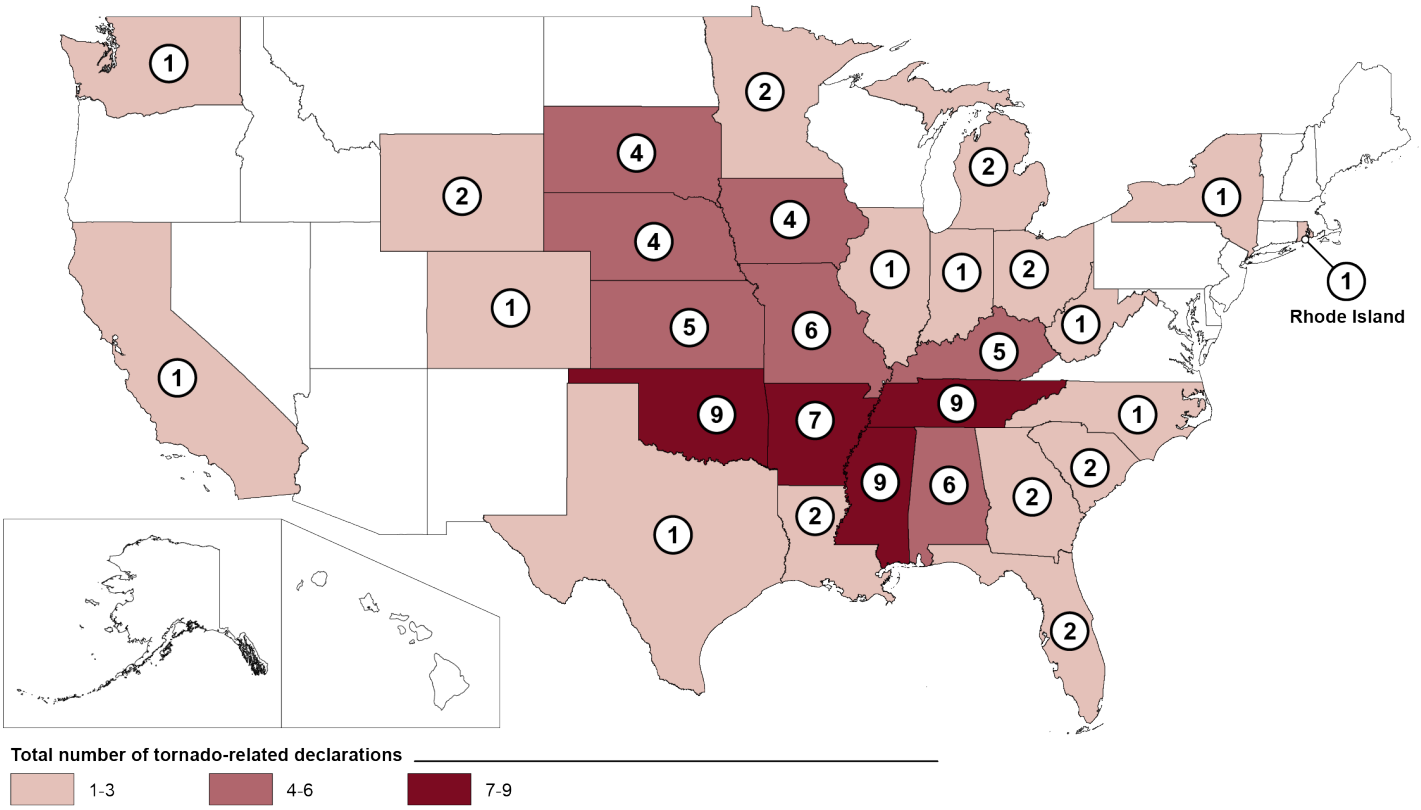
FEMA Provided $2.8 Billion in Assistance for 94 Tornado-Related Disasters from Fiscal Years 2019-2024

From fiscal years 2019 through 2024, the President approved 94 major disaster declarations and four emergency declarations for tornado-related disasters across the U.S.[68] During this time, several states received more than one major disaster declaration, as shown in figure 14. For example, three states—Oklahoma, Mississippi, and Tennessee—received nine major disaster declarations for tornado-related disasters. Additionally, the President denied 12 requests for declarations, which included 11 submitted by states and one submitted by a Tribe.

[67]See 42 U.S.C. § 5135.

[68]Emergency declarations supplement state and local or tribal government efforts in providing emergency services, such as the protection of lives, property, public health, and safety, or to lessen or avert the threat of a catastrophe in any part of the U.S. A governor or tribal chief executive may still submit a major disaster declaration request if the President declares an emergency declaration. We categorized declarations as tornado-related based on FEMA identifying the disaster as involving tornadoes in the declaration title.

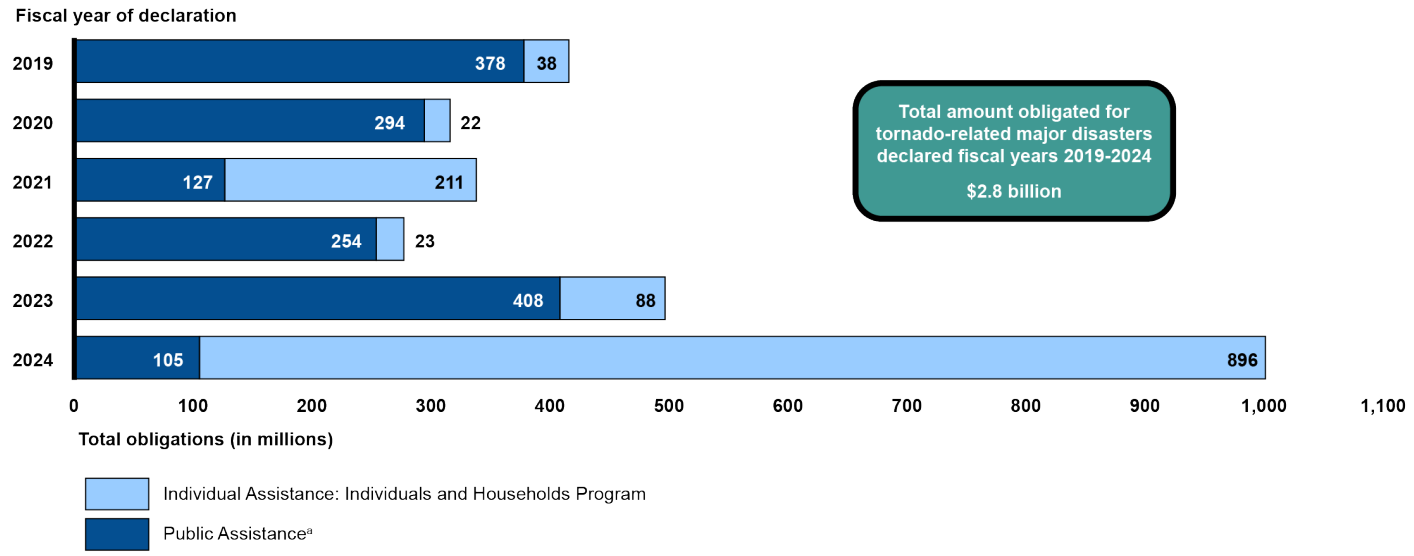
Figure 14: Number of Tornado-Related Major Disaster Declarations by State, Fiscal Years 2019-2024



Source: GAO analysis of Federal Emergency Management Agency data, U.S. Census Bureau (map). | GAO-25-107384

Across the 94 tornado-related major disaster declarations from fiscal years 2019 to 2024, FEMA obligated $2.8 billion for Public Assistance and for the Individuals and Households Program under FEMA's Individual Assistance, as of December 2024. These numbers fluctuated for the disasters declared over the six years, with FEMA obligating its highest amount for the Individuals and Households Program for major disasters declared in 2024, as shown in figure 15.

Figure 15: Federal Emergency Management Agency (FEMA) Funding Obligated for Tornado-Related Major Disasters Declared Fiscal Year 2019-2024, by Program

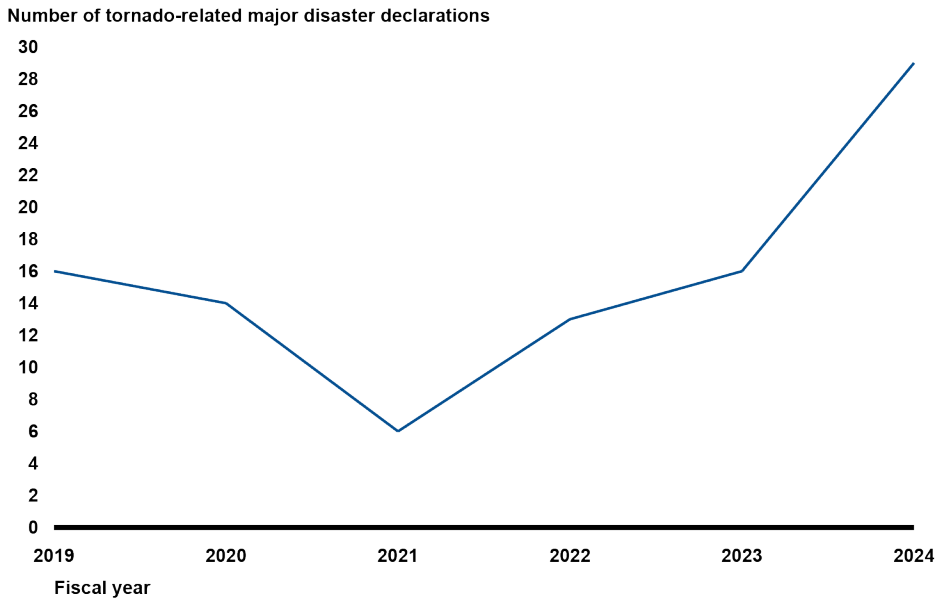


Source: GAO analysis of FEMA data. | GAO-25-107384

[a]Obligated amounts may change over time. FEMA may continue to obligate dollars for these disasters in future years, which may cause the amounts to increase. FEMA may also de-obligate amounts during the grant process. Total obligations are as of December 2024.

Further, 2024 had the highest number of tornado-related major disaster declarations, as shown in figure 16 below. For example, there were 29 major disaster declarations for tornadoes in 2024, compared to six in 2021.

Figure 16: Number of Tornado-related Major Disaster Declarations, fiscal year 2019-2024



Source: GAO analysis of Federal Emergency Management Agency data. | GAO-25-107384

FEMA provides assistance to survivors and communities through two of its key programs: the Individuals and Households Program, which is a component of Individual Assistance, and Public Assistance. Appendix I shows the number of tornado-related major disaster declarations and FEMA funding obligated for these programs for the four states we visited.

Individual Assistance. Forty seven of the 94 tornado-related major disaster declarations from fiscal years 2019 through 2024 included Individual Assistance. For these 47 declarations, FEMA obligated about $1.3 billion through its Individuals and Households Program, its largest Individual Assistance component program.

The Individuals and Households Program provides financial assistance and direct services to eligible individuals and households who have uninsured or underinsured necessary expenses and serious needs due to the disaster. Tornadoes can cause significant damage to homes, as shown in figure 17. The Individuals and Households Program may provide assistance for temporary housing, the repair or replacement of homes, or other disaster-caused expenses. For example, FEMA may provide an individual with rental assistance or reimbursement for hotel costs while they are unable to live in their home.

Figure 17: Housing Damage in Elkhorn, Nebraska After a Tornado Disaster, June 2024

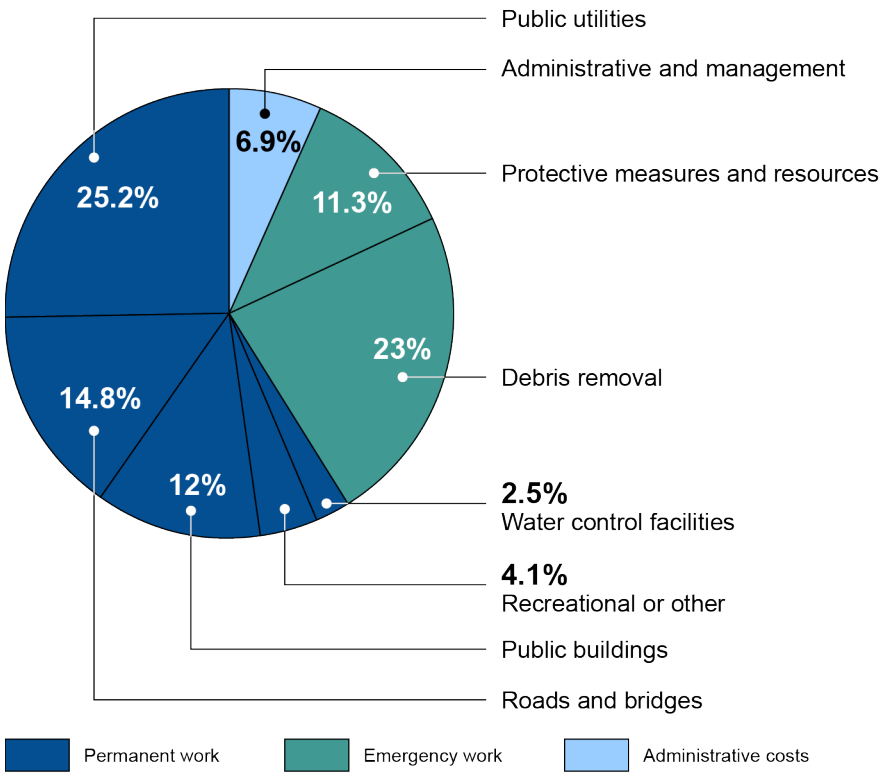
Homes in Elkhorn, Nebraska damaged in the April 2024 tornado disaster

Source: GAO. | GAO-25-107384

Public Assistance. Eighty six of the 94 tornado-related major disaster declarations from fiscal years 2019 through 2024 included Public Assistance. Across these 86 disasters, FEMA obligated about $1.6 billion for around 12,400 projects, as of December 2024. These projects took place across 26 states and one Tribe.

Public Assistance can cover several types of projects. From fiscal years 2019 to 2024, FEMA obligated about $363 million, or 23 percent of its tornado-related Public Assistance obligations, for debris removal. It also obligated about $233 million (almost 15 percent), for roads and bridges, and about $395 million (about 25 percent) for public utilities. Other obligations include assistance for parks and recreational facilities and management costs, as shown in figure 18 below.

Figure 18: Public Assistance Funding Obligated by Project Category for Tornado-Related Major Disasters Declared During Fiscal Years 2019-2024



Source: GAO analysis of Federal Emergency Management Agency data. | GAO-25-107384

Local and tribal officials we interviewed used Public Assistance grants for a variety of purposes. For example, FEMA officials in one region told us they were working with six counties in Nebraska on projects focused on debris removal and the restoration of electrical lines and poles. Additionally, officials in Iowa told us they were using Public Assistance to place their power lines underground to prevent damage in the future. Figure 19 below shows an example of the debris that tornadoes can create.

Figure 19: Debris in Sulphur, Oklahoma After A Tornado Disaster, September 2024

Sulphur, Oklahoma's historic commercial district before a tornado and about 5 months after

Source: Photos by Jimmy Emerson (left) and GAO (right). | GAO-25-107384

Selected Tribal, State, and Local Officials Reported Challenges Working with FEMA During Recovery

Officials we interviewed at the tribal, state, and local level reported finding FEMA staff helpful when recovering from tornado disasters, but also identified challenges. For example, officials from one Tribe told us that they appreciated that FEMA staff wanted to identify language translators for a town hall so that FEMA could adequately translate information for this community after a recent disaster. Additionally, officials in one county told us they appreciated how quickly FEMA set up the Disaster Recovery Centers after a tornado.[69]

However, officials across these jurisdictions identified challenges working with FEMA on response and recovery. Specifically, officials across the two Tribes, four of five states, and five of seven counties we spoke with told us they find FEMA processes for response and recovery to be administratively burdensome. For example, officials in one state told us FEMA retroactively applied a new requirement of including GPS coordinates in the state's grant application for outdoor warning sirens. The state officials had already included photos of the planned locations

[69]Disaster Recovery Centers are temporary offices set up after a disaster to provide support to impacted areas and communities, such as helping people with FEMA assistance applications.

for the sirens but not GPS coordinates because the requirement did not exist when they began their application. This meant that state officials had to go back into their application, identify the GPS coordinates for each siren, and add them to its application, which they found to be burdensome.

FEMA officials told us they generally do not retroactively apply application requirements unless it may be beneficial to the applicant. For example, they said that when they make changes to the Public Assistance program that would provide greater assistance to the public, they offer the opportunity for applicants to take advantage of those changes. This means applicants could update their applications if they wish, which FEMA stated would be beneficial to the applicant.

FEMA Has Not Taken Sufficient Actions to Meet the Needs of Small and Rural Communities

Small states and rural communities have unique needs during the tornado recovery process that FEMA has not taken sufficient action to address. According to its capstone doctrine, one of FEMA's core values is fairness, which includes ensuring equal access to FEMA resources.[70] Additionally, in 2006, the Small State and Rural Advocate position was created to be an advocate for the fair treatment of small states and rural communities.[71] However, FEMA does not have flexibility in its Public Assistance program guidance that would allow it to create modify or tailor requirements for small and rural communities.

Officials from one Tribe, all five states, and three counties told us their interactions with FEMA following tornadoes have not been tailored to the needs of tribal and rural communities. For example, officials from one state told us FEMA requires that a state official monitor debris removal during recovery, including any trucks that take debris to the landfills, by being physically present at the debris removal site. However, state officials told us small states and rural communities may have a small number of staff, and this requirement to be physically present is not aways possible for them.

While FEMA has made efforts to implement a community-focused approach to its programs, small states and rural communities still face challenges following a disaster, some of which we have previously reported on. For example, some rural communities may not have funding

[70]FEMA, Publication 1 (Washington, D.C.: 2019).

[71]42 U.S.C. § 5165d.

available to create or staff emergency management departments.[72] Additionally, rural communities may not have the technical expertise needed to work on certain projects.[73] Low staffing and the lack of internal expertise can make response and recovery, and accessing FEMA funding, more difficult for these communities no matter the type of disaster.

FEMA has a Small State and Rural Advocate whose purpose is to counsel states to ensure the needs of rural communities are addressed, among others. However, this is a one-person position, and this official is unable to visit every disaster site, especially when multiple disasters occur at the same time. Additionally, while the Advocate has learned of communities' needs on an ad-hoc basis, they have not undertaken a comprehensive approach to identify needs or made any changes to Public Assistance policy that would benefit small states and rural communities, as of May 2025.

Further, in 2023, a contracted review of FEMA's Public Assistance found that rural communities may face burdens in accessing Public Assistance. The report recommended that FEMA tailor its support to applicants based on disaster effects and each applicant's level of capacity and resources to access Public Assistance.[74] FEMA has taken steps towards addressing this recommendation, such as simplifying documentation requirements for some types of projects. However, these efforts were not intended to focus specifically on the needs of small states and rural communities.

FEMA officials told us that the agency's Public Assistance policies do not have specific criteria or considerations for small and rural communities. By identifying and implementing ways to improve flexibility in Public Assistance program guidance, such as the requirements for monitoring debris removal, FEMA could better ensure that assistance is accessible and less burdensome for small states and rural communities.

[72]GAO, *Small Business Administration: Targeted Outreach about Disaster Assistance Could Benefit Rural Communities*, GAO-24-106755 (Washington, D.C.: Feb. 22, 2024).

[73]GAO, *Rural Water Infrastructure: Federal Agencies Provide Funding but Could Increase Coordination to Help Communities [Reissued on November 6, 2015]*, GAO-15-450T (Washington, D.C.: Feb. 27, 2015).

[74]CNA, *Review of FEMA's Public Assistance National Delivery Model* (Arlington, VA: Jan. 2023).

FEMA Provided Inconsistent Guidance to Public Assistance Applicants

The Standards for Internal Control in the Federal Government state that management should externally communicate the necessary quality information to achieve the entity's objective.[75] Further, the Plain Writing Act of 2010 was enacted to promote clear government communication that the public can understand and use.[76] However, FEMA has provided inconsistent guidance to Public Assistance applicants, which increases confusion among applicants during their time of need.

The Public Assistance Program Delivery Managers are the primary point of contact for Public Assistance applicants and recipients. These staff facilitate the Public Assistance application process, manage information collection, and provide customer service to grant applicants and recipients, including those recovering from tornadoes. FEMA officials told us that these staff receive training on Public Assistance requirements and updated training as requirements change.

However, officials across four states, one Tribe, and two counties reported receiving conflicting or unclear information from FEMA staff when recovering from tornado disasters due to poor communication within FEMA and coordination across various levels of the agency. For example, officials in one state told us that FEMA staff assigned to a complex project did not all have the expertise needed. As a result, the state officials had to coordinate with FEMA staff to ensure FEMA assigned the right people to the project.

FEMA officials told us coordinating stakeholders for projects is the responsibility of the Public Assistance Program Delivery Manager. Turnover in the Public Assistance Program Delivery Manager position, however, has contributed to FEMA applying program requirements inconsistently. For example, officials in one county told us they worked with six different Public Assistance Program Delivery Managers over the course of one Public Assistance project.[77] They said that each time a new Manager came on, they presented new requirements that the county officials had not seen before, which increased the burden on county staff. While FEMA posts Public Assistance requirements in a policy guide, the document is about 330 pages and can be a burden for applicants to refer

[75]GAO, *Standards for Internal Control in the Federal Government*, GAO-14-704G (Washington, D.C.: Sept. 10, 2014).

[76]Pub. L. No. 111-274, 124 Stat. 2861.

[77]FEMA officials we spoke with told us there were five, rather than six, Public Assistance Program Delivery Managers on this project.

to while recovering from a tornado or other types of disasters. For example, one county official told us that the Public Assistance document is difficult to follow because of its length.

Additionally, officials in one state told us the Public Assistance Program Delivery Manager advised state officials that they did not need documentation for category Z costs (a category of Public Assistance management costs) during their tornado recovery and would automatically receive a 5 percent reimbursement.[78] However, 5 years after the projects began, and after incurring millions of dollars in costs, they said FEMA staff changed course and told them documentation is required for those costs. The state officials said they had not maintained documentation based on the prior advice and, as a result, fear they will not be reimbursed. The officials also stated that when they tried to get clarification from their FEMA region, FEMA officials stated they were also confused by the reimbursement requirements for management costs.

In January 2023, a contracted review of FEMA's Public Assistance program found that the agency inconsistently applied Public Assistance policies across different disaster types, which was exacerbated by high turnover among the Public Assistance Program Delivery Manager position.[79] Further, we have previously identified FEMA staffing as a long-standing issue. For example, from fiscal years 2019 to 2022, the size of FEMA's disaster workforce fell below its target.[80] Our analysis of FEMA staffing data showed that FEMA continues to face challenges filling the Public Assistance Program Delivery Manager position. Specifically, our analysis showed that in 2024, 81 percent of the positions were filled. In February 2025, GAO added Disaster Assistance to its High Risk List and called for strengthening FEMA's disaster workforce and capacity.[81]

[78]Management costs include any indirect costs and administrative expenses that the grantee incurs when administering an award. This may include staff salary costs for performing activities such as writing quarterly reports or conducting site visits to project sites.

[79]CNA, *Review of FEMA's Public Assistance National Delivery Model*.

[80]GAO, *FEMA Disaster Workforce: Actions Needed to Improve Hiring Data and Address Staffing Gaps*, GAO-23-105663 (Washington, D.C.: May 2, 2023).

[81]GAO, *High-Risk Series: Heightened Attention Could Save Billions More and Improve Government Efficiency and Effectiveness*, GAO-25-107743 (Washington, D.C.: Feb. 25, 2025).

FEMA officials told us in February 2025 that turnover among its Public Assistance Program Delivery Managers could be due to a number of reasons, including long project timelines, the 50-week cap on the amount of time a FEMA employee can be deployed, personal and medical issues, and performance issues.[82] FEMA officials also told us Public Assistance Program Delivery Managers may have 19 to 27 projects at one time and that they are currently reviewing the roles and responsibilities of the position. Identifying and implementing strategies to ensure Public Assistance Program Delivery Managers are knowledgeable of program policies and applying them consistently would decrease the burden on applicants. It would also help reduce confusion on the applicant side and make the application process easier for applicants in their time of need.

Conclusions

As tornadoes continue to impact communities across the U.S., with 2024 having the highest number of tornadoes on record since 1950, taking steps to ensure that FEMA resources for mitigation and recovery are accessible would help FEMA meet community needs. FEMA provides assistance to Tribes, states, and localities for mitigating and recovering from tornadoes but officials from those jurisdictions reported challenges accessing assistance. For example, FEMA has taken positive steps toward better understanding Tribes' emergency management capacity and needs by partnering to launch an assessment of tribal needs and holding feedback sessions on its National Tribal Strategy in 2023 and 2024. Three years after setting its goal to study tribal capacity, FEMA launched a study in January 2025 but has not completed it. Identifying Tribal Nations' needs for emergency management capacity and the extent to which identified needs are being met would give FEMA a clearer, more comprehensive view of Tribes' needs and better position the agency to address them.

Additionally, current law limits eligibility for Emergency Management Performance Grant awards—which helps build emergency management capacity— to states and territories. Tribes are not eligible to apply directly to FEMA. Some states distribute awards to Tribes, but 17 states with at least one federally recognized Tribe within their borders did not distribute any program awards to Tribes from fiscal years 2014 through 2023. In April 2023, FEMA submitted a legislative proposal to Congress describing state barriers limiting Tribes' access to this program and outlining several possible legislative solutions for creating a tribal-specific direct pathway for Tribes to access grants for building emergency management capacity.

[82]FEMA staff may be deployed for up to 50 consecutive weeks a year.

However, Congress has not yet taken action on FEMA's proposal. Enacting a law that would provide Tribes the ability to apply directly to FEMA would address state-imposed barriers that have limited Tribes' access to such grants.

Public Assistance can also be difficult to access because the related policies are not tailored to the needs of small states and rural communities and the guidance provided to Public Assistance applicants is inconsistent. For example, small states and rural communities experience low staffing, lack of technical expertise, and lack of funding, making it more difficult to apply for and manage projects involving FEMA grants. However, FEMA's policies do not consider these challenges, and it does not tailor its support to the applicant's level of capacity. Further, FEMA has experienced turnover in its Public Assistance Program Delivery Manager positions, and tribal, state, and county officials told us they have received conflicting and unclear information from FEMA officials. This has increased the burden on applicants and recipients of FEMA assistance as they have had to resubmit paperwork, for example, to meet FEMA requirements. Identifying ways to improve flexibility in Public Assistance program guidance and ensuring that Public Assistance Program Delivery Managers are knowledgeable of Public Assistance guidance would allow FEMA to better ensure that assistance is accessible and less burdensome for applicants and recipients.

Matter for Congressional Consideration

Congress should consider amending an existing program or creating a new program to provide grants directly to tribal governments for building emergency management capacity. In taking such action, Congress could find helpful GAO's prior work identifying program characteristics that can create barriers to tribal participation in federal programs. (Matter for Consideration 1)

Recommendations for Executive Action

We are making the following three recommendations to FEMA:

The FEMA Administrator should identify Tribal Nations' needs for emergency management capacity building, including the extent to which any identified needs are being met. After completing the study, the FEMA Administrator should outline steps the agency plans to take, with timeframes, to address any findings. (Recommendation 1)

The FEMA Administrator, in coordination with the Small State and Rural Advocate, should identify and implement ways to improve flexibility in Public Assistance program guidance for small states and rural communities. (Recommendation 2)

The FEMA Administrator should identify and implement strategies to ensure Public Assistance Program Delivery Managers are knowledgeable of program policies and consistently apply them when providing support to Tribes, states, and localities. (Recommendation 3)

Agency Comments

We provided a draft of this report for review and comment to the Department of Commerce, the Department of Homeland Security, and the National Science Foundation. The Department of Homeland Security concurred with all three of our recommendations. The Department of Homeland Security's written comments are reproduced in full in appendix III. The Department of Commerce and the Department of Homeland Security also provided technical comments, which we incorporated as appropriate.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Commerce, the Secretary of Homeland Security, the Chief of Staff of the National Science Foundation, who is performing the duties of the National Science Foundation Director, and other interested parties. In addition, the report is available at no charge on the GAO website at https://www.gao.gov.

If you or your staff members have any questions about this report, please contact Chris Currie at curriec@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to the report are listed in appendix IV.

//SIGNED//

Chris Currie
Director, Homeland Security and Justice

Appendix I: FEMA Tornado Assistance State Profiles

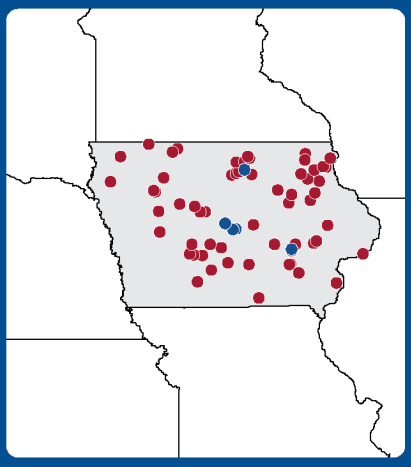
This appendix shows a summary of tornado-related information for the four states we visited in person: Iowa, Mississippi, Nebraska, and Oklahoma. Specifically, it shows the number of tornado-related major disaster declarations and FEMA obligations for tornado mitigation and recovery projects for each state from fiscal years 2014 through 2024.

Iowa:

Federal Emergency Management Agency (FEMA) assistance for tornado mitigation and recovery efforts

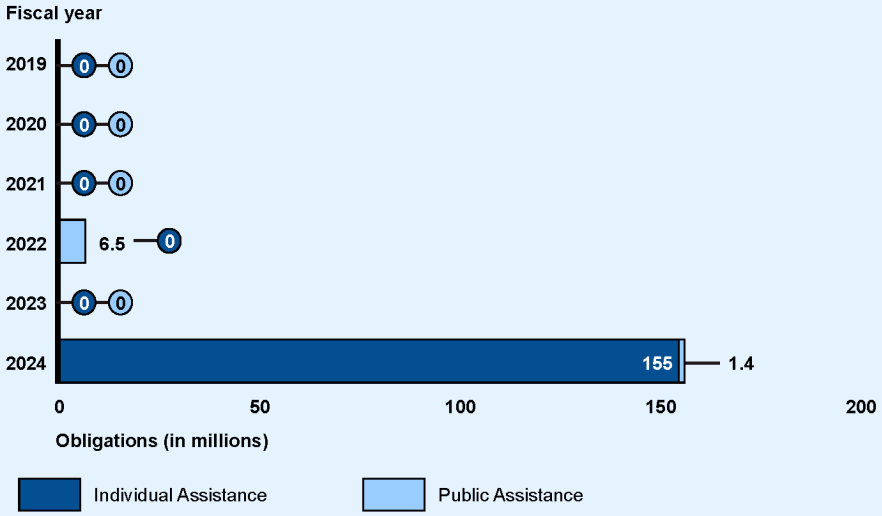
Across the four tornado-related major disaster declarations in Iowa from fiscal years 2019 through 2024, FEMA obligated $7.8 million in Public Assistance (PA) and $154 million in Individual Assistance (IA), as of December 2024.[b] Further, from fiscal years 2014 through 2024, FEMA obligated about $10.8 million for 64 tornado mitigation projects.

Locations of FEMA-funded safe room and siren projects, Fiscal Years 2014-2024[a]



Damage to Greenfield Fire Department building from May 2024 tornado, 3 weeks later.
Source: GAO analysis of FEMA data, U.S. Census Bureau (map); GAO photo. | GAO-25-107384

FEMA IA and PA obligations for tornado-related major disasters, by year of declaration[c]



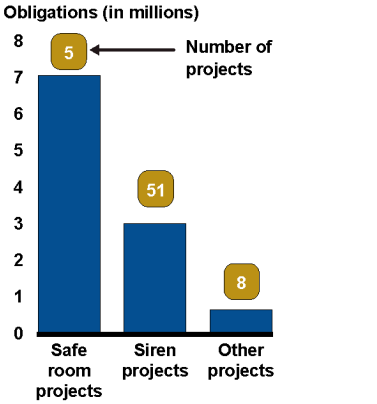
Source: GAO analysis of FEMA data. | GAO-25-107384

FEMA IA and PA obligations and counties included in declaration

Disaster number (incident date)		Number of counties that received PA	Total dollars obligated in PA	Number of counties that received IA	Total dollars obligated in IA
DR-4642	*(Dec 2021)*	25	$6,476,239	0	0
DR-4779	*(April 2024)*	7	$410,920	8	$1,527,000
DR-4784	*(May 2024)*	29	$489,800	7	$8,523,000
DR-4796	*(June/July 2024)*	29	$464,458	16	$144,445,741

Source: GAO analysis of FEMA data. | GAO-25-107384

FEMA obligations for tornado mitigation projects, FY 2014-2024[a]



Source: GAO analysis of FEMA data. | GAO-25-107384

Note: Obligated amounts may change over time. For example, FEMA may continue to make obligations for these disasters in future years, and FEMA may also deobligate amounts, especially at the end of the grants process.

[a]Safe room and siren projects include any projects where a safe room or siren was a component. This includes grants to states to operate residential safe room programs. Obligations for safe room and siren projects include the following FEMA grant programs: Building Resilient Infrastructure and Communities (BRIC), Hazard Mitigation Grant Program, Pre-Disaster Mitigation program, and Pre-Disaster Mitigation Congressionally Directed Spending. Other projects are tornado mitigation projects not including a safe room or siren. Obligations for these projects include BRIC and Hazard Mitigation Grant Program. For more information, see appendix I.

[b]Based on data reliability assessments from previous GAO reviews, we limited our analysis of Individual Assistance data to one of its component programs, the Individuals and Households Program.

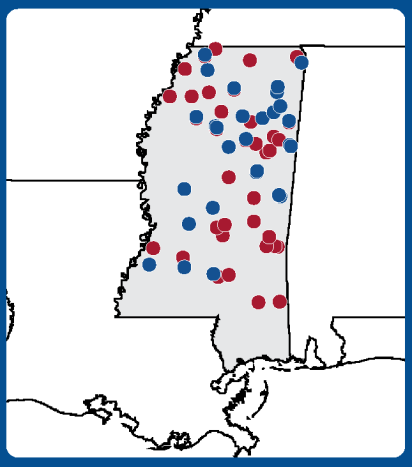
[c]Obligations are based on the fiscal year that the disaster was declared in.

Mississippi:

Federal Emergency Management Agency (FEMA) assistance for tornado mitigation and recovery efforts

Across the nine tornado-related major disaster declarations in Mississippi from fiscal years 2019 through 2024, FEMA obligated about $171 million in Public Assistance (PA) and $62.9 million in Individual Assistance (IA), as of December 2024.[b] Further, from fiscal years 2014 through 2024, FEMA obligated about $14.6 million for 102 tornado mitigation projects.

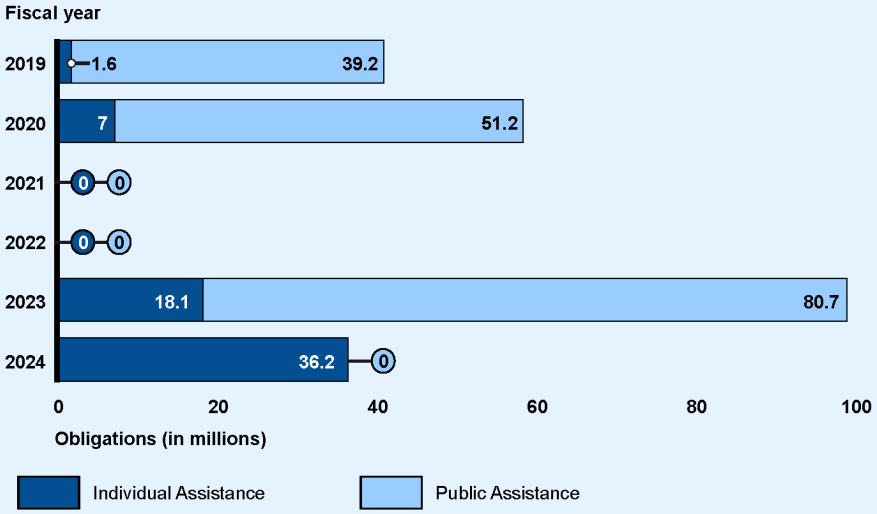
Locations of FEMA-funded safe room and siren projects, Fiscal Years 2014-2024[a]



Damage from the March 2023 Rolling Fork tornado 14 months later.

Source: GAO analysis of FEMA data, U.S. Census Bureau (map); GAO photo. | GAO-25-107384

FEMA IA and PA obligations for tornado-related major disasters, by year of declaration[c]



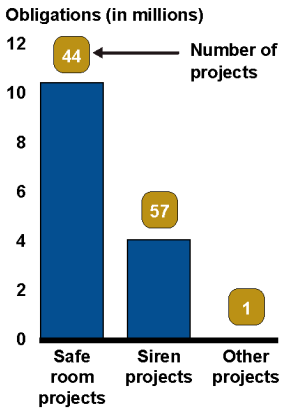
Source: GAO analysis of FEMA data. | GAO-25-107384

FEMA IA and PA obligations and counties included in declaration

Disaster number	(incident date)	Number of counties that received PA	Total dollars obligated in PA	Number of counties that received IA	Total dollars obligated in IA
DR-4415	*(Dec. 2018)*	11	$6,453,698	0	0
DR-4429	*(Feb. 2019)*	29	$27,858,640	8	$1,580,301
DR-4450	*(April 2019)*	9	$4,871,678	0	0
DR-4478	*(Jan. 2020)*	13	$8,078,563	0	0
DR-4536	*(April 2020)*	29	$34,358,402	9	$7,013,363
DR-4551	*(April 2020)*	11	$8,718,624	0	0
DR-4697	*(March 2023)*	7	$71,135,851	6	$13,997,848
DR-4727	*(June 2023)*	30	$9,544,250	2	$4,109,402
DR-4790	*(April 2024)*	0	N/A	6	$36,230,466

Source: GAO analysis of FEMA data. | GAO-25-107384

FEMA obligations for tornado mitigation projects, FY 2014-2024[a]



Source: GAO analysis of FEMA data. | GAO-25-107384

Note: Obligated amounts may change over time. For example, FEMA may continue to make obligations for these disasters in future years, and FEMA may also deobligate amounts, especially at the end of the grants process.

[a]Safe room and siren projects include any projects where a safe room or siren was a component. This includes grants to states to operate residential safe room programs. Obligations for safe room and siren projects include the following FEMA grant programs: Building Resilient Infrastructure and Communities (BRIC), Hazard Mitigation Grant Program, Pre-Disaster Mitigation program, and Pre-Disaster Mitigation Congressionally Directed Spending. Other projects are tornado mitigation projects not including a safe room or siren. Obligations for these projects include BRIC and Hazard Mitigation Grant Program. For more information, see appendix I.

[b]Based on data reliability assessments from previous GAO reviews, we limited our analysis of Individual Assistance data to one of its component programs, the Individuals and Households Program.

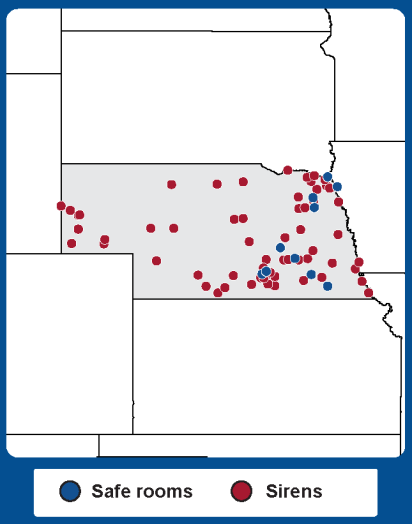
[c]Obligations are based on the fiscal year that the disaster was declared in.

Nebraska:

Federal Emergency Management Agency (FEMA) assistance for tornado mitigation and recovery efforts

Across the four tornado-related major disaster declarations in Nebraska from fiscal years 2019 through 2024, FEMA obligated about $9.5 million in Public Assistance (PA) and $960,000 in Individual Assistance (IA), as of December 2024.[b] Further, from fiscal years 2014 through 2024, FEMA obligated about $7.5 million for 77 tornado mitigation projects.

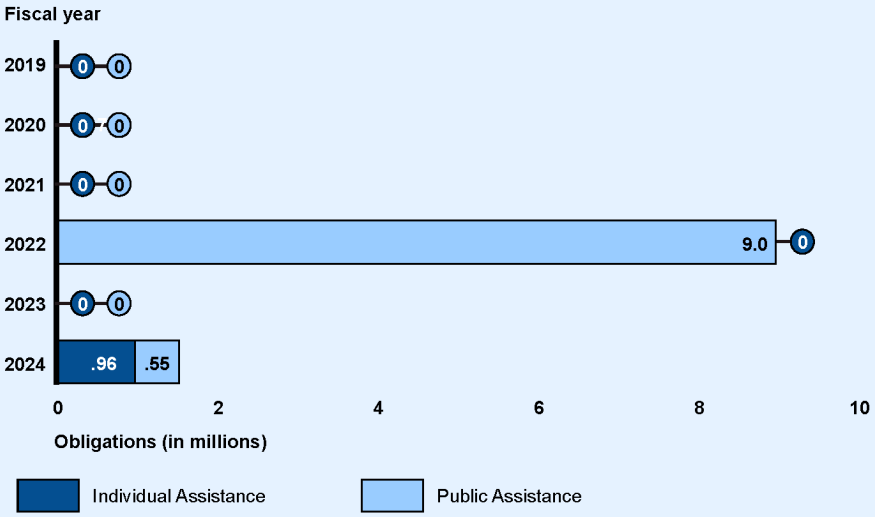
Locations of FEMA-funded safe room and siren projects, Fiscal Years 2014-2024[a]



Damage to a home in Elkhorn from April 2024 tornado, 7 weeks later.

Source: GAO analysis of FEMA data, U.S. Census Bureau (map); GAO photo. | GAO-25-107384

FEMA IA and PA obligations for tornado-related major disasters, by year of declaration[c]



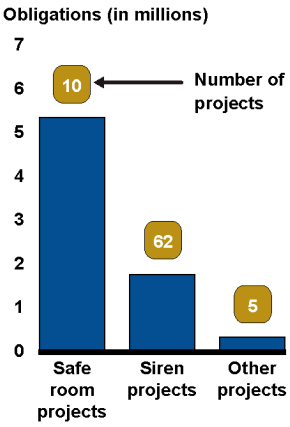
Source: GAO analysis of FEMA data. | GAO-25-107384

FEMA IA and PA obligations and counties included in declaration

Disaster number	(incident date)	Number of counties that received PA	Total dollars obligated in PA	Number of counties that received IA	Total dollars obligated in IA
DR-4641	*(Dec 2021)*	25	$8,952,644	0	0
DR-4778	*(April 2024)*	6	$548,282	2	$960,000
DR-4808	*(May/ June 2024)*	19	$0	0	0
DR-4822	*(June/July 2024)*	17	$0	0	0

Source: GAO analysis of FEMA data. | GAO-25-107384

FEMA obligations for tornado mitigation projects, FY 2014-2024[a]



Source: GAO analysis of FEMA data. | GAO-25-107384

Note: Obligated amounts may change over time. For example, FEMA may continue to make obligations for these disasters in future years, and FEMA may also deobligate amounts, especially at the end of the grants process.

[a]Safe room and siren projects include any projects where a safe room or siren was a component. This includes grants to states to operate residential safe room programs. Obligations for safe room and siren projects include the following FEMA grant programs: Building Resilient Infrastructure and Communities (BRIC), Hazard Mitigation Grant Program, Pre-Disaster Mitigation program, and Pre-Disaster Mitigation Congressionally Directed Spending. Other projects are tornado mitigation projects not including a safe room or siren. Obligations for these projects include BRIC and Hazard Mitigation Grant Program. For more information, see appendix I.

[b]Based on data reliability assessments from previous GAO reviews, we limited our analysis of Individual Assistance data to one of its component programs, the Individuals and Households Program.

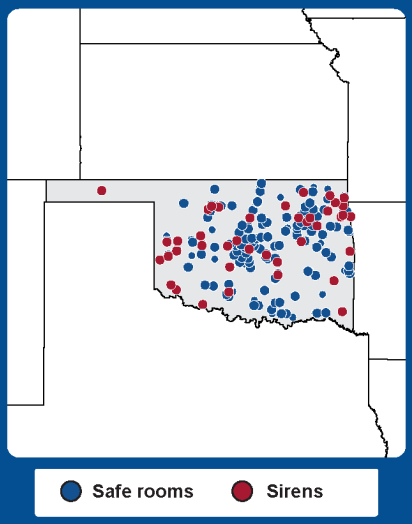
[c]Obligations are based on the fiscal year that the disaster was declared in.

Oklahoma:

Federal Emergency Management Agency (FEMA) assistance for tornado mitigation and recovery efforts

Across the nine tornado-related major disaster declarations in Oklahoma from fiscal years 2019 through 2024, FEMA obligated about $128 million in Public Assistance (PA) and $37 million in Individual Assistance (IA), as of December 2024.[b] Further, from fiscal years 2014 through 2024, FEMA obligated about $52.4 million for 153 tornado mitigation projects.

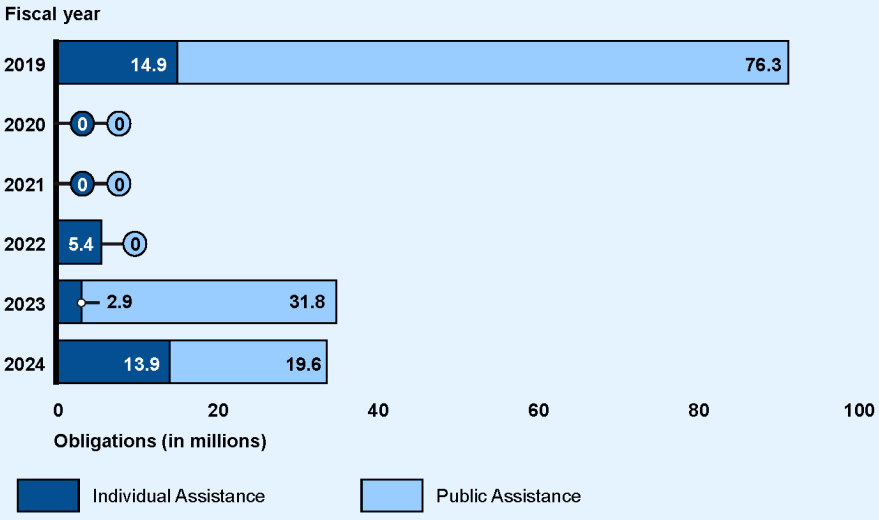
Locations of FEMA-funded safe room and siren projects, Fiscal Years 2014-2024[a]



Damage from an April 2024 tornado to Sulphur's historic downtown, 5 months later.

Source: GAO analysis of FEMA data, U.S. Census Bureau (map); GAO photo. | GAO-25-107384

FEMA IA and PA obligations for tornado-related major disasters, by year of declaration[c]



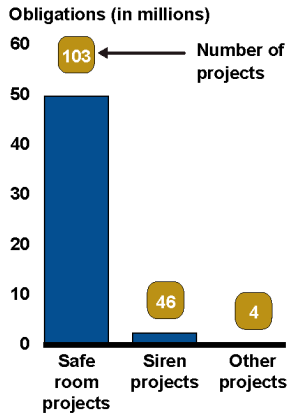
Source: GAO analysis of FEMA data. | GAO-25-107384

FEMA IA and PA obligations and counties included in declaration

Disaster number	(incident date)	Number of counties that received PA	Total dollars obligated in PA	Number of counties that received IA	Total dollars obligated in IA
DR-4438	*(May 2019)*	51	$65,854,673	27	$14,851,683
DR-4453	*(April/May 2019)*	19	$3,880,462	0	0
DR-4456	*(May/June 2019)*	One Tribe	$6,543,056	0	0
DR-4657	*(May 2022)*	0	$0	7	$5,399,078
DR-4670	*(May 2022)*	One Tribe	$0	0	0
DR-4706	*(April 2023)*	2	$11,004,561	3	$2,932,986
DR-4721	*(June 2023)*	25	$20,758,123	0	0
DR-4776	*(April/May 2024)*	19	$15,494,397	18	$10,570,000
DR-4791	*(May 2024)*	9	$4,093,461	8	$3,341,000

Source: GAO analysis of FEMA data. | GAO-25-107384

FEMA obligations for tornado mitigation projects, FY 2014-2024[a]



Source: GAO analysis of FEMA data. | GAO-25-107384

Note: Obligated amounts may change over time. For example, FEMA may continue to make obligations for these disasters in future years, and FEMA may also deobligate amounts, especially at the end of the grants process.

[a]Safe room and siren projects include any projects where a safe room or siren was a component. This includes grants to states to operate residential safe room programs. Obligations for safe room and siren projects include the following FEMA grant programs: Building Resilient Infrastructure and Communities (BRIC), Hazard Mitigation Grant Program, Pre-Disaster Mitigation program, and Pre-Disaster Mitigation Congressionally Directed Spending. Other projects are tornado mitigation projects not including a safe room or siren. Obligations for these projects include BRIC and Hazard Mitigation Grant Program. For more information, see appendix I.

[b]Based on data reliability assessments from previous GAO reviews, we limited our analysis of Individual Assistance data to one of its component programs, the Individuals and Households Program.

[c]Obligations are based on the fiscal year that the disaster was declared in.

Appendix II: Objectives, Scope, and Methodology

This report examines (1) the extent to which the Federal Emergency Management Agency (FEMA) and the National Institute of Standards and Technology (NIST) have helped communities mitigate the effects of tornadoes; (2) how emergency alert systems are used to warn residents about tornadoes, and what tribal, state, and local officials report are their alerting needs; and (3) actions FEMA has taken to help communities respond to and recover from tornadoes, and the extent to which FEMA has addressed communities' needs.

To address all objectives, we interviewed emergency management officials from a non-generalizable sample of five states, seven counties, and two Tribes that were impacted by tornadoes during this period.[1] We selected these jurisdictions to obtain a variety of perspectives based on factors such as the FEMA region the state is located in, racial demographics and socioeconomic status of the county, and the recency of a tornado-related disaster declaration. We interviewed officials from five states: Iowa, Michigan, Mississippi, Nebraska, and Oklahoma.[2] We also conducted site visits to the two Tribes selected. Lastly, we spoke with one national organization representing emergency management officials, the National Emergency Management Association and an organization representing tribal emergency management officials.[3] Information from all of these interviews is not generalizable.

To evaluate the extent to which FEMA and NIST helped communities mitigate the effects of tornadoes, we analyzed data on tornado mitigation

[1]We interviewed emergency management officials from two counties in Mississippi and Oklahoma, and one county each in Iowa, Michigan, and Nebraska. We interviewed officials from Tribes located in two of the states we visited.

[2]We conducted in-person site visits to Iowa, Mississippi, Nebraska and Oklahoma and met virtually with Michigan officials.

[3]The National Emergency Management Association is the professional association for emergency management directors from all 50 states, eight U.S. territories, and the District of Columbia. The association aims to enhance public safety by improving the nation's ability to prepare for, respond to, and recover from emergencies, disasters, and threats to national security. Through the National Emergency Management Association, we obtained perspectives on tornado-related disasters from state emergency management officials in Alabama, Illinois, Kansas, and Ohio.

projects for which FEMA obligated funding.[4] This included mitigation grant program data for fiscal years 2014 to 2024.[5] We also analyzed Emergency Management Performance Grant program data for fiscal years 2014 through 2023, as of September 2024, in order to describe grant amounts that states distributed for preparedness for all hazards, including to Tribes. To assess the reliability of the mitigation and preparedness program data, we conducted electronic data testing, reviewed database documentation, and interviewed knowledgeable agency officials about the processes for collecting and maintaining these data. We found the data to be sufficiently reliable for the purpose of presenting the number of projects, locations, and amounts obligated.

We interviewed a nongeneralizable sample of tribal, state, and county emergency management officials, as well as the membership organizations mentioned above, to learn about communities' efforts to mitigate against tornadoes and their experience accessing federal mitigation resources. We interviewed FEMA and NIST headquarters officials about the agencies' efforts to help communities mitigate against tornadoes and their perspectives on tornado mitigation challenges communities identified.[6]

[4]Safe room and siren projects include any projects where a safe room or siren was a component, or that supplemented or supported the functioning of a safe room or siren system. FEMA funding obligations we reported for these projects include those for the following grant programs: Building Resilient Infrastructure and Communities (BRIC) for fiscal years 2020 through 2023, Hazard Mitigation Grant Program for fiscal years 2014 through 2024, Pre-Disaster Mitigation program for fiscal years 2014 through 2019, and Pre-Disaster Mitigation Congressionally Directed Spending for fiscal years 2022 through 2024. The "other projects" category included all tornado mitigation projects that did not involve safe rooms or sirens. Obligations for other projects include those for BRIC and Hazard Mitigation Grant Program. For these programs applicants identify which hazard they plan to mitigate against, including tornadoes. Specifically, our BRIC analysis included projects for which the applicant selected "tornado" as a primary, secondary, or tertiary hazard. For the Hazard Mitigation Grant Program, our analysis included projects for which the applicant selected tornado as the primary hazard type. For both programs, we then excluded projects that were related to safe rooms or sirens to identify other tornado-related mitigation projects.

[5]Tornado mitigation data for all four programs was as of November 2024, except for Hazard Mitigation Grant Program data for the "other projects" category, which was as of January 2025. Final funding obligations for these programs may vary as some applications and projects were in process at the time of our data request.

[6]We interviewed FEMA officials from various program offices about the challenges communities face mitigating against tornadoes and accessing FEMA mitigation and preparedness resources. This included officials from FEMA's Hazard Mitigation Assistance and Tribal Affairs offices, as well as FEMA's Grants Programs Directorate.

We compared FEMA's efforts to address challenges identified by tribal, state, and county emergency management officials against FEMA strategy and policy documents. This included its Tribal Policy and Tribal Strategy, for example.[7] Finally, we reviewed the agencies' guidance documents and reports to describe agency efforts to help communities mitigate against tornadoes and to support development of building codes.

To understand how emergency alert systems are used to warn residents about tornadoes and tribal, state, and local officials' alerting needs, we reviewed FEMA and National Oceanic and Atmospheric Administration documentation on tornado alerting. We interviewed officials from our nongeneralizable sample of Tribes, states, and counties about how they alert their residents about tornadoes and their needs from the federal government for tornado alerting. We also interviewed officials from the National Weather Service Storm Prediction Center and Norman Weather Forecast Office about their roles in alerting. Finally, we interviewed officials from FEMA's Integrated Public Alert and Warning System office about its role in tornado alerting.

To evaluate actions FEMA has taken to help communities respond to and recover from tornadoes and the extent to which FEMA has addressed communities' needs, we analyzed data from FEMA's Individual Assistance and Public Assistance. Specifically, we analyzed the number of tornado-related major disaster declarations from fiscal years 2019 through 2024 and funding obligated for each major disaster declaration by program and project type.[8] To assess the reliability of these data, we reviewed database documentation and interviewed knowledgeable agency officials about the processes for collecting and maintaining these data. Based on these steps, we determined the data to be sufficiently reliable for describing the number of tornado-related major disaster declarations, amount obligated for each program, and types of projects funded under Public Assistance.

We also interviewed FEMA officials to understand their efforts to address tribal, state, and local needs. We also conducted interviews with FEMA's Office of Response and Recovery and officials at the regional level to

[7]FEMA, *FEMA Tribal Policy (Rev. 2),* FEMA Policy #305-111-1 (Dec. 2020) and FEMA, *2022-2026 FEMA National Tribal Strategy,* (Washington, D.C.: Aug. 2022).

[8]Based on data reliability assessments from previous GAO reviews, we limited our analysis of Individual Assistance data to one of its component programs, the Individuals and Households Program.

gain their perspective on challenges experienced by Tribes states, and counties. We reviewed relevant FEMA documentation and evaluated FEMA's efforts against FEMA's core values, the Standards for Internal Control in the Federal Government and the Plain Writing Act of 2010.[9]

We conducted this performance audit from February 2024 to September 2025 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

[9]FEMA, Publication 1 (Washington, D.C.: 2019), GAO, *Standards for Internal Control in the Federal Government*, GAO-14-704G (Washington, D.C.: Sept. 10, 2014) and Pub. L. No. 111-274, 124 Stat. 2861.

Appendix III: Comments from the Department of Homeland Security

U.S. Department of Homeland Security
Washington, DC 20528

Homeland Security

BY ELECTRONIC SUBMISSION

August 18, 2025

Chris P. Currie
Director, Homeland Security and Justice
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Re: Management Response to GAO-25-107384, "TORNADOES: Agencies Promote Resilience but Actions Needed to Improve Access to FEMA Assistance"

Dear Mr. Currie:

Thank you for the opportunity to comment on this draft report. The U.S. Department of Homeland Security (DHS, or the Department) appreciates the U.S. Government Accountability Office's (GAO) work in planning and conducting its review and issuing this report.

DHS leadership is pleased to note GAO's recognition that the Federal Emergency Management Agency (FEMA) acknowledged concerns from state emergency management offices regarding the difficulty of calculating a benefit-cost analysis for siren systems, and that FEMA allows Hazard Mitigation Grant Program applicants to forgo a formal analysis under certain conditions. For example, the Five Percent Initiative allows applicants to provide a narrative description instead of a formal benefit-cost for projects representing up to 5 percent of their award. DHS remains committed to strengthening access to FEMA assistance and promoting resilience to future disasters.

The draft report contained three recommendations with which the Department concurs. Enclosed find our detailed response to each recommendation. DHS previously submitted technical comments addressing several accuracy, contextual, and other issues under a separate cover for GAO's consideration, as appropriate.

Again, thank you for the opportunity to review and comment on this draft report. Please feel free to contact me if you have any questions. We look forward to working with you again in the future.

Sincerely,

JEFFREY M BOBICH

Digitally signed by JEFFREY M BOBICH
Date: 2025.08.18 09:34:12 -04'00'

JEFFREY M. BOBICH
Director of Financial Management

Enclosure

Enclosure: Management Response to Recommendations Contained in GAO-25-107384

GAO recommended that the FEMA Administrator:

Recommendation 1: Identify Tribal Nations' needs for emergency management capacity building, including the extent to which any identified needs are being met. After completing the study, the FEMA Administrator should outline steps the agency plans to take, with timeframes, to address any findings.

Response: Concur. FEMA's National Preparedness Directorate (NPD), in collaboration with Argonne National Laboratory and partner emergency management associations, is currently conducting the "Emergency Management Organizational Structures, Staffing, and Capacity Study." This study, launched in August 2024, is intended to provide a comprehensive picture of state, local, territorial, and Tribal Nation emergency management organizations across the nation, the needs they face, their structures and staffing levels, funding sources, top challenges, and how staff time is focused across the spectrum of emergency management activities. Insights related to Tribal Nations are anticipated to be available by the end of January 2026. Once complete, the NPD will outline steps the agency plans to take, with timeframes, to address any findings as appropriate. Estimated completion date (ECD): February 27, 2026.

Recommendation 2: In coordination with the Small State and Rural Advocate, identify and implement ways to improve flexibility in Public Assistance program guidance for small states and rural communities.

Response: Concur. FEMA's Public Assistance (PA) Division, in coordination with the Small State and Rural Advocate, will review current PA guidance and identify targeted flexibilities that address the unique capacity constraints and geographic isolation of small states and rural communities. This effort will include evaluating streamlined processes, simplified documentation requirements, and scalable thresholds for PA eligibility and project formulation to ensure effective and timely disaster recovery support. ECD: August 31, 2026.

Recommendation 3: Identify and implement strategies to ensure Public Assistance Program Delivery Managers [PDMG] are knowledgeable of program policies and consistently apply them when providing support to Tribal Nations, states, and localities.

Response: Concur. PDMGs at FEMA undergo rigorous training to learn PA policies and consistently apply them when supporting state, local, tribal, and territorial partners. Currently, this includes formal coursework, hands-on training, continuous learning through refresher courses and webinars, and mentorship. This comprehensive training

enables PDMGs to effectively manage Public Assistance grants and provide reliable support to state, local, tribal, and territorial partners. Further, FEMA took several recent actions to improve the PDMG role such as:

- Initiating a PDMG Assessment in 2024 to review the roles and responsibilities of the PDMG position and identify opportunities for the PDMG position to add greater value to recovery operations and more readily meet mission requirements and customer needs.
- Issuing a memorandum, "Public Assistance Phase II Efficiencies," dated May 8, 2025, which empowers PDMGs to conduct site inspections and provides them with appropriate mentors and training in this activity.
- Issuing a memorandum "Preventing Project Formulation Delays Due to PDMG Turnover," dated June 2, 2025, to reinforce the importance of PDMG continuity and minimizing disruptions during unavoidable PDMG transitions.
- Updating the Position Task Book (PTB)[1] for PDMGs on July 21, 2025 with 24 additional tasks, bringing the total to 57 tasks in the PDMG PTB aligned with the current performance and role of the PDMG in the Public Assistance program. Among these new tasks are included four tasks that emphasize the importance of complete and concise documentation, as well as transitions prior to demobilizations.

FEMA's PA Division will also take the further following action to ensure PDMGs are knowledgeable of program policies:

- Update and promulgate the PDMG Position Task Book to include four new tasks that emphasize the critical importance of complete and concise documentation, as well as the implementation of strategically planned transition reporting prior to demobilization; and
- Update the PA PDMG Job Aid to include the Project Development Plan Template.

ECD: December 31, 2025.

[1] PTB documents the performance criteria a trainee must meet to be certified for a position within the National Qualification system.

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Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

Chris Currie, curriec@gao.gov.

Staff Acknowledgments

In addition to the contact named above, Aditi Archer (Assistant Director), Daniel Kuhn (Analyst-in-Charge), Justine D'Souza, Breana Stevens, Benjamin Crossley, Tracey King, Amanda Miller, Kevin Reeves, Jim Rice, and Robert Letzler made key contributions to this report.