

Natural Disaster State Policy Recommendations

NCSL Public Private Partnership on Disaster Mitigation and Recovery



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NCSL Foundation Partnership on Disaster Mitigation and Recovery	iv
2021 Policy Recommendations	1
Disaster Funding	3
State Spending.....	xx
Federal Spending.....	xx
State Disaster Policy Reform	x
Interstate Mutual Aid	x
Private Sector and Nonprofit Solutions	x
Conclusion	x

The National Conference of State Legislatures is the bipartisan organization dedicated to serving the lawmakers and staffs of the nation’s 50 states, its commonwealths and territories.

NCSL provides research, technical assistance and opportunities for policymakers to exchange ideas on the most pressing state issues, and is an effective and respected advocate for the interests of the states in the American federal system. Its objectives are:

- Improve the quality and effectiveness of state legislatures.
- Promote policy innovation and communication among state legislatures.
- Ensure state legislatures a strong, cohesive voice in the federal system.

The conference operates from offices in Denver, Colorado and Washington, D.C.

NCSL Foundation Partnership on Disaster Mitigation and Recovery

The partnership was established in the wake of the 2017 disaster season, which highlighted both challenges and opportunities within intergovernmental coordination, public policy, and the role of the private sector in emergency management.

The partnership brings state legislators representing disaster-affected districts, or serving as their chamber's public safety chairs, together with expert legislative staff and private sector partners to explore disaster policy solutions. The steering committee's in-person and virtual convenings have informed the contents of this policy brief. The content within is a product of NCSL and does not necessarily reflect the position of our partnering organizations.

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2021 Policy Recommendations

As natural disasters increase in frequency and intensity, state policy will continue to be at the center of future solutions. Disaster seasons of the last few years have broken records across the board. Hurricanes Harvey, Irma, Maria and over a dozen others made 2017 the costliest hurricane season on [record](#); 2018 became the nation's deadliest and most destructive [wildfire season](#); and 2020 featured [megafires](#) unlike anything the nation has seen. According to the [National Oceanic and Atmospheric Administration](#) (NOAA), the nation averaged nearly 12 "billion-dollar" disasters annually over the past decade—up from less than five per year between 1980 and 2009. Total damages over the past five years exceeded \$525 billion—an annual average of around \$106 billion.

Covering the high cost of disasters must involve coordination between the federal government, state governments, and private sector alike. State legislatures play an important [role](#) within that framework. Not only do state legislatures appropriate billions to finance disaster recovery, they also have the opportunity to reform their emergency management frameworks, promote cross-sector collaboration, and incentivize mitigation activities. Despite the ongoing challenge of balancing competing priorities for limited funding within state budgets—enhanced by historic pandemic-induced budget shortfalls—over two-thirds of states [enacted](#) at least 95 bills last year appropriating funds for resilience activities.

State officials face increased pressure amid federal policy changes and worsening disaster seasons. Since 2017, the federal government has placed an increased emphasis on the state and local role in disaster management. The Federal Emergency Management Agency (FEMA) has long held that disasters are "locally executed, state managed, and federally supported," in that order, putting state and local governments ahead of the federal response. In the fall of 2018, Congress enacted the Disaster Recovery Reform Act (DRRA)—widely considered the most comprehensive disaster reform bill since Hurricane Katrina. FEMA has issued a proposed rule mandated by the DRRA that would raise the [Per Capita Impact Indicator](#), making it more difficult for jurisdictions to receive disaster declarations and access federal assistance under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act). Disaster grants have long required states to cover a certain percentage of the cost, commonly ranging from 25% to 50%.

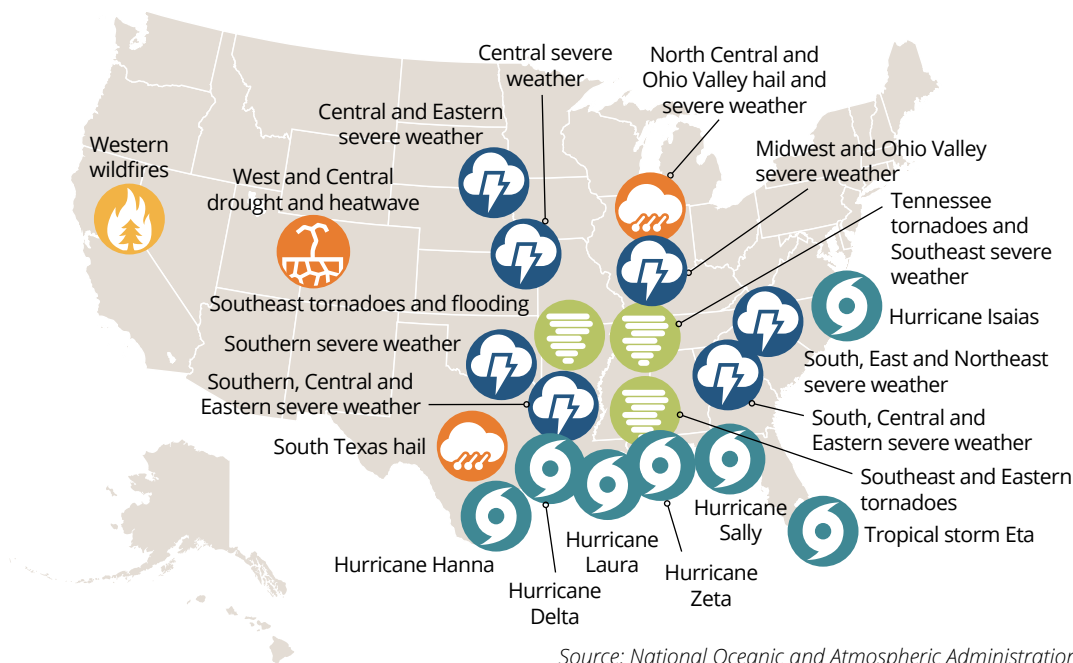
In this context, NCSL's Public Private Partnership on Disaster Mitigation and Recovery offers the following best practices and policy recommendations for consideration by state legislatures. While the COVID-19 pandemic has become preeminent national emergency of the past year, these best practices focus on natural disasters in non-pandemic contexts.

- **Disaster Funding.** While legislatures must balance competing priorities for limited funding, tracking disaster spending, innovative funding mechanisms, rainy day fund allocations, and leveraging certain federal funds can improve state spending capacity.
- **Disaster Policy Reform.** States can reform their disaster management systems through policies emphasizing disaster mitigation, infrastructure resilience, and administrative or personnel changes. Mitigation measures in particular—such as building code improvements, natural barriers, land use and development practices—have proven to reduce disaster damage costs in communities amounting to many times the initial investment.
- **Interstate mutual aid.** National and regional networks for interstate mutual aid such as the Emergency Management Assistance Compact (EMAC) and the Interstate Civil Defense and Disaster Compact (ICDDC) provide states an opportunity to support each other in tandem with federal and private sources of assistance.
- **Private and Non-Profit Sector Role.** The private sector owns and operates a vast majority of the nation's critical infrastructure, so partnerships between the public and private sectors that foster integrated, collaborative engagement and interaction are essential to maintaining critical infrastructure security and resilience. The private sector provides a unique source of financial support and technical expertise that does not rely on limited public funding. States can and should take steps to formalize this role and institutionalize the involvement of private non-profit sector organizations in their respective resilience and mitigation planning efforts.

At a time when federal spending is uncertain and disaster risk rising, states can support their own disaster management and resilience activities via innovative funding mechanisms, embracing mitigation measures, interstate mutual aid agreements, and increased coordination with private sector.

2020 Billion-dollar Weather and Climate Disasters

By approximate location.



THREATS BY LOCATION: State legislatures across the nation are facing diverse and growing risks from natural hazards.

Disaster Funding

In light of the shifting landscape of federal disaster assistance, states could take steps to better understand what they are spending on disaster-related costs—including mitigation—and consider whether it makes sense to adjust their approach. While states may have more immediate competing legislative priorities, quantifying and planning for these expenses will save money in the long run, expedite future recovery and make states more competitive for limited federal funding. States could also advocate for improvements in federal funding mechanisms.

State Spending

RECOMMENDATION: Track disaster spending.

Tracking spending is key to managing state resources, uncovering inefficiencies, identifying opportunities for savings or alternative investments with a greater return on investment, and keeping tabs on federal funding streams. [Research](#) has shown that most states do not comprehensively track their spending on disasters across the agencies involved at all the phases of disaster—response, recovery, preparedness, and particularly mitigation. Without accurate documentation of the millions—or even [billions](#)—of dollars states spend on disaster assistance, states are not demonstrating the full fiscal burden of disasters on state budgets, nor are they identifying ways to direct resources toward cost-saving mitigation measures. State legislatures should consider policy creating the structure to track and report on that spending by:

- Initiating a study committee on disaster spending.
- Holding committee hearings to identify and hear from state entities that oversee the use of funds.
 - Inquire about the need for staff positions or new offices to oversee reporting on the amount and use of funds.
 - Inquire about strain on existing programs, supplemental funding, and other possible disaster-related drains on state resources that may not be immediately apparent.
- Adding reporting requirements for agencies of jurisdiction and to major disaster recovery spending packages or budget bills.
 - For example, Colorado recently passed HB20-1426 requiring Office of State Planning and Budgeting to make quarterly reports to the legislature detailing expenditures from disaster emergency fund. Reports designate the disaster in question, detail account transfers, and specify agencies that received funding.
 - North Carolina Office of Recovery and Resiliency's (NCORR) 2019 report found that the state could benefit from expanding the scope and detail of their reporting requirements to include performance measures. This would ensure the General Assembly had an adequate representation of disaster recovery spending and implementation.
- Assessing how fiscal notes could be used or improved in tracking spending totals.

RECOMMENDATION: Consider innovative mechanisms for funding disasters.

State budgets are consistently stretched thin with competing priorities, which can make it challenging to prioritize preemptively setting aside funding to pay for disaster costs and mitigation. Rainy day [funds](#) and emergency accounts are only some of the [budgeting mechanisms](#) states can use to pay for disasters, and funding increases can work in tandem with other sources of aid and financial innovations. State legislatures could assess how they allocate money for disaster relief and pre-disaster mitigation, compare what they budget to their actual spending, understand how they use fund account transfer authorities and supplemental appropriations after a disaster, and explore other financial tools. States could consider policy that:

- Assesses the budgeting methods used to pay for disasters—the five most common mechanisms include statewide disaster accounts, rainy day funds, supplemental appropriations, transfer authority, and state agency [budgets](#).
 - States can set aside funds for future disasters using statewide disaster accounts and rainy-day funds.
 - States can allocate funds during disaster response and recovery stages via supplemental appropriations and transfer authority.
 - State agency budgets provide disaster funding at any stage.
- Increases allocations to disaster accounts or rainy-day funds specifically earmarked for response and recovery activities (see NCSL [research](#)).
- Creates a targeted disaster account that, where possible, blend funding from multiple levels of government to accelerate existing state disaster resilience programs. For example, the [Hurricane Harvey After Action Report](#) features policy recommendations on Business Advisory Councils and innovative public funding mechanisms—specifically, the use of federal funds to advance state housing buyback programs ahead of the next hurricane season, to eventually be funded by state, city, and county resources.
- Establishes funding [mechanisms](#) that go beyond state appropriations such as:
 - Environmental impact bonds.
 - Long-term, low-interest disaster recovery loans.
 - Mitigation revolving loan fund programs – these can provide a sustainable source of funding for localities to execute disaster projects.
 - Tax credits or breaks to incentivize disaster planning.
 - Fee-funded programs.



RECOMMENDATION: Improve coordination with federal assistance programs.

States can save money and accelerate recovery by taking steps to understand and better coordinate with federal assistance programs and personnel. Federal grants can have complicated and restrictive requirements and timelines for aid, which if misunderstood can lead to missed opportunities for federal awards, de-obligation of funds, and disbursement delays. Adjustments to state agency staffing and expertise can allow states to more efficiently and effectively navigate complicated federal grants procedures. For example, North Carolina General Assembly's Program Evaluation Division issued a 2019 [report](#) detailing \$3.7 million in unnecessary state spending for Hurricane Matthew recovery. It [recommended](#) organizational improvements to the North Carolina Office of Recovery and Resiliency (NCORR) to facilitate cost savings and efficiency. To this end, states could:

- Increase communication with state emergency management officials with jurisdiction over disaster recovery and federal grants via legislative oversight hearings and their legislative liaisons.
- Consider policy that:
 - o Appropriates funding for sufficient permanent staffing to foster effective program implementation and institutional knowledge within key state government agencies (Emergency Management Offices, Resilience Offices, Dept of Public Safety, etc).
 - o Ensures expertise in state emergency management hiring by elevating and restructuring job qualifications to include minimum years of experience or key credentials.
 - o Ensures contracts for disaster recovery projects are compliant for the given federal grant.
 - o Requires agencies to identify when federal funds can be put toward a state match and notify relevant entities.



CLOSER LOOK:

NORTH CAROLINA OFFICE OF RECOVERY AND RESILIENCY

The North Carolina General Assembly created the North Carolina Office of Recovery and Resiliency (NCORR) via legislation in 2018 to coordinate disaster recovery efforts among various entities. The NCORR then named Jessica Whitehead the state's chief resilience officer in 2019. The General Assembly's Program Evaluation Division issued a 2019 [report](#) providing recommendations for improvement in the wake of Hurricane Matthew's devastation in 2016. The report detailed \$3.7 million in unnecessary state spending for Hurricane Matthew recovery. It [recommended](#) organizational improvements to NCORR to facilitate cost savings and efficiency. The Division recommended the General Assembly pass legislation that would:

- Require the Department of Public Safety (DPS) to establish mechanisms to ensure future CDBG-DR contracts are HUD-compliant, develop standardized performance metrics, and notify various entities when CDBG-DR might be used for matching purposes.
- Consider a core number of DPS staff as permanent employees (rather than time-limited).
- Modify DPS's statutory reporting requirements.

The report also concluded that information reported to the General Assembly on disaster recovery did not focus on performance metrics or allow for comparison and identification of areas needing improvement—a reality that previously hampered possible disaster reform. The General Assembly since passed legislation implementing the recommendations.

The NCORR served as a model for other states, including West Virginia, which created their own State Resilience Office (SRO) via the [State Resiliency and Flood Protection Plan Act](#) in 2020. West Virginia's Joint Committee on Flooding was established following a 500-year flood in 2016, and one of their very first acts was to advance legislation creating the state's first state resilience officer (SRO). Before the creation of the Joint Committee on Flooding, legislative oversight of 2016 CDBG-DR funds disbursement initially fell to the legislature's finance committees. After the state was deemed a "slow spender" by the U.S. Department of Housing and Urban Development, the Joint Committee on Flooding was able to integrate approaches from other states—North Carolina, as well as Iowa, Rhode Island, South Carolina, and others—to create the SRO and manage federal disaster funds. In this and many other ways, the Joint Committee on Flooding has streamlined disaster and emergency legislation in West Virginia. The committee has since considered a broad array of disaster resilience measures covering disaster debris removal, disaster mitigation, management and disbursement of federal funds, interstate tax exemption issues (when disaster response personnel enter the state), and even matters relating to management of the COVID-19 pandemic.

- o Establishes reporting requirements for key state agencies and ensure they are informed by federal requirements.
- o Establishes a Chief Resiliency Officer (CRO) position within state government, tasked with coordinating across departments, leveraging federal disaster resources, engaging a wide variety of stakeholders, and leading resilience strategy implementation.
 - A growing trend, nearly a dozen states have created CRO positions in recent years: Colorado, Florida, Louisiana, New Jersey, North Carolina, Oregon, Rhode Island, South Carolina, Virginia, West Virginia, and Wyoming.

Federal Spending

State legislatures, through NCSL, are in a unique position to advocate changes beneficial to states in disaster management to the federal government.

RECOMMENDATION: The Federal government should streamline existing grants and appropriations processes.

States and the federal government should prioritize coordination between the levels of government wherever possible, and state governments can advocate at the federal level for disaster funding reform. At least 17 major federal departments and agencies are [involved](#) in paying for disasters. Federal disaster grants have highly complex and varied requirements and funding can take months, or even years, to be paid out. Additionally, Congressional action to appropriate supplemental disaster funds has often faced delays, while federal agencies can distribute those funds [inefficiently](#). The general landscape of the different federal agencies that handle these grants, and the various requirements for each type of aid, is complex and [poorly documented](#).

- States should urge Congress to:
 - o Pass supplemental disaster aid packages as quickly as possible. After appropriation by Congress and disbursement by federal agencies, states may then need to allocate certain funds via their own legislative budget cycle, and process funds through state and local offices before aid gets to communities in need.
 - o Codify U.S. Department of Housing and Urban Development Community Development Block Grant-Disaster Relief (CDBG-DR) grants—without placing overly burdensome requirements on states—to allow this critical source of disaster recovery and mitigation aid to reach communities faster.
 - o Enact legislation to consolidate disaster programs of FEMA, HUD, the Small Business Administration, and others as much as possible to eliminate competing missions and procedures which slow down recovery efforts.
 - o Address the financial solvency of the National Flood Insurance Program (NFIP) through flood insurance rates that reflect future flood risk and consider opportunities for private sector involvement.
- States should urge federal agencies to:
 - o Simplify grants programs. A host of problems exist with the current state of disaster grants—including agency delays in the grant application evaluation and approval process, unclear or evolving guidance on eligibility criteria, inconsistent or outdated Benefit Cost Analysis tools, and matching fund requirements.
 - o Enhance opportunities for state-federal coordination—such as [FEMA's Integration Teams \(FIT\)](#), which enable FEMA to enhance intergovernmental coordination by co-locating FEMA staff with state/local partners, increasing access to and direct engagement with FEMA personnel. Other federal agencies with jurisdiction over disaster assistance could benefit from emulating or coordinating with these teams.
 - o Utilize technical assistance, guidance, co-locating staff, and face-to-face meetings to make clear to states how to prepare before the storm to expedite disaster assistance during recovery. This should ensure the right mechanisms are in place for efficient disbursement of FEMA funds, and identify how states can demonstrate that readiness beforehand.
 - o Reduce or waive the state match for disaster recovery grants for states experiencing extreme economic hardship due to large scale and/or repeated disasters. FEMA has a [procedure](#) for reducing or waiving the state cost share, and did so for such emergencies as the [COVID-19 pandemic](#) and [Hurricane Sandy](#) in 2012.

- o Change Building Resilient Infrastructure and Communities (BRIC) funding from a nationally competitive program to a block grant funded per capita.
- Allow states and locals to use risk assessments to identify and apply funding to projects that reduce these risks, regardless of current eligibility or Benefit Cost Analysis (BCA) requirements. Current requirements are overly burdensome.
- Include clearly defined requirements with auditing requirements by FEMA.

State Disaster Policy Reform

States have continued to prioritize disaster mitigation legislation—with 31 states [enacting](#) 92 bills in 2019 alone. Many of these bills provide financial incentives or loans for mitigation activities; update building codes; regulate public and private disaster planning, standards, reporting and transparency; reform public disaster planning administration; and more. In 2018, Congress established the Building Resilient Infrastructure and Communities (BRIC) program as part of the Disaster Recovery and Reform Act, which allocates significant funding for state and local governments for disaster mitigation activities via competitive grants. Last year (2020) marked the first time states could apply for BRIC grants, and FEMA will prioritize states that have demonstrated a commitment to mitigation. Some state legislatures have committees with jurisdiction dedicated specifically to disaster resilience, which can help facilitate these reforms. The following guidance will assist states in effective disaster management.

RECOMMENDATION: State legislatures could create legislative committees or subcommittees with specific jurisdiction over natural disasters.

Natural disasters touch on a wide array of issue areas, thus disaster legislation overlaps across myriad sectors and is typically considered by several different committees. Many states have legislative committees with jurisdiction over certain components, specific disasters or geographical areas, but not the full scope of the issue. Others – like Homeland Security or Public Safety Committees – have jurisdiction over emergency issues broadly, but must also handle cybersecurity, terrorism, immigration, drug control, law enforcement, criminal justice reform, and others. As a result, disaster legislation is often distributed across different committees, members, and legislative staff each with a subset of the expertise but who also have other priorities. A standalone disaster committee would afford the legislature one location, set of key players, and with institutional, historical, and disaster specific knowledge. California has created such a body, the House Emergency Management Committee, for the 2021 legislative session. Florida’s Select Committee on Hurricane Response and Preparedness and West Virginia’s Joint Committee on Flooding provide additional examples.

RECOMMENDATION: Embrace mitigation measures.

According to the National Institute of Building Science’s 2019 [report](#), mitigation investments can save communities between \$4 and \$11 or more in future disaster costs for every \$1 spent initially—making disaster mitigation one of the best ways to save money in disaster recovery costs for states, the federal government, and communities. Investing in mitigation measures will also make states more competitive for federal grant funding via the new Building Resilient Infrastructure and Communities (BRIC) program, reduce residents’ insurance premiums through the National Flood Insurance Program Community Rating System and the Building Codes Effectiveness Grading Schedule (BCEGS), and potentially ease recovery with post disaster Public Assistance funding. Funding support for many mitigation programs can be obtained through grants offered by FEMA and HUD including BRIC and CDBG. States should consider:

- Creating a statewide disaster resilience plan that consolidates best practices into long-term planning and coordination between sectors and levels of government.
- Policies that utilize funding mechanisms detailed above to incentivize [mitigation practices](#), such as:
 - o Flood mitigation – encouraging homeowners to purchase flood insurance.
 - o Fire resistance - replacing roofs, managing vegetation to reduce fuel load, replacing wooden water tanks, and others.



CLOSER LOOK: CALIFORNIA EMERGENCY MANAGEMENT COMMITTEE

The California state legislature passed [HR 1](#), creating the Assembly Emergency Management Committee beginning in the 2021 legislative session. California arguably grapples with a larger scope and variety of disasters than any other state in the country, which was made even clearer with the record-breaking megafires of the state's 2020 wildfire season. In California's previous legislative session, enacted disaster legislation originated from at least 30 sponsors within the jurisdictions of many different committees—such as the House and Senate Budget Committees, the Senate Energy, Utilities and Communications Committee, the Assembly Natural Resources Committee, Assembly Housing and Community Development Committee, Assembly Committee on Local Government, and more. With such a unique and persistent risk profile, and varied jurisdictional map, it was determined that the California state legislature could benefit from having one central committee with jurisdiction over disaster legislation. The new committee's jurisdiction includes:

- Office of Emergency Services and issues related to the California Emergency Services Act.
 - Emergency Declarations.
 - Mutual Aid System.
 - State Fire Marshal and other state fire prevention and suppression programs, including those administered by CalFire.
 - Emergency medical services and statewide disaster response.
 - Local Government disaster response issues.
 - Emergency Communication issues, alerts, and evacuation procedures.
-
- o Strengthening various structural and nonstructural components specific to earthquake resistance and seismic resilience.
 - o Wind resistance measures, such as adding hurricane shutters or tornado safe rooms.
- Directing state emergency management officials to conduct loss avoidance studies following major disasters to better assess and relay the benefits and return on investment of mitigation measures in their own state. After [conducting such a study](#), the Florida Department of Emergency Management found that recent mitigation projects saved over \$80 million in avoided losses from Hurricane Matthew in 2016.

RECOMMENDATION: Embrace intentional land-use policies that incorporate disaster risk.

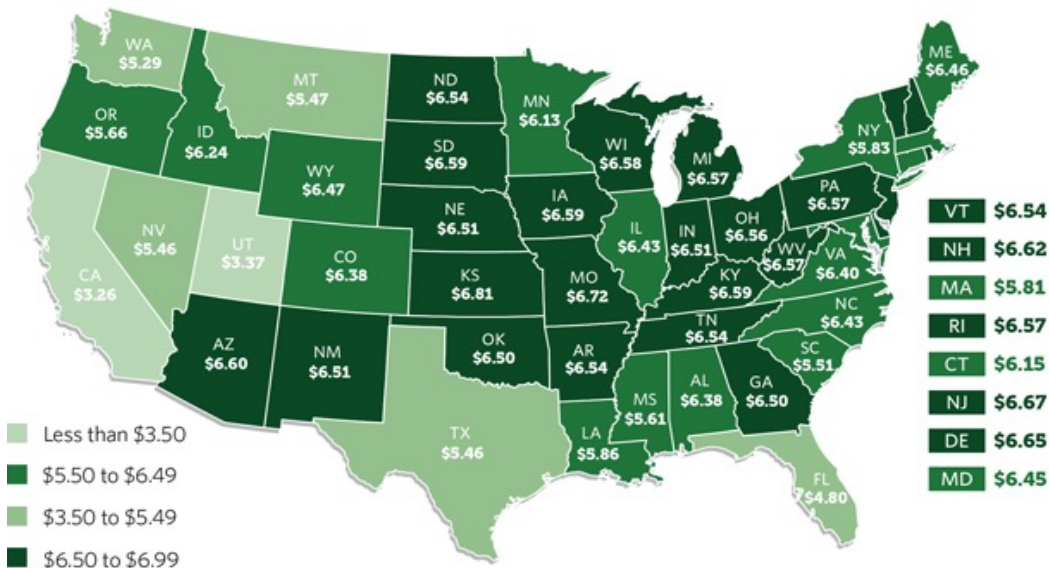
Wherever feasible, states should utilize land-use planning that prevents building in high-risk areas to begin with. States should embrace policies that reduce development in areas particularly vulnerable to hurricanes, flooding, sea level rise, wildfires, earthquakes, etc. Some communities are already factoring risk into long-term planning and investment decisions—such as Norfolk's [VISION 2100](#) strategy which gives consideration to sea-level rise and flooding via green spaces, mixed-use development, infrastructure improvements, and incentives. Pay particular attention to vulnerable populations who may be disproportionately impacted by poor land use choices and may not have the resources to adequately mitigate.

RECOMMENDATION: Consider policies that strengthen building codes and standards.

Building codes have been identified as a highly cost-effective strategy for reducing the impacts of disasters. The Congressionally-established National Institute of Building Sciences found that the regular adoption of building codes provides an \$11 benefit for every \$1 invested. A recent FEMA [study](#) found building codes

Return On Investment From Mitigation Activities Varies By State

Money saved on average per dollar spent for select federal mitigation programs, 1993-2016



Note: Alaska and Hawaii are not included because of data limitations. Federal programs include the Federal Emergency Management Agency's Public Assistance, Flood Mitigation Assistance, Hazard Mitigation, and Pre-Disaster Mitigation grant programs, the U.S. Department of Housing and Urban Development's Community Development Block Grant Program, and 18 U.S. Department of Commerce Economic Development Administration programs. Because the National Institute of Building Sciences uses a representative sample of mitigation projects for its calculation, small sample sizes in some states mean that their state- and hazard-specific benefit-cost ratios may be less definitive than those for other states.

Sources: Pew analysis of data from National Institute of Building Sciences Multi-Hazard Mitigation Council, (April 18, 2018); K. Porter et al., "Natural Hazard Mitigation Saves: 2019 Report" (2019), https://cdn.ymaws.com/www.nibs.org/resource/resmgr/reports/mitigation_saves_2019/mitigation_saves_2019report.pdf

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provided more than \$27 billion in cumulative mitigation benefits against flood, hurricane wind, and earthquake hazards from 2000 to 2016 and could help communities avoid \$132 billion to \$171 billion in cumulative losses through 2040. They also serve as consumer protection measures for homeowners who may not have the knowledge to understand their risks and what to do to address them.

Building codes **vary greatly** across the country in both how they are adopted and the frequency of updates. Some states enforce a statewide building code, others have a statewide minimum code but allow local discretion for enforcement or amendments; and still others have a largely decentralized statewide code or defer fully to local control. States would benefit from considering a set of statewide building standards or at minimum requiring certain building codes in communities that are most vulnerable to disasters—such as homes in floodplains, both inland and on the coasts, or exposed to the Wildlife Urban Interface. This can take the form of retrofitting existing structures or focusing new standards only on new development. States should consider policies that:

- Adopt a statewide and/or targeted building code.
 - Consider recognized national, consensus-based codes and standards—such as the International Codes (I-Codes) and ASCE Standards—in crafting specific policy. Ensure that codes and standards used account for future risk throughout the design life of structures, incorporating future risk beyond what communities currently face.
- In states where code adoption and enforcement are left to local governments (i.e., home rule), the state can incentivize adoption as a means of promoting the responsible use of state funds in disasters through providing technical assistance and training to local jurisdictions or providing favorable conditions for state grant programs.

- Require all state-funded projects comply with the requirements of the latest codes and standards.
- Require new buildings located within certain high-risk floodplains to be built higher above the projected water level—like that of Houston’s revised 2018 post-Harvey building code [policy](#), which increases the freeboard for new buildings in a 500-year floodplain to two feet above the waterline.
- Emphasize wind resistance measures such as hurricane shutters or tornado safe rooms.
- Consider seismic resilience in building standards. FEMA’s recent [Building Codes Save](#) study found that code updates over the past 20 years in California and Florida result in an average future savings of \$1 billion per year.
- Remove, where practicable, certain policy barriers to the use of prescribed burns—public perceptions of smoke, state air quality regulations, overly stringent logging or environmental policies and others can limit the use of this preventative tool.
- Establish a state-run, voluntary home buyout program to acquire and/or demolish hazard-prone buildings that have become more expensive to repeatedly repair than to purchase outright.
 - Replace these structures with nature-based mitigation—creating or restoring green spaces such as parks and wetlands that soak up rainwater, absorb coastal surges, provide recreation opportunities and make communities more attractive places to live.
- Establish or strengthen licensure, certifications and continuing education requirements for building contractors and code officials.



CLOSER LOOK:

CASE STUDIES IN CALIFORNIA AND FLORIDA

As epicenters in the U.S. for wildfires and hurricanes, California and Florida have leveraged the disaster mitigation benefits to a greater extent than most states.

California has adopted wild land urban interface code provision that:

- Establish minimum standards for materials and material assembly.
- Require exterior wildfire exposure protection for buildings in high-risk areas.
- Require the use of ignition resistant materials in roofing, siding, windows, decks and other elements of a home.
- Design homes to resist the intrusion of flame or burning embers from a fire.
- Require that homes maintain as much as 100 feet of “defensible space:”
 - Requiring homeowners to keep trees and shrubs pruned and spaced far apart.
 - Requiring the removal of any flammable material within five feet of the house—such as mulch, plants, woodpiles etc.
 - Encouraging communities to be more intentional about how they lay out their neighborhoods, allowing for firebreaks and enough space between houses.

Florida adopted the International Building Code as a model [in 2004](#), featuring building codes that:

- Require that products used in home construction meet approved hurricane standards.
- Require stronger nails/braces that are better able to secure structure components, such as roofs. Ensure shingles and tiles are properly installed.
- Require a more thorough inspection processes.
- Establish a wind-borne debris region, requiring certain homes to have door and window protections up to 120 mph.
- Consider local exemptions where they make sense but reassessing them periodically – as in the case of Florida Panhandle’s wind debris exemption, rescinded in 2007 following Hurricane Ivan.

RECOMMENDATION: Incentivize solutions for homes built before current standards.

While updated building codes and standards don't typically apply retroactively, this leaves most buildings within a state vulnerable to disasters until they are demolished or renovated. States could offer buyouts for homes built before current standards in disaster-prone areas or incentivize residents to retrofit their homes according to higher standards. Where sustained and expansive impact is projected to a particular area—such as coastal communities facing sea-level rise—state and local governments may need to consider a larger-scale coordinated managed retreat effort. Policies can take the form of:

- Mitigation revolving loan funds—such as Assembly Bill 38 in California, which would create a \$1 billion “fire hardened homes revolving loan fund” to help homeowners retrofit their properties, or the South Carolina Resilience Revolving Fund, which will provide funding for localities to buyout flood-prone properties and restore them to natural floodplain.
- Mitigation subsidies—such as California’s law providing homeowners in earthquake zones up to \$3,000 each to harden their homes against seismic damage.
- Mitigation tax breaks or credits for individuals who have retrofitted their homes according to specified standards.
- Insurance premium discounts—as exemplified in Mississippi SB 2465, enacted in 2018, which requires insurance companies provide an insurance premium discount for new homes built tornado- and wind-resistant.

RECOMMENDATION: Improve utility resilience.

A number of state legislatures have passed measures in recent years that encourage electric utilities and critical infrastructure operators to make investments in storm- and disaster-hardening projects. These projects are intended to make infrastructure more resilient to higher intensity disasters and can include: weatherizing energy systems against winter weather; replacing older wooden poles with concrete or higher-quality wood; flood mitigation work or relocation of flood-prone electric substations; and undergrounding—or burying—portions of the electric grid. States could consider policies that:

- Enable cost-recovery on electric grid hardening and other system reliability initiatives to incentivize these types of investments, and direct state utility regulatory commissions to review and approve those investments that are deemed appropriate, as in Florida and Nevada.
- Focus on electric lines with an elevated history of unplanned outages and establish a pilot program to fold undergrounding into existing transportation infrastructure projects, as in Virginia.
- Require wildfire mitigation plans for electric utilities and prioritize projects that would underground electric lines in high-risk areas, as in California.
- Require utilities to develop storm protection plans for transmission and distribution systems, while providing for cost recovery on those investments, as in Florida.

For example, [SB 287](#) was introduced at the request of Governor Kate Brown for the January 2021 session following the historic megafires of the 2020 wildfire season. The bill would require electric companies and consumer-owned utilities to have wildfire plans based on best practices.

RECOMMENDATION: Incentivize backup power and microgrids.

While grid-hardening is important to establishing a more resilient electric grid, the increased ferocity exhibited by recent weather events has led some industry experts to the conclusion that outages are inevitable. Only so much can be done in a cost-effective manner to reinforce infrastructure against more than 200 mph winds. In these cases localized energy—often referred to as distributed energy resources (DERs)—becomes important to communities. States could consider policies that:

- Feature backup power or microgrids for critical facilities, such as schools, police and fire stations, first responders, hospitals, nursing homes and community centers.

- Offer incentives for these projects, such as pilot programs, resilience grants, and incentives to bolster development by municipalities, private homeowners and business owners.
- Create grants and programs to help homeowners and businesses co-optimize existing DERs, such as rooftop solar and battery storage, with technologies that allow those resources to serve vital loads when the grid is down. These programs could initially focus on individuals or communities that rely on medically essential devices that require electricity.
- Establish microgrid service tariffs that provide operational and financial guarantees for potential developers, as in California, Hawaii and Puerto Rico.
- Create and update statewide databases of emergency equipment—including backup generators, microgrids, satellite phones and other equipment—that could serve the state in emergency situations.

RECOMMENDATION: Develop and update energy assurance plans.

The U.S. Department of Energy has worked extensively with state and local governments to prepare for disaster scenarios. A large part of this took the form of energy assurance planning, which helped states develop in-house expertise on the interdependency of various critical infrastructure sectors and identify potential vulnerabilities in those systems. These plans look at energy infrastructure relative to a variety of potential threats and attempt to synthesize and outline the responsibilities of state agencies, infrastructure owners and other industry participants in the event of real-life disaster scenarios. They also consider issues such as petroleum shortage planning and strategic fuel reserves. Following the 2021 winter weather event in Texas, these plans could consider the interdependencies between various energy sectors—from natural gas production, processing and transportation to power generation and home heating—to identify individual critical failures that could lead to cascading failures that impact water systems and other critical facilities.

RECOMMENDATION: Incorporate resilience into transportation planning.

States could consider policy options that incorporate resilience into transportation planning. The transportation and infrastructure community will have to prepare its road, rail, aviation and waterway networks for severe weather events. Responding to system vulnerabilities in general and emergencies in particular will require a framework focused on planning, preparing and responding to ensure normal operations are restored as quickly as possible. This will inevitably require ensuring the resilience of transportation networks. Specific state actions might include:

- A [2015 report](#) by the National Infrastructure Advisory Council recommended incorporating an understanding of the systemic risks causing system disruptions, as well as resilience into operational practice. It also recommended:
 - o Investing in resilient infrastructure and conducting a quadrennial review to better inform the assessment of vulnerabilities.
 - o Developing tools, models and standards to mitigate risks.
- Engaging stakeholders and policymakers to help weigh the trade-offs that come with prioritizing various options, as recommended in a [2019 RAND Corporation report](#) prepared for the Transportation Research Board. Stakeholders should also include climate science partners.
- According to the U.S. Department of Transportation's [Federal Highway Administration](#), states such as California, Massachusetts and New York require sea level rise to be used for planning purposes. Requirements establish consistent projections for transportation planners. In the absence of such requirements, transportation agencies could use the best available science to estimate likely sea level rise.
- States can take advantage of the FHWA [Emergency Relief program](#). This program provides “quick release” funds to states for emergency and permanent repairs on federal-aid highways and roads, tribal transportation facilities, and roads on federal lands for damage caused by natural disasters. The department allocated \$14 million to North Carolina and \$8 million to South Carolina following Hurricane Florence.
- USDOT's [National Transportation Recovery Strategy \(NTRS\)](#) is designed to help transportation industry stakeholders and local, tribal and state government officials prepare for and manage the transportation recovery process following a major disaster.

Interstate Mutual Aid

Disasters require an all-hands-on-deck approach for swift response and recovery. While federal assistance from FEMA may come readily to mind, the role states play in helping each other is just as significant. Emergencies transcend political jurisdictional boundaries and protection of lives and property requires interstate mutual aid. During and after disasters, the affected state(s) can see an influx of volunteers, supplies, expertise, or even members of another state's National Guard in the response and recovery effort. This assistance—sometimes via formal agreements—can include adjustments to liability laws, various worker protections, and even coordinated exercises and training activities outside actual declared emergency periods. There are several steps that state legislators can take to better understand and facilitate interstate mutual aid.

RECOMMENDATION: Leverage the Emergency Management Assistance Compact.

Interstate mutual aid can be an effective source of immediate, non-federal disaster response and recovery support. The Emergency Management Assistance Compact (EMAC) is an interstate mutual aid network that facilitates assistance during governor-declared states of emergency and that allows states to send personnel, equipment, and commodities to assist with response and recovery efforts in other states. It also allows for various protections—worker compensation, death benefits, license reciprocity etc. Depending on the state, private companies can also take advantage of this system in some ways to expedite rebuilding and recovery efforts. All 50 states and the U.S. Congress have passed [EMAC legislation](#) allowing states to request and provide assistance legally through the Compact. State legislators could benefit from learning about, and leveraging, this important tool for non-federal disaster assistance.

RECOMMENDATION: Explore regional partnerships such as ICDDC.

States could also consider regional mutual aid agreements tailored to certain disasters or certain states. Like EMAC, the Interstate Civil Defense and Disaster Compact (ICDDC) facilitates interstate mutual aid, but operates as a sub-agreement to provide interstate assistance between the five southwestern states: California, Idaho, Nevada, Oregon, Utah, Washington, Wyoming. Unlike EMAC, ICDDC does not require a governor-declared disaster in order to activate, does not allow for international aid, and rests tort liability under receiving states rather than sending states. Regional mutual aid agreements offer opportunities to tailor interstate mutual aid to the needs of participating states.

RECOMMENDATION: Reduce barriers to inter-state assistance during declared emergencies.

States can expedite disaster response and recovery efforts by temporarily waiving certain occupational licensing, tax, liability, and other requirements for out-of-state workers and volunteers. Incoming volunteers and health practitioners expand the state's capacity to assist survivors and facilitate various assistance programs. Damage to buildings, roads, communications networks, utility lines and other property requires swift action from industry professionals. The [mutual assistance network](#) is one example of a voluntary partnership between electric utilities across the nation that allows crews to cross state lines and administer repairs. After Hurricane Irma hit Florida in 2017, more than 60,000 utility workers from across the country deployed to the state and restored power to nearly 8 million customers in a week. More than a dozen states have considered or passed legislation reducing barriers to this type of assistance in recent years. Such measures include:

- Temporary suspension of occupational licensing laws. For example, the Uniform Emergency Volunteer Health Practitioner Act (UEVHPA) allows recognition of out-of-state licenses for a variety of health practitioners during a state of declared emergency, using a registration system among participating states. As of 2020, [18 states and the District of Columbia](#) have enacted UEVHPA [legislation](#). The [Texas Department of Licensing and Regulation](#) has also proposed several such regulations.
- Exempting out-of-state workers from paying certain state and local taxes.

- Limiting liability for out-of-state workers while performing disaster response work.
- Include volunteers and aid workers in this approach.
- Unaffected states issuing expedited transportation waivers to out-of-state disaster response workers passing through on their way to affected states, as happens often in the utility industry.

Private Sector and Nonprofit Solutions

While state emergency managers will be the primary conduit for private sector partnerships, state legislatures oversee the bulk of mitigation and recovery funding and it can be helpful for them to know the key role that the private sector in their state and local communities—even in their districts—can play. As the private sector owns and operates the vast majority of the nation’s critical infrastructure, partnership and collaboration with private sector partners is essential. In providing tax revenue, employment and services, the private sector is the lifeblood of communities. When disasters strike, businesses of all sizes contribute funds, in-kind donations, and expertise to support disaster response and recovery on the ground while utilities, industries, corporations and businesses often become involved in the emergency response. It is important that partnerships between the public and private sector are established and maintained over time, before during and after a disaster. Private insurance is also a key mechanism to reduce disaster costs for individuals in disaster-prone regions.

RECOMMENDATION: Reform existing emergency management frameworks to foster private sector inclusion.

States could consider policy creating a business advisory council on disaster resilience to involve the private sector, chambers of commerce, philanthropic, and nonprofit perspective on disaster recovery impacts. States could consider funding allocations for new positions within emergency management offices to facilitate these relationships, such as a private sector liaison. States could also benefit from learning what disaster services may already be covered by nonprofits in their state and what additional support they may need. From Facebook’s connectivity mapping and individual safety checks to Wells Fargo’s [Mobile Response Unit](#), private sector advancements play a key role in helping communities recover, while public-private partnerships such as FirstNet Built with AT&T offer successful case studies. Established by Congress in 2012 and built by AT&T, [FirstNet](#) is the first high-speed, nationwide wireless broadband network dedicated to public safety. It provides a reliable, highly secure, and interoperable public safety communications platform for public safety agencies and first responders. All 50 states and U.S. territories have opted in to FirstNet.



RECOMMENDATION: Encourage residents to invest in insurance.

Private insurance is a key mechanism to reduce disaster costs for individuals and governments. Homeowners who retrofit their homes to comply with current standards typically receive a break on their insurance rates. While federal recovery assistance can certainly help individuals recover some damage costs, it amounts to many times less what an insurance payout provides. States could consider actions which have widespread beneficial implications for constituents such as:

- Encouraging residents to inventory their property and properly insure it to guard against the economic losses caused by disasters.
- Encourage “best practices” loss prevention and control techniques to minimize loss exposure for state property - this includes encouraging the development of disaster modeling in the academic and private sector.
- Enacting “storm scammer legislation,” designed to protect residents against unethical contractor fraud when attempting to repair and rebuild in disaster aftermaths.
- Supporting and encouraging fair and equitable insurance regulatory systems which protect homeowners.
- Encouraging the federal government to take positive action to reauthorize the National Flood Insurance Program (NFIP) with expanded opportunities for insurers to privately insure flood risks.
- Encouraging communities to participate in the NFIP CRS and BCEGS to help reduce insurance premiums and make it more affordable for residents.
- Educating property owners about the risk of loss. Often, unless insuring the risk is mandatory, consumers may not purchase coverage or purchase the minimum amount. Consumers need to understand their risk: “Where it rains, it can flood.”
- Develop programs to support insurance coverage for vulnerable populations who may not have resources for monthly premiums but would be disproportionately affected by a disaster event.
- A state education curriculum at the high school level that discusses disaster risk factors affecting their communities, the importance of preparation for losses, and stresses the role that insurance can have and how it can protect their vehicles, property and lives.
- Require pre-disaster benchmarking and planning at the state and local level to address resiliency issues such as infrastructure, emergency services, post-disaster access to affected areas for insurers, mitigation efforts that protect the schools, businesses and homes so the economy can recover more quickly.

Conclusion

Disaster mitigation and recovery will continue to be a team effort, especially as the frequency, intensity and cost of disasters increase. Disaster recovery funding and other assistance will continue to come from federal sources, state budgets, interstate mutual aid, and private and nonprofit sector contributions. However, there are also myriad opportunities for states to reform existing approaches to improve disaster management. States can improve state spending capacity by leveraging innovative funding mechanisms, assessing their budgeting tools, and competing for new federal grants—all while tracking that spending to inform progress. States can invest in disaster mitigation activities that save communities many times their initial cost in avoided disaster damage. States can enact broad reforms to existing public administration in emergency management to improve institutional knowledge, consolidate and streamline disaster resilience planning, and coordinate among different sectors and stakeholders. States can both offer and leverage support from other states via established interstate mutual aid pathways such as EMAC, or via more tailored regional agreements—reducing the strain on limited federal resources and expediting disaster response and recovery. Finally, states will benefit from emphasizing the critical role of the private sector as an owner/operator of the majority of the nation’s critical infrastructure and as a source of financial support and technical expertise that does not rely on limited public funding. Formalizing this role within public disaster management systems and increasing coordination will serve all parties. At a time when disasters are increasing in frequency and intensity, damage from extreme weather events is growing far costlier than in previous decades, and the federal government is looking to limit its role and spending on disasters, states nonetheless have the tools to rise to the occasion.

The NCSL Foundation Partnership on Disaster Mitigation and Recovery convened a steering committee of state legislators, legislative staff and private-sector partners to explore policy considerations and develop policy options for states as they face impacts of current and future natural disasters. The steering committee's in-person and virtual convenings have informed the contents of this policy brief. The content within is a product of NCSL and does not necessarily reflect the position of our partnering organizations.

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