REPORT

State Policy Considerations for Disaster Risk and Resilience

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Resilience is the capacity of individuals, communities, businesses, institutions, and governments to adapt to changing conditions and to prepare for, withstand, and rapidly recover from disruptions to everyday life, such as hazard events.

—Federal Emergency Management Agency (FEMA)

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Acknowledgments

NCSL would like to thank the Environmental Defense Fund for its support of the State Resilience Policy and Practices Legislative Cohort. The cohort meetings shed light on some of the most pressing issues facing states when it comes to mitigating and preparing for disasters. This report is meant to provide state policymakers with a roadmap to help them navigate the unpredictable nature of disasters and make their communities more resilient.

Introduction

All levels of government are confronted with a multitude of challenges as the frequency and severity of natural disasters continue to grow. The U.S. averaged nearly 12 "billion-dollar" disasters annually over the past decade—up from less than five per year between 1980 and 2009, according to the National Oceanic and Atmospheric Administration (NOAA). On average, the frequency of these billion-dollar weather events in the last five years has increased by 130% compared with previous decades.

Disasters inflict economic hardships including damage to buildings, businesses, homes, infrastructure, agriculture and more, but they also inflict damage to social infrastructure. The social costs of disasters are largely unquantified but have a direct impact on the state's ability to provide services to its constituents. Some of these social costs include the ability to provide access to health care and education, the ability of services to keep children safe and the ability of businesses to recruit and retain the workforce. These have cascading and inequitable impacts on the wealth, mental and physical health and overall well-being of individual residents and families.

The staggering economic and social consequences of disasters can impact the state for months or years to come. The loss of natural and man-made infrastructure, loss of place and loss of human life are driving large-scale investments to harden and protect these valuable assets. Investments to mitigate any kind of risk require an analysis of the return on investment. Over the past 25 years, public sector investments in mitigation by the Federal Emergency Management Agency (FEMA), the U.S. Economic Development Administration, and the U.S. Department of Housing and Urban Development have saved $6 per $1 spent, totaling $160 billion in savings that would have otherwise been spent on losses from natural hazards. This is likely a conservative estimate, but nonetheless, it provides states with data to help demonstrate the value of these investments.

To get ahead of disasters, states have a variety of tools at their disposal including:

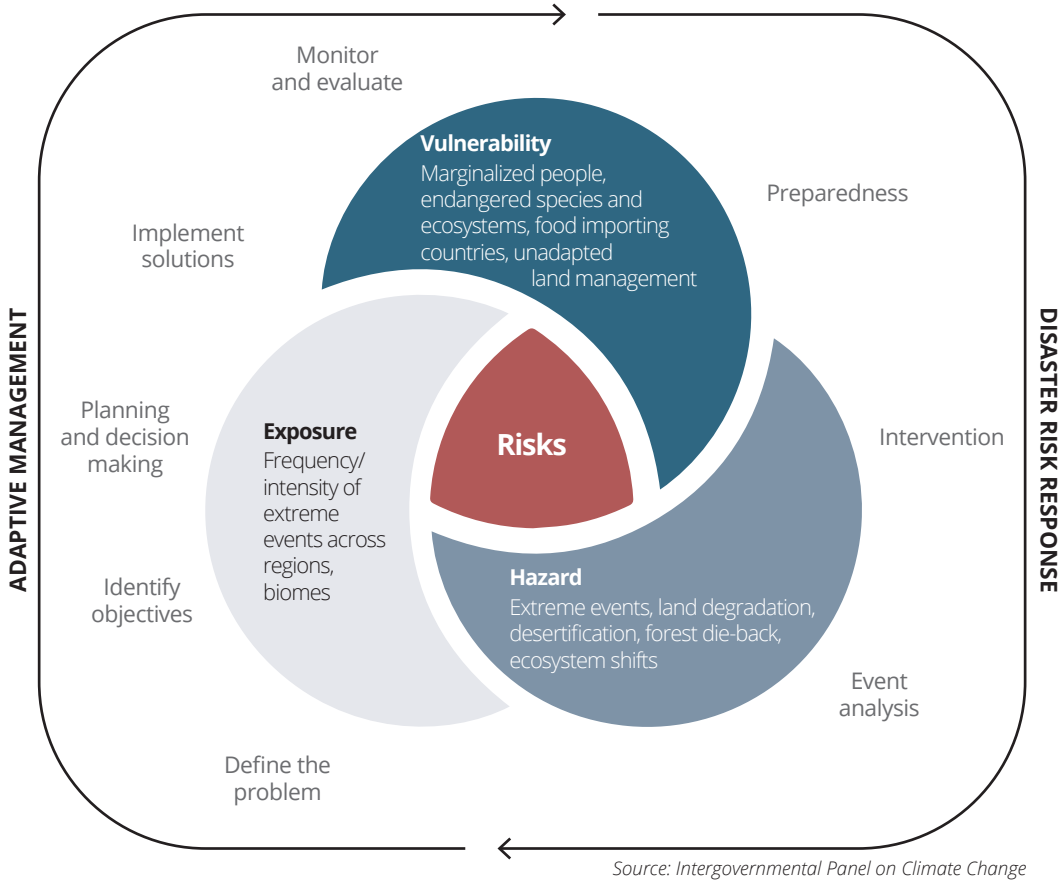
- Building on federal funding streams to enhance and expand mitigation and resilience projects. States can support their own disaster management and resilience activities via innovative funding mechanisms such as bonds, infrastructure banks and revolving loan funds.
- Offering tax credits, rebates or other incentives to help accelerate the transition to more resilient infrastructure and to shore up protections against future disasters.
- Strengthening emergency management frameworks to account for a whole-of-government approach.
- Promoting collaboration among federal, state, territorial, tribal and local government agencies.

The Evolution of Disaster Management

The 1988 passage of the Stafford Act established a framework for disaster response which for decades has represented the United States' approach to disaster management. Over the years, the Stafford Act was amended including in 2000, when Congress passed the Disaster Mitigation Act to focus on pre-disaster planning and FEMA began requiring hazard mitigation plans. As the frequency and intensity of storms began to increase and the costs of responding to these storms began to grow, Congress responded by passing the Disaster Recovery Reform Act (DRRA) in 2018. It is widely considered the most comprehensive reform of disaster management legislation in decades, and in many ways ushered in a new era of mitigation

and resilience vs response and recovery. The DRRA acknowledged that supplemental funding to FEMA post-disaster was hampering states' ability to prepare for and respond to disasters and created a more reliable funding stream through set-asides for pre-disaster mitigation efforts. FEMA has long held that disaster response is "locally executed, state managed, and federally supported," in that order, putting state and local governments ahead of the federal response. In recent years, FEMA and other federal agencies have increased engagement with and support for state, territorial, local and tribal governments. The passage of the Infrastructure Investment and Jobs Act (IIJA) and the Inflation Reduction Act (IRA) in 2021 and 2022 respectively, ushered in unprecedented investments in disaster mitigation and resilience. The IIJA supports making infrastructure more resilient to the impacts of severe weather with an investment of more than $50 billion to protect against droughts, heat, floods, wildfires and cyber threats. The IRA added an additional $112 billion for climate-related projects, plus billions more for clean energy projects. Agencies across the federal government are using the funding to bolster existing programs and, in some cases, create new programs that address unmet needs or foster innovation in the climate and clean energy arenas.

Adaptive Governance



Source: Intergovernmental Panel on Climate Change

For decades, disasters were primarily managed through state and local emergency managers and focused on last-minute preparations to save lives, protect infrastructure and respond post-disaster. As the frequency and severity of disasters grew, it soon became clear that this approach and the philosophy behind it was too siloed and insufficient. Taking a more strategic approach to hazard management meant evaluating risks long before a disaster or storm occurs and making investments to head off the worst of its impacts. This shift towards mitigation planning is now evolving to be an even more cross-cutting, comprehensive and data driven approach referred to as resilience planning. While resilience planning, emergency preparedness and hazard mitigation are interrelated, resilience planning goes further—it explores and addresses the underlying vulnerabilities to hazards, links environmental, social and economic sectors to help communities better adapt to changing conditions and is dependent upon the expertise of agencies across

the government complex. This more whole-of-government approach to planning has led to the creation of offices, programs or task forces in many states. At the federal level, the National Coordination on Adaptation and Resilience for Security Act, a bipartisan bill introduced in November 2023, calls for a coordinated government strategy for resilience including the appointment of a federal chief resilience officer and the creation of interagency working groups. This bill aims to streamline the federal response to climate hazards, improve efforts to support state, local, tribal and territorial governments and increase accountability and fiscal responsibility.

State Policy Options

In tandem with the federal government, states are changing their approach to disaster management through policies that emphasize disaster mitigation, infrastructure resilience, and centralized planning. Mitigation measures in particular—such as building code improvements, natural infrastructure investments and updating land use and development practices—are often very effective in reducing disaster damage costs in communities, amounting to many times the initial investment.

In addition to appropriating funds to support mitigation activities, state legislatures are also responsible for the general oversight of those activities. Today, many states are looking at ways to streamline and centralize these functions under one person or office. This can be an effective approach given the number of federal agencies involved in helping states prepare for and respond to disasters and the complexity of the various funding mechanisms. This is just one of many things that have changed over the years as states try and manage the elevated risk associated with disasters.

A Whole of Government Approach to Mitigation

To date, at least 28 states and the District of Columbia have created a position, office, or task force to streamline planning and project oversight for disaster mitigation and climate resilience projects. For many states, the position is known as a chief resilience officer, or CRO. Through resilience planning, states can:

- Better understand the impacts of environmental disasters and the resources available to prevent or lessen these impacts.
- Support local communities in their efforts to protect their infrastructure and citizens and recover more quickly from natural disasters and climate-related challenges.
- Assist communities with identifying and addressing their vulnerabilities, cataloging their resources and understanding how mitigation activities can lower the costs associated with natural disasters and other major events.
- Coordinate actions and build alignment across all state agencies, as disasters impact the infrastructure and services provided across all sectors (health care, education, corrections, etc.) to ensure each agency's mission can be achieved.
- Streamline processes for tapping into federal, state and private funding that will support mitigation and resilience activities, track how the resources were spent and shed light on the return on investment for various efforts.

Offices of Resilience

At least 14 states—Alaska, California, Colorado, Delaware, Louisiana, Massachusetts, Michigan, Mississippi, New Jersey, North Carolina, Oregon, South Carolina, Vermont and West Virginia—have established state resilience offices or similar state-led programs. Legislation can create and fund CRO positions or resilience offices. Where legislatures have crafted bills to create a CRO position or office, they often identify a funding source or make an appropriation to fund the officer and any additional support staff needed to carry out their work.

Task Forces, Working Groups, and Commissions

States such as Maine, Nevada, Louisiana and Washington, have created task forces, commissions or working groups tasked with evaluating adaptation strategies and recommending resilience planning activities. Advisory councils or task forces are often established to conduct initial resilience related research, interface with local communities and provide reports to state officials, or they can help support broader resilience efforts. Often when states create a CRO, they also form an advisory council, or a task force consisting of representatives of various agencies and designate the CRO as chair or leader.

State Examples

■ **Colorado:** The Colorado Resiliency Office, launched in 2013 following significant wildfire and flooding events, released its initial framework in 2015 and has subsequently developed numerous resources on hazard planning, resilience and recovery—making it a multi hazard, interagency roadmap to address disaster mitigation, planning, and response. For example, the office develops a resiliency and community recovery program; examines long-term recovery, including how to rebuild in a resilient way after an event; provides state and local technical assistance; integrates resilience into state investments and grant programs; and plans to improve coordination among state agencies and local jurisdictions to support community and economic recovery efforts and to address risk reduction.

■ **Louisiana:** Louisiana is taking a whole-of-government approach to state government to ensure communities have access to critical community lifelines like health care, education, jobs and housing, to thrive in the face of increasing risks. First established by executive order and then codified by Act 315, Louisiana established a chief resilience officer within the governor's office, a resilience coordinator in every state agency that collaborate through a working group, and the Louisiana Resilience Task Force. The effort to date has resulted in an initial Adaptive Governance Initiative report released at the end of 2022 and a 2023 Statewide Resilience Annual Report. This report details the scale of the environmental challenge confronting state agencies today and in the future through vulnerability assessment of their physical assets like infrastructure and social assets, including programs, services, and employees, as well as assessing potential adaptation and resilience actions.

Disclosing Risk

Access to risk-related data can change both policy and behavior and improve preparedness. As more and better data becomes available, questions as to how and with whom that data is shared are top of mind. To that end, states are exploring disclosure mechanisms to ensure that property owners and prospective buyers have access to the information they need to make informed decisions around building retrofits, more resilient building practices and securing proper levels of insurance. For example, in the United States, flooding is the most common disaster, leading to billions in annual losses. Yet few people fully understand the level of risk faced by their residence, business and community. FEMA released a report in 2022 on state requirements for disclosing flood risk during real estate transactions covering common disclosure types and insurance policy penetration rates. Without disclosure, the costs of rapidly rising insurance rates can be hidden, potentially putting vulnerable families at risk of increasing financial burdens and even foreclosure and can influence overvaluation. Across the nation, significant differences are found in overvaluation between those counties with and without disclosure. For example, in Florida, where there is no disclosure law, properties are estimated to be overvalued by more than $50 billion.

State flood disclosure laws can inform prospective buyers of the following:

- Whether or not the property is located within a FEMA designated flood hazard zone, acknowledging the projected expansion of the floodplain and referring to state sea level rise-adjusted floodplain maps where available.

- Whether or not the property is located within a wetlands area.
- Prior physical damage caused by flood to a structure on the property.
- Prior insurance claims for a flood-related loss on the property, or notification regarding designation as a repetitive loss structure (including amount).
- Obligations to obtain and maintain flood insurance.
- Existence of a flood elevation certificate on the property.

As more states consider legislation on disclosures, they will likely cover a broader range of disasters including wildfires, tornadoes, etc.

State Examples

New Jersey legislators passed Senate Bill 3110 in 2023 requiring sellers of real property and landlords to disclose knowledge of a property's history of flooding, flood risk, and location in a flood zone or area, as well as the availability of insurance through the National Flood Insurance program. The law also includes a note in the disclosure that "properties in coastal and riverine areas may be subject to increased risk of flooding over time due to projected sea level rise and increased extreme storms caused by climate change which may not be reflected in current flood insurance rate maps."

New York passed a disclosure law for renters in 2022 (Senate Bill 5472) and the equivalent for home buyers in 2023 (A1967), which calls for disclosures including property flood damage history, location of the structure in the 100- or 500-year floodplain and elevation certificate availability.

Texas: In 2019, Texas enacted House Bill 3815 and Senate Bill 339 requiring sellers to disclose any previous water damage and flooding, floodplain status, previous claims filed or assistance from FEMA or the Small Business Administration for flood damages and whether the property had flood insurance.

State Policy Considerations:

- Evaluate available data on state level risk factors.
- Explore types of disclosures and their relation to insurance policy uptake.
- Understand that risks may change over time, so disclosure policies would need to adapt.

Using Research and Data

Evaluating risk requires access to good data. Over the last several years, the federal government and states have invested in data collection, analysis and management and have integrated data into their decision making. For example, having access to high-resolution topographic data can help decision makers understand the vulnerabilities of shorelines to coastal changes, aid in watershed planning and illustrate potential hot-spots in wildland-urban interfaces.

Universities, often in partnership with states, have stepped up their research efforts and become an important source of data. Federal agencies such as the National Oceanic and Atmospheric Administration (NOAA) provide comprehensive tools and resources to assist states, territories, tribes and localities. Additionally, some states have established stand-alone entities to provide research, data and analysis to help all levels of government make informed decisions. The following are a few examples:

- The Iowa Flood Center was established by the legislature in response to record-setting flooding in 2008 that devastated the eastern part of the state. House File 822 (2009) provided funding to the

state board of regents to establish and administer a flood center at the University of Iowa College of Engineering. The law requires the center to work cooperatively with state and federal agencies on flood-related projects that help residents understand their flood risk and better prepare for flooding. Among their many projects are a cost-efficient sensor network to better monitor stream flow, a library of flood-inundation maps for more than 30 communities, and floodplain maps for all 99 counties.

- The Florida Flood Hub for Applied Research and Innovation was created in 2021 through House Bill 7019 and is based at the University of South Florida College of Marine Science. Working in concert with the Resilient Florida Program, the Flood Hub supports statewide efforts to protect people, businesses, natural resources and infrastructure. Their open-source products and services inform vulnerability assessments, risk analyses, economic investments and strategies to help communities mitigate and adapt to flood-related hazards. The Flood Hub is currently supporting two technical workgroups on sea level rise and rainfall.

- Virginia is also using the university system for research and education related to climate resilience. These include the Virginia Coastal Resilience Collaborative (formerly Virginia Coastal Policy Center), Virginia Sea Grant, Commonwealth Center for Recurrent Flooding Resiliency, the Institute for Coastal Adaptation and Resilience, and the Virginia Institute of Marine Science.

State Policy Considerations:

- Explore the capabilities of higher education institutions to produce data and research specific to state needs.

- Leverage federal funding available for research support and/or consider state level appropriations.

- Evaluate opportunities for regulatory and research collaboration.

Using Building Codes

In an era of increasingly severe disasters, states can use building codes to shore up the built environment making it more resilient to the impacts of severe weather events. In the wake of recent disasters, states have added requirements for everything from fire-resistant building materials to hurricane straps to their building codes, illustrating how the codes are a powerful tool in the policy toolbox to dramatically improve the ability of infrastructures to withstand disaster and save lives.

There are several different model building codes, but most states have adopted or use the International Building Code (IBC) as their model code. The IBC can be adopted as is or used as a baseline and customized by the state or jurisdiction. Additionally, organizations such as the American Society of Civil Engineers offer technical standards related to structural design such as building load which can be impacted by snow, rain, high wind and seismic activity. These technical standards are often reflected in model code.

Model codes give states and local jurisdictions the flexibility to focus on specific hazards such as wildfires or floods which are common to their region. As a result, building codes vary from state to state and between jurisdictions. Some states such as North Carolina, Iowa and Louisiana have adopted a statewide building code, while others such as Maryland have a statewide code but offer local jurisdictions the option to add amendments. Other states, such as Delaware and Wyoming have no statewide code, leaving it entirely up to local jurisdictions. Only a handful of states have adopted the most recent (2021) version of the IBC code and in fact, many states are operating under codes dating back several years.

As states and local jurisdictions explore model codes, two key considerations may rise to the top of the list:

- Cost/benefit and enforceability. Often, provisions required by building codes, such as the addition of sprinkler systems or a metal roof, can add to building costs and may become a barrier to compliance if the financial burden on homeowners or builders is too great. As such, states may limit or omit certain requirements, as long as minimum code requirements are met, but must weigh whether these omissions will compromise the effectiveness of the code in the long term. States have also taken steps to incentivize certain building code requirements. A good example is tornado shelters, often known as safe rooms, which are incentivized in several southern and midwestern states allowing homeowners

to build them at low or no-cost. Additionally, many states and local jurisdictions grapple with code enforcement. A lack of enforcement can render even the most stringent code ineffective and can compromise public health and safety. Typically, the lack of resources to support activities such as permitting and inspection results in lax enforcement and can compromise the integrity of the codes.

- Several states have updated their building code requirements following a disaster. Following a significant wildfire season in 2017, Washington enacted Senate Bill 6109 in 2018 to adopt portions of the International Wildland Urban Interface Code into the state building code. In 2022, Florida enacted Senate Bill 4D to clarify that roof repair or replacement can take into account compliance with editions of the Florida Building Code dated 2007 or later. Structures that have integrated the new code requirements have weathered subsequent storms much better than other structures which may not meet a more recent code. This was evidenced in Florida after Hurricane Michael made landfall causing an estimated $25 billion in damage to homes and infrastructure.

State Policy Considerations:

- Consider legislation to adopt the most recent building code now and in the future.
- Require all state buildings to comply with the latest building codes and require that state-funded projects do the same.
- Offer subsidies or tax credits to promote adoption of building code provisions and incentivize homeowners and building owners to retrofit properties to meet the current standards.
- Establish funding mechanisms to support the implementation of upgraded building codes, especially where private or public insurance does not cover the full cost and in disadvantaged communities.
- Ensure that state and local jurisdictions have the staffing and support they need to conduct site inspections, issue and approve permits and act in the event of non-compliance.
- Establish or strengthen licensure, certifications and continuing education requirements for building code inspectors. This ensures a pipeline of properly credentialed individuals to keep up with new construction needs as well as retrofits.

As state legislatures continue to explore ways to minimize the impacts of disasters, adopting the latest building codes, whether at a statewide level or by jurisdiction, should be given consideration. Adoption can impact not only the infrastructure, but the state and jurisdictional ability to apply for and secure federal funding. Demonstrating investments in mitigation makes states more competitive for federal grant opportunities such as FEMA's Building Resilient Infrastructure and Communities (BRIC) program, reduces residents' insurance premiums through the NFIP Community Rating System and the Building Codes Effectiveness Grading Schedule, and potentially eases recovery with post-disaster Public Assistance funding.

Building Code Benefits

Choosing to forego adoption of building codes, or weaken the elements of building code standards, can impact states and their residents. For example, FEMA's Public Assistance program generally requires that hazard resistant provisions of the International Code Council's International Building Code, the International Existing Building Code, and/or the International Residential Code be used as a minimum design standard for all eligible building restoration projects. Failure to incorporate these minimum standards may result in denial or de-obligation of FEMA funding. Additionally, communities participating in the National Flood Insurance Program (NFIP) must meet minimum floodplain management standards. Insurers may also decline coverage in areas where building code standards are determined to be inadequate given the risks such as wildfires or flooding. There are also economic considerations. If infrastructure is badly damaged as the result of a severe storm or disaster, it will take longer to rebuild and restore the community.

Local Land Use Planning

How and where growth occurs can have a major impact on the ability of communities to prepare for and recover from natural disasters. States delegate to local governments the responsibility to develop and implement land use planning documents and zoning regulations. Comprehensive plans, also known as general plans or master plans, are the foundation for local land use planning and serve as a blueprint for the growth and development of a community over time. In most cases, a comprehensive plan consists of diagrams or maps illustrating the location of existing land uses, as well as written text outlining development goals for a range of uses such as housing, transportation, utilities and recreation. While planning occurs at the local level, states play a role in directing the planning process. Most states require local governments to complete a comprehensive plan, although some are more prescriptive than others regarding its content.

South Carolina Senate Bill 259, enacted in 2020, requires local comprehensive plans to include a resiliency element that considers the impacts of flooding, high water and natural hazards on individuals, communities, businesses, economic development and infrastructure. The element promotes resilient planning, design and development, and is coordinated with neighboring jurisdictions and agencies.

In 2021, the New Jersey Legislature passed Senate Bill 2607, requiring all land use elements of a municipal master plan adopted or amended from then on to include a climate change-related hazard vulnerability assessment. The assessment would, among other things, evaluate current and future threats to, and vulnerabilities of, the municipality associated with natural hazards, include a build-out analysis of all future development, and provide strategies and design standards that may be implemented to reduce or avoid certain risks.

Washington state lawmakers updated the state's Growth Management Act in 2023. House Bill 1181 directs cities and counties to consider climate change and resiliency in their comprehensive planning. Plans must address natural hazards, including sea level rise, landslides, flooding, drought, heat, smoke and wildfire, and outline efforts to enhance the ability of communities to adapt to changes consistent with the principles of environmental justice. Local jurisdictions may adopt by reference a FEMA natural hazard mitigation plan or similar plan to satisfy the new requirements.

State Policy Considerations:

- Evaluate the state's role in land use planning relevant to risk factors.
- Determine if hazard mapping tools and data can be used to determine risk at the local level.
- Assess the value of creating state level hazard zoning that can support lower risk development. For example, New Jersey authorizes the Department of Environmental Protection to delineate and mark flood hazard areas and enforce an inland flood protection rule.

Enhanced Hazard Mitigation Planning

FEMA's Hazard Mitigation Grant Program (HMGP) provides funding for states to rebuild in a way that reduces or mitigates future natural disaster losses in their communities. The formula generally gives 15% of the total federal assistance amount provided for recovery from the presidentially declared disaster. Another policy option available to states is developing enhanced hazard mitigation plans. This supplemental planning increases the HMGP assistance eligibility to 20%. The critical difference that sets enhanced planning apart is a more comprehensive approach that takes into account risk reduction across programs and takes a long view on mitigation planning. FEMA assesses several factors for eligibility, including conformance to standard plan benchmarks, grants management performance, community-wide integrated planning, commitment to comprehensive mitigation programming, effectiveness of current mitigation plans, and ability to implement plans. States should allow for at least 12 months to be approved for enhanced status. Fifteen states are currently eligible for the benefits of enhanced mitigation planning. Additional information and details can be found on FEMA's website.

Buyouts and Relocation

Communities highly vulnerable to disasters are starting to address the need to relocate residents and assets. Long-term resilience will include the need to plan and make strategic investments in both receding and receiving communities.

State programs for buyouts and relocation are being developed to complement other local and federal programs. For individual households, navigating the complex process of buyouts can be overwhelming, costly and burdensome. Examples include the Blue Acres program in New Jersey and ReBuild in North Carolina. In 1995, New Jersey's Department of Environmental Protection created the Blue Acres program, designed to relocate families whose homes are at risk of flooding and to convert these lands to open space. The program has two primary aims—to provide funding post-disaster to assist flood-damaged homes and to proactively acquire land that has been damaged in the past or to acquire land that is prone to future damages and to protect adjacent communities. Following two consecutive years of intense tropical weather, North Carolina established the Office of Recovery and Resiliency (NCORR) to create dedicated resilience programs, including ReBuild. NCORR programs aim to strengthen homeowner recovery, strategic buyouts and community development and emphasize the importance of layering state and federal funding to achieve these goals.

State programs like Blue Acres and ReBuild are unique because they do not rely on federal funding. Rather, they are created to address gaps in federal programs. Other state agencies are administering significant federal funding. For example, the Texas General Land Office was allocated more than $14 billion for recovery and mitigation, including both Community Development Block Grant Disaster Recovery (CDBG-DR) and Mitigation (CDBG-MIT) funds from the U.S. Department of Housing and Urban Development (HUD). Likewise, Louisiana is distributing CDBG-MIT funds for use as buyouts in seven regions of the state through the Office of Community Development and the Louisiana Watershed Initiative.

Currently, relocation is occurring through ad-hoc movements that can strain the resources of receiving communities while reducing the resources of receding communities, often due to loss of tax base. There is increasing attention on intentional planning around relocation and managed retreat which can better identify and prepare safe receiving communities for potential rapid population growth, while also properly managing the disinvestment in receding communities.

State Policy Considerations:

- Assess communities at risk of broad hazard impact.
- Evaluate capacity of lower risk communities to receive relocated residents and assets.
- Curate funding options to execute risk-based planning and relocation needs.
- Use scenario planning data and tools to help determine future risk.

Insurance

Several states facing escalating damages from climate extremes are now experiencing stress in their property insurance markets, including Florida, Louisiana, Texas, and the wildfire-prone regions of California. In Florida and Louisiana, recent storms have pushed dozens of insurers into bankruptcy. In many high-risk areas, insurers and reinsurers are exiting the market or restricting coverage. These trends are exacerbated by the growing costs of rebuilding from inflation, supply chain disruptions and legal challenges that are raising costs in certain states. As private insurers pull back from these markets, the role of state-run insurance programs like California's FAIR plan or Florida's Citizens Insurance will continue to increase. Bolstering state insurance programs like these can be helpful, as they provide an important backstop for households (although often at higher prices or lower coverage levels), and also provide some degree of insulation to local housing and mortgage markets from growing climate risk. Yet public sector markets also grapple with the same difficult economics of insuring a catastrophic risk that is only getting worse. A 2023 report by Ceres examines the role of insurance in disaster recovery.

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To protect households facing loss of coverage, states can consider providing means-tested assistance or pass legislation that enables insurance regulators to accept new insurance designs, such as parametric and community insurance. Ultimately, stabilizing the disaster insurance market to lower the underlying risk of losses may be best achieved by household and community-level resilience measures and exploring options to support relocation.

While both insurers and those purchasing insurance look for ways to reduce costs, there does not seem to be a direct relationship between resilience investments and premium reductions. Most state risk mitigation programs do not have the authority to ensure that insurers actually account for and pass on loss reduction savings to policyholders, and insurers do not necessarily have an incentive to reduce insurance prices. As state policymakers and regulators weigh their options for trying to reduce insurance costs, they may consider imposing requirements on insurers to provide consumer mitigation rebates, or create the incentives directly within state public insurance programs. For example, the North Carolina state wind pool's FORTIFIED roof program offers grants, insurance discounts and endorsements to support roof strengthening. The endorsement option allows those unable to upgrade to a fortified roof a policy supplement that pays additional funds to upgrade following a covered loss.

Insurance incentives for community-level resilience investments is even more challenging. While theoretically promising, the viability of reducing insurance costs and incentivizing risk reduction relies on insurers having catastrophe modeling that takes into account community adaptation measures. Due to the proprietary nature of insurers' models, it is unclear how resilience investments get counted in pricing models, especially for green or natural infrastructure. Because of this, it is much easier to establish these incentives within public insurance programs, like the Community Rating System within NFIP, as the loss models are part of the administrative domain. Despite the potential premium reduction benefits, municipal participation in CRS is quite low; states could invest in technical and administrative CRS support to help cities and households access those savings and improve their scoring.

State example

The state of California recently adopted the "Safer from Wildfires" framework, identifying 10 actions households can take that materially reduce their wildfire risk. The California Department of Insurance has also instituted the nation's first wildfire safety regulation, requiring that insurers provide discounts to consumers if they follow the wildfire risk reduction actions, and instituting a higher level of transparency on insurer's risk ratings.

State Policy Considerations:

- May consider state insurance systems.
- Evaluate risk reduction incentives into state insurance
- Work with insurers to provide risk reduction incentives
- Enable participation in Community Rating System

Bonds

In general terms, bonds are a debt security that pays a predetermined rate of interest during a set amount of time until the maturation date. Municipal bonds are issued by state or local governments to fund general budget obligations and finance big capital or infrastructure projects, paid back through a government's taxing power (general obligation bonds), or revenues from the capital project such as stormwater fees (revenue bond). Municipal green bonds are specifically designed to finance projects with environmental benefits. While there is no universal definition for what those benefits entail, there are two main frameworks that facilitate some standardization:

- The Climate Bond Standard and Certification, managed by the Climate Bonds Initiative (CBI) which assesses bonds on their performance lowering greenhouse gas emissions
- The Green Bond Principles from International Capital Markets Association, which are voluntary guidelines for the process, transparency and disclosure of green bonds. Green bonds function as any other municipal bond, aside from having an earmarked purpose for environmental outcomes that follow these standards and principles. Labeling bonds a green or climate bond through a recognized framework can benefit the issuer by making it eligible for certain Environmental, Social and Governance (ESG) funds, but there is a cost associated with third party certification; as a result, regular municipal bonds may meet environmental outcomes without being labeled as such.

Environmental Impact Bonds (EIBs) or Social Impact Bonds are a newer iteration of a green bond and structured slightly differently. Repayment is based on the actual performance of the environmental or social investment, as measured by indicators set at the bond design, and paid by the beneficiaries of the project through avoided costs (i.e. regulatory fines) or other co-benefits. EIBs are useful for interventions perceived as risky or have greater uncertainty around performance, such as natural infrastructure. Payments to investors are reduced if it underperforms and increased if it overperforms, allowing cities to pilot new interventions by sharing the risk with investors.

While bonds can be used for any type of infrastructure, municipal bonds specifically labeled for resilience investments are not common. To date, the green bond market has largely focused on carbon mitigation and water quality, and green bonds application in resilience is low—adaptation-related investments are estimated to be less than 4% of the green bonds issued in 2022. However, this is difficult to measure since the green bond performance categories have historically not included resilience. In response to this gap, Climate Bonds Initiative (CBI) is starting the process of updating Climate Bond standards to establish science-based rules as to what constitutes sound adaptation investments within green bonds markets.

Resilience bonds are another option to finance the big investments in resilience infrastructure. They are modeled after and built off of catastrophe bonds, which function more like insurance for local governments than municipal bonds. With catastrophe bonds, local governments pay premiums to a bond issuer in exchange for a payout if a catastrophe above a certain threshold occurs, based on the cost of damage. A resilience bond would build off an existing catastrophe bond, enabling a local government to model the expected reduction in damage if resilient infrastructure projects were built and establish a rebate to the local governments that can be used to finance projects or reduce insurance payments. While resilience bonds use cases have been modeled based on existing catastrophe bond programs, the field is quite nascent and few states or cities have implemented them.

State Example

The New York State Environmental Bond Act authorized the issuance of $4.2 billion in bonds for mitigation, adaptation and environmental quality. $1.1 billion was allocated specifically for flood risk. The law is structured as a traditional municipal bond, with general obligation (repayment through taxes). Priority projects are being worked out with the first bonds expected in FY 2023.

State Policy Considerations:

- States can issue municipal bonds to finance resilience infrastructure. Local laws vary, but many states require voter approval for the state to pass more debt.
- Identify target resilience projects and assess potential benefits.
- States can issue municipal funds for specific resilience purposes to reserve funding as matching funds for big federal spending bills, such as the Inflation Reduction Act and bipartisan Infrastructure Act.

Infrastructure Banks

Green banks are generally mission-driven public or non-profit institutions with the goal of financing carbon mitigation and clean energy projects. While there is not a single official designation of a green bank, the institutions represented in the American Green Bank Consortium share a common goal of expanding investments in innovative clean energy projects. Because their purpose is climate investment rather than profit maximization, green banks are able to offer subsidized loans or make riskier investments to target investments towards underserved populations and emerging climate investments. While their initial capital or base funding streams usually comes from public or philanthropic sources (bonds, federal grants, utility fees), green banks often use financing techniques for projects that makes projects less risky and more attractive to private capital, such as loan guarantees and gap financing. Estimates show that in 2022, public capital from green banks catalyzed over two times the amount in private capital. Establishing green banks can be critical for states wanting to access new federal funding, as much of the IRA funding is limited to non-profit entities, aimed at distributing funds through state and local green banks for climate projects.

Infrastructure banks have a similar structure, with a broader mandate: typically public sector entities (state, county) which provide and attract loans for municipalities or special authority to invest in infrastructure projects. While not necessarily focused on mitigation, infrastructure banks are meant to provide low-interest loans and technical assistance, especially for larger and more complex projects that municipalities may not be able to manage independently. These structures have long been deployed at the state level through Department of Transportation state infrastructure banks, aimed specifically to help finance surface transportation projects by making it easier to leverage federal funds or borrow on the bond market.

Adaptation and resilience has not historically been a stated mission of green banks or infrastructure banks, but resilience can be prioritized in either vehicle. Priorities are set by the government institution that creates the bank, and resilience and risk reduction goals can easily be integrated as part of the stated mission, as Vermont did in 2023 in passing its Vermont Climate Infrastructure Fund (HB 248). Over the last few years, several long-standing green banks and community development financial institutions including Connecticut Green Bank and Finance New Orleans, explicitly updated their funding strategy to include resilience goals into their project priorities.

State Example

The Rhode Island Infrastructure Bank serves a mission to support innovative financing for infrastructure projects, representing both infrastructure bank and green bank structure. The bank was first established in 1989 to finance clean water infrastructure, but was expanded in 2015 to include clean energy, energy efficiency and brownfield remediation. This demonstrates how states can build off of existing special purpose institutions to build a broader resilience financing system. The bank's municipal resilience program provides training and data to cities on vulnerabilities, assisting them in developing and prioritizing projects to build resilience and providing grants for their identified projects. The bank also manages a stormwater project accelerator, which provides the upfront capital (interest-free) for green stormwater infrastructure projects that will be paid back through public reimbursement grants.

State Policy Considerations:

- Explore establishment of a green bank which may require legislative authorization.
- Green banks require upfront capital or a dedicated source of funding. States can aid the development by helping create a funding source through federal grants, bonds, utility surcharges, carbon market revenue, legal settlements and more.

State Policy Landscape

States have considered hundreds of bills related to disaster mitigation since 2018 relating to infrastructure planning to reduce risks, implementing financing mechanisms to streamline preparedness and response, green infrastructure initiatives to protect and fortify natural resources, and the development of resilience offices to support disaster planning and recovery across government.

Examples of recently enacted legislation include:

All Risks

- Nebraska Legislative Bill 348 (2019)—Updates the state's building code standards to reflect most elements of the 2018 editions of the International Building Code, International Existing Building Code, and International Residential Code.
- New Hampshire House Bill 562 (2019)—Updates the state's building code standards to reflect the 2015 editions of the International Building Code and International Existing Building Code.
- Oklahoma House Bill 3819 (2022)—Creates a Disaster Mitigation and Recovery Matching Fund to support rural mitigation, outline qualifying hazards and structure administration of funds.
- Washington House Bill 1728 (2023)—Creates a statewide resiliency program to coordinate stakeholders and recommend mitigation projects.

Flood

- Florida House Bill 7053 (2022)—Establishes the Statewide Office of Resilience and requires a report on flood resilience and mitigation efforts.
- Florida House Bill 111 (2023)—Requires all publicly funded projects conduct a Sea-Level Impact Projection (SLIP) study and evaluate alternatives.
- New York Senate Bill 7582 (2022)—Requires assessment of current and the recommendation for future building codes in relation to mitigating flood damage.
- North Dakota House Bill 1098 (2023)—Precludes the disbursement of state flood disaster assistance funds to communities that fail to adopt or enforce floodplain management ordinances.

- Virginia Senate Bill 551 (2022)—Implements recommendations from the Coastal Resilience Master Plan, requiring updates every five years, and tasks the Department of Conservation and Recreation with developing a statewide Flood Protection Master Plan.

Wildfire

- California Senate Bill 70 (2019)—Requires each electrical corporation's wildfire mitigation plan to include a description of where and how the corporation considered undergrounding electrical distribution lines within service territories identified to have the highest wildfire risk in a Commission fire threat map.
- Colorado House Bill 1011 (2022)—Establishes a state grant program that provides funding to local governments that dedicate resources for wildfire mitigation purposes.
- Utah House Bill 261 (2023)—Creates the Wildland-urban Interface Prevention, Preparedness, and Mitigation Fund to cover associated costs within the state and provide for fire department assistance grants.

Heat and Drought

- California Assembly Bill 2238 (2022)—Directs the development of a statewide extreme heat ranking system.
- Oklahoma House Bill 2293 (2023)—Creates the Oklahoma Flood and Drought Management Task Force, which is to develop and recommend state drought and flood response, recovery, and mitigation initiatives.
- Washington House Bill 1138 (2023)—Provides for grants for eligible public entities to reduce current or future hardship caused by water unavailability stemming from drought conditions.

High Wind

- Florida House Bill 881 (2023)—Expands accessibility to hurricane mitigation grants under the My Safe Florida Home Program.
- South Carolina Senate Bill 500 (2023)—Amends the hurricane damage mitigation program by establishing grant criteria, clarifying availability of matching funds for local governments, and removes certain grant caps.

Seismic

- Utah House Bill 532 (2023)—Modifies construction and fire codes, to include certain seismic provisions.
- Washington Senate Bill 5933 (2022)—Creates the school seismic safety grant program to help school districts and state-tribal education compact schools cover the cost of retrofitting or relocating school facilities located in high seismic areas or tsunami zones.

Federal Policy Support

In recent years, federal policies have incorporated resilience into disaster policy, focusing on fostering resilience at the regional, state and local levels. The response to Hurricane Katrina and the recovery following provided vital lessons in the need to improve disaster resilience, helping shift federal policy disaster towards a more proactive approach.

The federal government offers funding mechanisms which enable states to build and maintain critical infrastructure to withstand natural disasters and support initiatives that can help communities become more resilient. By leveraging federal funding for disaster mitigation, states can strengthen the resilience of vulnerable communities and build infrastructure to withstand recurring disasters, ultimately reducing costs and creating safer and more sustainable communities.

To support resilience efforts, states may be able to access federal funds through programs such as those offered by FEMA. In its first year, the agency's Building Resilient Infrastructure and Communities (BRIC) program aimed to proactively invest in community resilience by shifting focus away from reactive disaster spending. The program invests in a variety of mitigation activities with an added focus on infrastructure projects such as nature-based solutions, climate resilience and adaptation, and the adoption of hazard-resistant building codes. As part of BRIC's Technical Evaluation Criteria, applicants can earn points for projects that reach underserved and/or disadvantaged communities or implementing strong building codes. Sonoma County, Calif., for example, leveraged BRIC funding to support wildfire planning and wildfire mitigation activities including hardening structures and critical facilities, fuels management, and establishing defensible spaces, such as natural community buffers.

Additionally, the Infrastructure Investment and Jobs Act funded the Safeguarding Tomorrow Revolving Loan Fund Program, established by the Safeguarding Tomorrow through Ongoing Risk Mitigation (STORM) Act. This program enables states, territories and eligible tribes to establish revolving loan funds for hazard mitigation projects against the effects of severe storms, droughts and wildfires. The program is the first federal revolving loan fund for such purposes, although there are existing State Revolving Loan Funds administered by EPA which also support such resilience goals. Specifically, the Clean Water State Revolving Fund offers low-cost financing for water quality infrastructure projects to communities, aiding in disaster resilience. It's a crucial state-federal partnership and provides financing for various eligible activities to help communities mitigate the effects of natural disasters and extreme weather events. New York, for example, created a Storm Mitigation Loan Program for Clean Water SRF projects following Hurricane Sandy, using congressional funding. Projects funded included flood-proofing critical treatment systems, upgrading and hardening pump stations, and revising infrastructure to reduce the likelihood of backups or flooding of treatment facilities.

Other federal agencies, including the U.S. Forest Service, the National Oceanic and Atmospheric Administration and the U.S. Department of Housing and Urban Development (HUD), offer comprehensive resources and grants for disaster and climate resilience projects. Another example is the HUD Community Development Block Grant – Mitigation (CDBG-MIT) that aims to create a more cohesive federal, state and local effort to address hazard mitigation in ways that reduce the risk of loss of life, injury, damage to property and suffering by lessening the impact of future disasters. North Carolina's Department of Environmental Quality previously utilized CDBG-MIT funding to conduct resilience planning and reduce future losses from disasters. Funding contributed to North Carolina's Resilient Coastal Communities Program and the development of the Division of Mitigation Services Natural Infrastructure Flood Mitigation Program.

Defending Against Disaster

The Department of Defense (DOD) is working to strengthen climate resilience both within and outside the fence line. In 2018, Tyndall Air Force Base sustained a direct hit from Hurricane Michael. After five years and $5 billion in resilience-minded repairs, the Air Force and state of Florida are nearing completion on what has been termed the "installation of the future." This forward-thinking approach is made possible with funding from the DOD Readiness and Environmental Protection Integration (REPI) program. The REPI program preserves military missions by supporting cost-sharing agreements between the military services, other federal agencies, state and local governments, and private conservation organizations to avoid land use conflicts near military installations, address environmental restrictions that limit military activities, and increase resilience to climate change. With expanded authority from Congress, REPI funds off-base projects, such as wildfire risk mitigation and living shoreline construction, designed to protect critical infrastructure and defense access corridors, military personnel and testing or training operations from increasing climate risks. To assist REPI partners in executing projects at a faster rate, the recipient of REPI funds can use such funds as the match or cost-sharing requirement for any conservation or resilience program of any federal agency.

Despite a significant amount of funding being directed towards resiliency measure, the U.S. Government Accountability Office (GAO) recently found that the funding "could be used more effectively," and in way that could better "strengthen disaster mitigation and planning efforts."

A full overview of federal resilience funding can be found here:

- Compendium of Programs and Mechanisms for Funding Infrastructure Resilience (cisa.gov)
- Federal Financial Assistance Programs for Resilience Activities | Department of Energy
- Resilience Project Funding Guide | Department of Defense

Conclusion

States have many options to mitigate the risk of natural disasters and recover more effectively. Resilience planning can come in many forms, offering unique solutions for the individual circumstances of each state. Whole-of-government frameworks allow states to coordinate across jurisdictions and agencies to find areas for improvement and streamline coordination of preparedness and response. Risk disclosure requirements can provide clearer expectations and transparency in transfer scenarios. Bolstering building codes and thoughtful land use planning are broad scale efforts that can pay dividends for years to come. Policies such as voluntary buyouts and state supported insurance programs provide options to incentivize and stabilize circumstances as risks increase. Financing options like revolving loan funds, bonds and green and infrastructure banks provide avenues for states to budget accordingly for mitigation investment and defray disaster response costs.

The federal government offers a variety of options to assist states with mitigation and resilience efforts. Grants, revolving loan funds and technical assistance are some of the ways states can leverage federal resources for resilience projects. This support rounds out how jurisdictions of every level can play a part in reducing risks from natural disasters and work to preserve life and resources.

Appendix:

Federal Resilience Funding Chart

Program Name	Agency	Type	Cost Sharing Agreement	Eligibility*	Description
Assistance for Governments and Private Non-Profits After a Disaster	Federal Emergency Management Agency (FEMA)	Supplemental grant **All hazards*	Yes, federal – non-federal cost share	State governments, territory governments, local governments, tribal governments	This program helps eligible entities address buildings, public work systems, equipment, or other natural features in disaster areas by funding emergency or permanent construction on these structures.
Assistance to Firefighters Grant Programs (AFG)	FEMA	Grant **Wildfire*	Yes, federal – non-federal cost share	Local governments, federally recognized tribal governments	This program provides funds directly to eligible applicants to enhance their response capabilities to, and more effectively protect the health and safety of the public and emergency response personnel from fire and other related hazards. Eligible activities include Wildland Firefighter and Wildland Fire Officer training courses, basic Wildland firefighting equipment, Wildland Personal Protective Equipment (PPE), and Wildland Fire Apparatus.
Building Resilient Infrastructure and Communities (BRIC)	FEMA	Competitive grant **All hazards*	Yes, federal – non-federal cost share	State governments, local governments	This program helps eligible entities that have had a major disaster declaration within the past seven years mitigate extreme weather and natural disaster risks. Specifically, the program incentivizes projects that mitigate risks to public infrastructure and other community lifelines.
Clean Water State Revolving Fund (CWSRF)	Environmental Protection Agency (EPA)	Cooperative agreement / low-cost loan **Flood*	None	State governments, territory governments, local governments, tribal governments	This program helps eligible entities address water quality by providing low-cost financing for infrastructure projects. Previous projects have included those for mitigating stormwater runoff, addressing nonpoint source pollution control, and green infrastructure, among others.
Climate Resilience Regional Challenge	National Oceanic and Atmospheric Administration (NOAA)	Competitive grant / cooperative agreement grant **Flood* **Wind*	None	Coastal state governments, coastal territory governments, coastal local governments, coastal tribal governments	This program helps eligible entities address coastal resilience by funding collaborative projects. These projects can address risk reduction, regional collaboration, equity and help build the entity's capacity to adapt.
Coastal and Estuarine Land Conservation Program	NOAA	Matching funds **Flood*	Yes, federal – non-federal cost share	State governments, local governments	This program helps eligible entities buy threatened lands or secure a conservation easement for coastal and estuarine lands by providing funding.
Coastal Zone Enhancement Program (NCZE)	NOAA	Formula grant **Flood* **Wind*	Unknown	State governments, territory governments	This program provides funding to eligible entities to help them improve their coastal management plans and help ensure coastal communities and resources are protected from and are able to recover after extreme weather.
Community Development Block Grants (CDBG)	United States Department of Housing and Urban Development (HUD)	Grant **All hazards*	Unknown	Local governments **States act as a pass through*	This program provides funding to eligible entities to assist with the improvement of the lives of residents, leverage funds to build community assets, and effectively implement community programs. Projects such as the purchase, construction, or repair of water and sewage systems are eligible.

Program Name	Agency	Type	Cost Sharing Agreement	Eligibility*	Description
Community Development Block Grants – Disaster Recovery (CDBG-DR)	HUD	Supplemental grant **All hazards*	None	State governments, local governments *Administrative/grant distribution role	This program helps eligible entities achieve long-term recovery by helping address unmet needs in communities. Funding is provided to carry out eligible activities that help design and implement recovery programs, address and recover from impacts of disasters, and mitigate future impacts of disasters. Specifically, this program targets infrastructure restoration and disaster recovery after disaster declarations.
Community Development Block Grants-Mitigation (CDBG-MIT)	HUD	Supplemental grant **All hazards*	None	State governments, territory governments	This program provides funding to eligible entities in areas that have been recently impacted by natural disasters and assists these communities with the implementation of activities that help reduce future losses and mitigate risk from natural disasters. Funding can be used for projects that increase community resilience, especially those that address long-term risk to life and property.
Community Wildfire Defense Grant Program	U.S. Department of Agriculture (USDA)	Grant **Wildfire*	Yes, federal – non-federal cost share (waiver requests available)	State governments, local governments, tribal governments	This program provides grants to eligible entities at risk from wildfire to assist in the development or revision of community wildfire protection plans and implementation of the plan's projects.
Disaster Recovery Supplemental	Economic Development Administration (EDA)	Cooperative agreement grant **All hazards*	Yes, federal – non-federal cost share	State governments, local governments, tribal governments **Must have a federal disaster declaration*	This program provides funding to eligible entities to assist with the implementation of projects, including construction, that help communities implement economic recovery strategies over the long term.
Drought Response Program Grants	Bureau of Reclamation (USBR)	Competitive grant / cooperative agreement grant **Drought*	Yes, federal – non-federal cost share	Western state governments, local governments, tribal governments, special district governments	This program provides funding to help eligible entities build resilience to drought by funding activities, such as the development of drought contingency plans, that improve the resiliency of communities and water facilities.
Economic Adjustment Assistance (EAA)	EDA	Competitive grant **All hazards*	Yes, federal – non-federal cost share	State governments, local governments, federally recognized tribal governments	This program provides funding to assist eligible entities in regions undergoing significant adverse economic changes, including those caused by natural disasters, by implementing funding to undertake or complete infrastructure projects. Funding can be used to provide technical, planning, public works, or infrastructure assistance. This program recently awarded $500 million in grants under the American Rescue Plan Act of 2021.
National Coastal Resilience Fund (ECRF)	NOAA / National Fish and Wildlife Foundation (NFWF)	Grant **Flood*	Yes, federal – non-federal cost share	State governments, local governments, federally recognized tribal governments	This program allows eligible entities to use funds to restore, increase, and strengthen natural infrastructure, thus making communities more resilient to extreme weather through the utilization of natural infrastructure to better absorb the impacts and flooding caused by extreme weather. These improvements also help improve wildlife habitats.
Emergency Community Water Assistance Grants (ECWAG)	USDA	Grant **All hazards*	None	Local governments, federally recognized tribal governments	This program assists eligible entities, specifically rural communities, to prepare for and recover from natural disasters that may prevent safe drinking water access.

Program Name	Agency	Type	Cost Sharing Agreement	Eligibility*	Description
Emergency Management Performance Grant (EMPG)	FEMA	Grant **All hazards*	Yes, federal – non-federal cost share	State governments, territory governments	This program helps the emergency management agency of eligible entities with the development and implementation of the National Preparedness System. This support, which includes funding and resources, helps entries address emergency preparedness for all hazards and improves resilience by focusing on the prevention, protection, mitigation, response, and recovery mission areas.
Emergency Operations Center Grant Program (EOC)	FEMA	Grant **All hazards*	Yes, federal – non-federal cost share	State governments	This program helps eligible entities address and improve their emergency management and preparedness capabilities by assisting with the establishment of emergency operation centers. These centers help entities identify and address issues to help ensure the government's continued ability to function during disasters.
Emergency Relief Program (ER)	Federal Highway Administration (FHWA)	Matching funds **All hazards*	Yes, federal – non-federal cost share	State governments	This program helps eligible entities repair or rebuild federal aid roads and highways after damage caused by disasters.
Emergency Watershed Protection Program (EWPP)	USDA	Financial assistance **All hazards*	Yes, federal – non-federal cost share	Private and public landowners **Must be sponsored by a state, local, or tribal government*	This program assists eligible entities with natural disaster recovery by addressing impairments to the watershed. Funding can also be used on resilience activities such as the implementation of floodplain easements or property buy-outs in eligible areas.
Fire Management Assistance Grant (FMAG)	FEMA	Grant **Wildfires*	Yes, federal – non-federal cost share	State governments, local governments, tribal governments	This program assists eligible entities with the management and control of fires that if unchecked would constitute a major disaster.
Fire Prevention and Safety (FPandS) Grant Program	FEMA	Grant **Wildfires*	Yes, federal – non-federal cost share	State governments, local governments, tribal governments	This program provides funding directly to eligible entities for fire prevention programs and supports firefighter health and safety research and development. Eligible activities include Wildland Urban Interface (WUI) projects, such as community risk assessments, adoption, or reinstatement of WUI fire codes, and WUI education/awareness projects.
Flood Mitigation Assistance (FMA)	FEMA	Competitive grant **Flood*	Yes, federal – non-federal cost share	State governments, territory governments, local governments	This program is intended to help eligible entities develop and implement projects that address flood and risk mitigation. The funding can be focused on long-term protections for structures insured under the National Flood Insurance Program.
Hazard Mitigation Grant Program (HMGP)	FEMA	Grant **All hazards*	Yes, federal – non-federal cost share	State governments, territory governments, local governments, tribal governments	This program assists eligible entities with the development of hazard mitigation plans and the implementation and construction of risk mitigation projects, which can include infrastructure projects.

Program Name	Agency	Type	Cost Sharing Agreement	Eligibility*	Description
Hazard Mitigation Grant Program Post Fire	FEMA	Non-competitive grant **Wildfire*	None	State governments, territory governments, federally recognized tribal governments **Must have had a fire management assistance grant declaration*	This program assists eligible entities by providing assistance to help mitigate risks caused by wildfires (e.g., flooding, mudflows, and erosion).
Hospital Preparedness Program (HPP)	U.S. Department of Health and Human Services (HHS)	Cooperative agreement **All hazards*	Yes, federal – non-federal cost share	State governments, territory governments	This program helps eligible entities improve their ability to prepare for and response to disasters, especially large-scale disasters. Community resilience is improved by this program's facilitation of healthcare facility partnerships before disasters strike for effective response.
Joint Chiefs' Landscape Restoration Partnership	USDA	Cooperative agreement **Wildfire*	Unknown	State governments, local governments, tribal governments	This program fosters collaboration between the federal government and non-federal eligible entities to invest in conservation and restoration. This program helps reduce wildfire threats to communities, protect water quality and supply, and improve wildlife habitat for at-risk species. It also applies targeted forestry management practices, such as hazardous fuel treatments, fire breaks, reforestation, and other systems to meet unique forestry challenges.
Landscape Scale Restoration Program	USDA	Competitive grant **Wildfire*	Yes, federal – non-federal cost share	State governments, local governments, tribal governments	This program promotes collaborative, science-based restoration of priority forest landscapes and furthers the priorities identified in State Forest Action plans or equivalent restoration strategy.
National Coastal Wetlands Conservation Grants	U.S. Fish and Wildlife Service (USFWS)/ Department of the Interior (DOI)	Competitive grant **Flood*	Yes, federal – non-federal cost share	State governments (coastal and great lake states only)	This program provides funding to eligible entities to assist with the acquisition of coastal or wetland properties and with ecosystem restoration. Specifically, funds are focused on the protection, enhancement, and restoration of coastal wetland ecosystems and other related environments.
National Earthquake Hazards Reduction Program (NEHRP)	FEMA	Non-competitive grant **Seismic*	Yes, federal – non-federal cost share	State governments, territory governments **Must have a high or very high earthquake risk*	This program is intended to help eligible entities mitigate earthquake risks. Eligible activities under this program include seismic mitigation planning assistance, inventory development, building codes and ordinance updates, and critical infrastructure inspections.
Post-Disaster Recovery Grants	EDA	Competitive grant / cooperative agreement **All hazards*	Yes, federal – non-federal cost share	State governments, local governments, tribal governments, special district governments **Must have a federal disaster declaration*	This program assists eligible entities to develop disaster recovery strategies and plans and implement recovery projects, including those that address climate resilient infrastructure.
Pre-Disaster Mitigation Grant Program (PDM)	FEMA	Congressionally directed **All hazards*	Yes, federal – non-federal cost share	State governments, territory governments, federally recognized tribal governments	This program helps eligible entities develop and implement cost-effective measures to reduce disaster risks and improve resilience. This program's goal is to reduce future reliance on federal funding after future disasters.

Program Name	Agency	Type	Cost Sharing Agreement	Eligibility*	Description
Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation Program (PROTECT)	Department of Transportation (DOT)	Competitive grant **All hazards*	Yes, federal – non-federal cost share	State governments, territory governments, local governments, federally recognized tribal governments	This program provides funding to eligible entities to help them mitigate risks posed to surface transportation by disasters and encourage resiliency. Funding can be used to address planning and resilience improvement.
Public Assistance (PA) Program	FEMA	Supplemental grant **All hazards*	Yes, federal – non-federal cost share	State governments, territory governments, local governments, federally recognized tribal governments	This program assists eligible entities post-disaster by funding emergency assistance and infrastructure restoration. This can include implementing cost effective hazard mitigation measures for damaged facilities.
Public Transportation Emergency Relief Program	Federal Transit Administration (FTA)	Matching funds **All hazards*	Yes, federal – non-federal cost share	State governments	This program helps eligible entities repair or rebuild public transportation operations after disasters.
Rail Line Relocation and Improvement Capital Grant Program (RLR)	Federal Railroad Administration (FRA)	Competitive grant **All hazards*	Yes, federal – non-federal cost share	State governments, local governments	This program helps eligible entities mitigate risks posed to rail infrastructure by disasters and help with the lateral or vertical relocations of rail line sections.
Rebuilding American Infrastructure with Sustainability and Equity (RAISE)	DOT	Competitive grant **All hazards*	Yes, federal – non-federal cost share	State governments, local governments, tribal governments	This program provides funding to eligible entities to build and repair critical infrastructure networks, including multi-modal and/or multi-jurisdictional projects.
Regional Catastrophic Preparedness Grant Program (RCPGP)	FEMA	Competitive grant **All hazards*	None	State governments, territory governments, local governments	This program provides funding and resources to eligible entities to assist with the implementation of the National Preparedness System. Specifically, it focuses on the housing, logistics, and supply chain capability gaps and promotes regional solutions, building upon existing efforts, to disasters.
Regional Coastal Resilience Grants	NOAA	Grant **All hazards*	Yes, federal – non-federal cost share	State governments, local governments, tribal governments	This program assists eligible entities with mitigating disaster risk by funding projects that improve resilience strategies or land use planning, or address disaster preparedness, environmental restoration, hazard mitigation, or other planning efforts.
Regional Conservation Partnership Program	USDA	Grant **All hazards*	Yes, federal – non-federal cost share	State governments, local governments, tribal governments	This program provides funding directly to producers and landowners who implement eligible conservation measures or place conservation easements on private lands.
Rehabilitation Of High Hazard Potential Dam Grant Program (HHPD)	FEMA	Grant **Flood*	Yes, federal – non-federal cost share	State governments, territory governments **Must have an enacted dam safety program*	This program assists eligible entities with addressing risks to local communities posed by high hazard potential dams, by providing funding for technical planning, design, and construction.

Program Name	Agency	Type	Cost Sharing Agreement	Eligibility*	Description
Rural Energy for America Program (REAP) Energy Audit and Renewable Energy Development Assistance	USDA	Grant **All hazards*	Yes, federal – non-federal cost share	State governments, local governments, federally recognized tribal governments	This program helps eligible entities (specifically rural small businesses and agriculture producers) by conducting and encouraging energy audits and renewable energy development.
Safeguarding Tomorrow Revolving Loan Fund Program (STORM)	FEMA	Capitalization grants/matching funds **All hazards*	Yes, federal – non-federal cost share	State governments, territory governments, federally recognized tribal governments	This program helps eligible entities establish revolving loan funds to help local governments mitigate disaster risk.
Section 108 Loan Guarantees	HUD	Loan **All hazards*	None	State governments, local governments	This program helps eligible entities use annual grant allocations to access low-cost financing for infrastructure and development projects that increase community resilience to disasters.
Section 40101(D) Formula Grants to States and Indian Tribes	U.S. Department of Energy (DOE)	Formula grant **All hazards*	Yes, federal – non-federal cost share	State governments, territory governments, local governments, federally recognized tribal governments	This program helps eligible entities improve grid resilience in local communities, and the funding can be targeted at both current and future resilience needs.
Special Evaluation Assistance for Rural Communities and Households	USDA	Grant **All hazards*	Yes, federal – non-federal cost share (on a case-by-case basis)	State governments, local governments, federally recognized tribal governments	This program provides funding to eligible entities (specifically, small and disadvantaged rural communities) to assist with the planning and feasibility of waste disposal projects.
Staffing for Adequate Fire and Emergency Response (SAFER) Grant Program	FEMA	Grant **Wildfire*	None	State governments, local governments, tribal governments	Provides funding directly to eligible entities to help them increase or maintain the number of trained, "front line" firefighters available in their communities.
State Energy Program (SEP)	DOE	Competitive grant **All hazards*	Yes, federal – non-federal cost share *Only in areas of interest 1 and 2	State governments, territory governments	This program provides funding and technical assistance to eligible entities to address a community's energy issues by implementing energy efficiency and renewability projects. These projects can include improving energy security, improving energy affordability, and advancing state-led energy initiatives. This program also promotes state specific energy programs.
State Fire Training Grants	US Fire Administration (USFA)	Non-competitive grant **Wildfire*	Unknown	State governments	This program provides eligible entities with annual predetermined funding to bolster the delivery of National Fire Academy classes to career and volunteer fire and emergency services agencies.
State and National Grants	AmeriCorps	Grant **All hazards*	Unknown	State governments, local governments, tribal governments	This program provides funding to eligible entities to help communities prepare for, respond to, and mitigate disaster impacts.

Program Name	Agency	Type	Cost Sharing Agreement	Eligibility*	Description
Water Infrastructure Finance and Innovation Act Program (WIFIA)	EPA	Competitive cooperative agreement/loan *All hazards	Yes, federal – non-federal cost share	State governments, local governments, tribal governments	This program provides funding to eligible entities to finance water and wastewater infrastructure projects.
Water and Waste Disposal Loan and Grant Program	USDA	Cooperative agreement / low-cost loan *All hazards	None	State governments, local governments	This program provides funding to eligible entities to ensure reliable clean drinking water and operable sewage systems and storm water drainage in rural areas.
WaterSMART Environmental Water Resource Grants	USBR	Competitive grant / cooperative agreement *Drought	Yes, federal – non-federal cost share	Western state governments, local governments, tribal governments, special district governments	This program helps eligible entities improve water efficiency and conservation to sustainably save and manage water, mitigate drought impacts, and manage water resources.
WaterSMART Water and Energy Efficiency Grants	USBR	Competitive grant / cooperative agreement *Drought	Yes, federal – non-federal cost share	Western state governments, local governments, tribal governments, special district governments	This program assists eligible entities improve water use efficiencies by helping increase renewable energy production, mitigate water supply and supply sustainability risks, and improve drought resilience.
Weatherization Assistance Program (WAP)	DOE	Formula grant *All hazards	None	State governments, territory governments	This program helps eligible entities improve low-income household resiliency by improving energy efficiency and decreasing energy costs to ensure continued household health and safety.

Note: This list may not include all eligible entities.

NCSL Contact:

environment-info@ncsl.org

7700 East First Place, Denver, Colorado 80230, 303-364-7700 | 444 North Capitol Street, N.W., Suite 515, Washington, D.C. 20001, 202-624-5400

ncsl.org