A FEDERAL POLICY ACTION PLAN TO ACCELERATE LOCAL CLIMATE RESILIENCE

C2ES CENTER FOR CLIMATE AND ENERGY SOLUTIONS

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Communities across the United States are facing catastrophic extreme weather events that are growing in intensity and frequency due to climate change. Improving climate resilience can alleviate the impact of these events, but federal policies and programs fall short of supporting the level of action needed to help communities overcome planning and implementation challenges. This brief provides an action plan for how the federal government can accelerate local climate resilience. This plan includes: working effectively and strategically to administer government resources; providing leadership to address gaps and drive the direction of resilience action; addressing inequities that put low-income and marginalized communities at higher risk; and acting as a strong partner to catalyze resilience action by local, tribal, and state governments and the private sector.

INTRODUCTION

Each year, communities and regions across the United States are facing increasingly catastrophic extreme weather and harmful chronic conditions, including stronger hurricanes, extreme heat, unprecedented drought, sea level rise, and severe wildfires. In 2020, the nation endured a record-breaking 22 disasters, killing 262 people, and inflicting $95 billion in damages.[1] 2021 is on course to break more records, as wildfires, drought, and hurricanes continue to affect U.S. communities. These impacts align with stark climate change projections outlined in the most recent report from the Intergovernmental Panel on Climate Change and the National Climate Assessment and endanger citizens in many areas across the country, both urban and rural. Low-income and marginalized communities, who often live in areas more exposed to climate threats and have fewer resources to prepare for or bounce back from climate-related disasters, often feel the worst impacts. Climate hazards also harm natural ecosystems and economies and drain taxpayer dollars through physical and economic damages and government-funded disaster relief efforts.[2]

Growing costs of climate impacts necessitate transformative measures to prepare our cities, businesses, and communities for a changing climate. With local and state resilience policies taking shape around the country, robust climate data and analytics capabilities, an increasingly engaged private sector, and bipartisan interest at the federal level, this is a pivotal moment for bold federal action on climate resilience.

There are several federal policies and programs specifically intended to build climate resilience at the local level, and a wide constellation of broader policies and programs that *could* build resilience exist, even if that is not the primary goal. This landscape should be viewed as a starting point for a stronger national approach to climate preparedness. Government programs with the primary goal of increasing local resilience are needed. New programs should be designed to fill major gaps, which are becoming increasingly apparent as the climate changes, in what is currently a disjointed federal policy landscape. Existing federal approaches should be assessed for their potential contributions to deeper vulnerabilities and given the room to improve their effectiveness.

This policy brief provides a vision for how federal policy can support and accelerate local resilience-building efforts. We outline the current state of federal resilience policies that influence community resilience and offer an action plan to achieve that vision (see full action plan in **Appendix A**). A number of recommendations aim to build on or expand successful federal programs in the White House and federal agencies, others work to address shortcomings of existing programs and policies, while others serve to fill gaps in the existing policy landscape. This vision focuses on areas of policy that are either explicitly focused on local resilience or hazard mitigation or directly tied to it. Several policy areas such as national security and greenhouse gas mitigation are not included in the action plan, although these are critical elements of a coordinated national climate strategy. Moreover, while many federal policies indirectly help to build community resilience to disasters (e.g., public health programs, nutrition assistance, broadband expansion), these are outside of the scope of this report. The intended audience for these actions includes congressional leaders, the White House, and federal agencies and institutions.

To develop this vision and action plan, The Center for Climate and Energy Solutions (C2ES) conducted a comprehensive literature review and interviewed representatives from all levels of government, organizational leaders, and private-sector experts to understand the landscape of resilience-related policies and their effectiveness. We analyzed recent federal resilience policy recommendations from efforts such as the practitioner-led Resilience 21 initiative and the Resilience Roadmap project led by the Nicholas Institute for Environmental Policy Solutions and Susan Bell & Associates—both aimed at providing the new Administration with an agenda for the next four years—to assess alignment with and gaps in our initial analysis.[3] In June 2021, we facilitated a cross-sectoral dialogue in a virtual workshop to collect feedback on our policy priorities. To encourage candor, the interviews and workshop were conducted under the Chatham House Rule; any attributions in this report are from publicly available sources. A list of the organizations consulted can be found in the **Appendix B**.

FIGURE 1: Federal Resilience Action Plan

- ☑ **Work effectively and strategically to provide government resources.**
- ☑ **Provide leadership to address gaps and drive the direction of resilience action.**
- ☑ **Address inequities that place low-income and marginalized communities at higher risk.**
- ☑ **Act as a strong partner to catalyze resilience action by local, tribal, and state governments and the private sector.**

CURRENT STATE OF FEDERAL RESILIENCE POLICY

The federal government influences local resilience in a variety of ways, including through the services and information it provides, the funding and incentives it offers, the stakeholders with which it coordinates, and the regulations it enforces. Below, we explore the main linkages between federal policy and local resilience, and the successes and shortcomings of the current federal policy landscape.

APPROACH AND COORDINATION

The federal government administers many programs across agencies and government-sponsored entities that have successfully supported local resilience-building, however these programs do not support resilience at adequate levels given the severe and deadly impacts we are already seeing from climate-related extreme weather. Through our interviews with resilience practitioners and experts, C2ES found consensus that the federal government's resilience efforts overall have been decentralized and uncoordinated. Further, government programs are largely reactive to disasters—most federal resilience funds are available to communities only after they have been devastated by severe weather events. This approach leaves people, property, and infrastructure in harm's way. It also misses a significant opportunity to optimize federal spending, given the high costs the government pays for post-disaster relief (totaling at least $450 billion from 2005-2019) and that every $1 federal agencies spend in pre-disaster resilience grants saves on average $6 in recovery costs.[4]

Government programs in some cases actually *increase* climate risks by, for example, incentivizing development in risky areas, or requiring that post-disaster recovery funds be used to build back to the pre-disaster state and not more resiliently. The lack of a dedicated federal strategy for resilience to coordinate these efforts, a shortcoming the Government Accountability Office (GAO) highlighted in 2019, has contributed to this disjointed and reactive approach. President Biden's recent Executive Order 14008 *on Tackling the Climate Crisis at Home and Abroad* increases the Administration's focus on resilience by forming the interagency Climate Task Force and requiring agencies to develop resilience plans for their operations but falls short of establishing the structure and centralized leadership that is needed for a coordinated approach.[5]

INFORMATION FOR CLIMATE RISK ANALYSIS AND PLANNING

To help communities assess and mitigate climate risks, multiple federal agencies collect and provide climate data, models, planning tools, and technical assistance. Key national climate information resources include the National Climate Assessment, the Climate Resilience Toolkit, and the National Centers for Environmental Information (NCEI). It can be difficult, however, for local planners to find the climate information they need and determine how to use it, especially when it is presented at scales that do not identify risks for a specific location.[6] Additional challenges arise around data quality; information is often out-of-date, not available for all communities or at a useful spatial scale, and not forward-looking to include future climate projections. Regionally based, climate-focused programs and services help local decisionmakers distill and tailor information from these national sources and include Regional Integrated Sciences and Assessments (RISAs) run by the National Oceanic and Atmospheric Administration (NOAA), the Department of Interior and United States Geological Survey Climate Adaptation Science Centers, and United States Department of Agriculture (USDA) Climate Hubs. Practitioners and experts interviewed in this research noted the value of these programs, but that local experts managing them are limited in the number of communities they are currently able to serve.

FUNDING FOR RESILIENCE PROJECTS

The federal government provides grant and loan funding to states and local governments for resilience-related projects. Agencies, like the Federal Emergency Management Agency (FEMA) and the Department of Housing and Urban Development (HUD), typically offer resilience funding after a disaster has occurred. The largest share of funding is offered through programs focused on general hazard mitigation, including FEMA's Hazard Mitigation Grant Program, which funds risk mitigation activities like structural elevation, code enforcement, and utility retrofits in areas recently affected by disasters. Further, Community Development Block Grant Disaster Recovery (CDBG-DR) funds from HUD can be used for rebuilding homes, commercial districts, and wastewater facilities to more resilient standards, but the program—and resilience

requirements—is not permanently authorized in statute.[7]

Other significant grant programs can help improve the resilience of communities to climate change before extreme weather strikes. These take a variety of forms, and include, among many others:

- FEMA's Building Resilient Infrastructure and Communities (BRIC) program that funds a variety of hazard mitigation activities with a focus on critical infrastructure
- Department of Energy (DOE) Weatherization Assistance Program (WAP), for weatherizing low-income households
- Environmental Protection Agency (EPA) Clean Water and Drinking Water State Revolving Funds, for green infrastructure or building the resilience of drinking water infrastructure and stormwater management
- Department of Transportation (DOT) Surface Transportation Block Grant Program, for conducting highway vulnerability assessments
- USDA Forest Service Landscape Scale Restoration Program, for forest restoration activities that can build resilience
- NOAA and the National Fish and Wildlife Foundation's National Coastal Resilience Fund, for creating and restoring natural ecosystems in coastal areas to boost flood resilience
- USDA Wetlands Reserve Program, for enhancing wetlands that can provide a buffer to flooding

Demand from communities for these resources is high. For example, in 2020 FEMA received 980 applications for the BRIC program totaling $3.6 billion, but only had $500 million in grants available.[8] The proposed *Infrastructure Investment and Jobs Act* would significantly increase funding over the next five years for a number of these and other resilience-related programs.[9] It would also make amendments to existing programs like the Surface Transportation Block Grant Program to allow program funds to be used for building resilience projects. The Biden Administration has also recently announced large funding increases for Fiscal 2021 for FEMA's BRIC, Hazard Mitigation grant program, and Flood Mitigation Assistance grant program.[10] However, given the immense scale of investment needed, the federal government will need to provide significantly more funding in the coming years for project planning and implementation, as well as grant application assistance and capacity-building for communities that face barriers in applying for federal funds.

A significant gap in federal funding support also exists for certain hazards and needs, including heat and wildfire risks, grid resilience, and managed retreat—the intentional movement of people away from vulnerable areas entirely. For the latter, though prior federal efforts have worked to support communities in planning and carrying out a relocation process, they have seen varying degrees of success and been mostly limited to post-disaster contexts. Any managed retreat efforts led by the federal government could catalyze action in the most vulnerable areas but must be voluntary, community-driven, and given an adequate planning and implementation time horizon.

Funding needs are particularly acute for low-income and marginalized communities in both urban and rural areas, who often face challenges in accessing resources, such as lack of capacity to assess future climate risks, complex application processes, and restrictive local cost-share requirements.[11] Due to these barriers, federal funds from agencies including FEMA, USDA, and the Small Business Administration often flow disproportionately to wealthier communities with more resources. For example, low-income communities are less likely to receive funding for floodplain buyouts, wildfire fuels treatment, and post-disaster assistance. [12] Low-income renters are also at a disadvantage; in some areas, the government has granted renters a smaller percentage than homeowners of individual assistance funding and post-disaster affordable housing assistance.[13] These trends exacerbate historical inequities for low-income communities and communities of color, which are often the most vulnerable to the impacts of climate change due to pre-existing social vulnerabilities, infrastructure and housing disparities, unequal exposure to climate hazards (e.g., they are more likely to live in floodplains and intra-urban heat islands), and unequal access to financial services in the wake of disasters.[14]

SUPPORT FOR FINANCIAL RISK MITIGATION

As physical climate impacts are increasing, communities are also facing significant climate-related financial risks, including threats to overall economic stability and pricing signals that may steer investments away from vulnerable communities and regions. Investors

and municipal bond rating agencies, for example, are starting to factor climate risks into their assessments, which could jeopardize the flow of capital to communities while climate impacts are worsening and necessitate greater resilience investments. Federal regulators have the authority to enact important steps to address these risks, such as oversight of systemic financial risk, public company disclosure, and investor protection, but do not directly regulate municipal disclosure or the methods of credit rating agencies. In addition, private insurance providers are raising insurance rates and dropping coverage in newly determined high-risk areas, pushing people into state insurance pools that offer high-cost, limited coverage. The federal government plays a secondary role to state regulators in addressing risks within the insurance system.

The federal government also has an opportunity to better address climate risks in its own insurance and mortgage programs, like the National Flood Insurance Program (NFIP). NFIP's new insurance pricing methodology, called Risk Rating 2.0, makes significant steps forward in accounting for flood risk at the individual property level, yet rates still do not consider climate projections. In addition, FEMA flood insurance rate maps (FIRMs), which guide local land use decisions, are often outdated and do not cover 40 percent of the country (particularly in rural areas).[15] These shortfalls miss key opportunities for the federal government to support the financial resilience of communities and guide future resilient development.

President Biden's recent Executive Order 14030 *on Climate-Related Financial Risks* takes a significant step by tasking the National Climate Advisor and the Director of the National Economic Council to develop a whole-of-government approach to mitigate climate-related financial risk; direct financial regulators to assess climate-related financial risk; and modernize federal lending, underwriting, and procurement. [16] Additional federal action is needed to build on these steps and implement a robust response that positions local communities for success. The Administration has also taken steps such as revising budgeting direction to agencies and proposing changes to the federal procurement rules on sustainability and carbon reduction; however more progress is necessary on climate adaptation rules and coordination.[17]

BOX 1: The critical role of rapid decarbonization in a climate resilience strategy.

As we strengthen our resilience to the unavoidable impacts of warming already underway, we must work to avoid continuously worsening impacts in the future through aggressive mitigation of greenhouse gas emissions and protection of critical carbon sinks. C2ES outlines the policies needed in the coming decade to put the United States on the path to carbon neutrality by 2050 in our report *Getting to Zero: A U.S. Climate Agenda.*[18] Carbon neutrality will in turn play a critical role in ensuring efforts to prepare for and adapt to climate change have the chance to succeed.

A VISION FOR FEDERAL RESILIENCE POLICY

We are at a pivotal moment for bold climate action; transformative measures are necessary to strengthen and prepare our country, cities, businesses, and communities for a quickly changing climate. C2ES envisions a reality where federal policy supports and enables local resilience efforts at the scale that is needed. This vision includes policies and programs that are accessible and equitable, coordinated across the government, support community-driven action, address unmet needs, and that reduce financial risks while promoting economic competitiveness. The federal government can contribute to the resilience of local communities in many ways, but key among them is positioning itself properly within the broader ecosystem of actors.

Many state and local governments are already producing climate resilience solutions that fit the needs of their local communities, and the federal government's approach should support these efforts and build local capacity. State and local governments are well situated to marshal community resources and engage community members to facilitate strong collaboration and coordination. They are best positioned to facilitate projects on the ground and ensure down-scaled data is accurate. And, their ability to implement local regulations and incentives (e.g., building codes and zoning rules) means that they can facilitate resilient building and rebuilding. For these reasons, it is often efficient for federal resources to flow to communities through state and local governments.[19]

Alongside evolving governmental approaches to resilience, the role of the private sector is quickly growing. Companies are moving to provide analytical and technical planning support and infrastructure solutions to reduce climate risks for local communities and clients. They are positioned to offer valuable expertise, robust data, and innovative and efficient approaches, making them important partners in accelerating resilience. Federal policy can establish incentives that help ensure that these private sector capabilities do not benefit only those that can afford them, but also those communities that are most vulnerable to climate impacts.

Non-profit organizations also provide communities with technical expertise and implementation support, particularly helpful contributions for small communities with low capacity to address climate risks. Some non-profits also offer expertise in and assist resilience planners in applying principles of diversity, equity,

TABLE 1: Recommended Roles for Resilience Stakeholders

FEDERAL GOVERNMENT	STATE AND LOCAL GOVERNMENTS	PRIVATE SECTOR & NGOS	COMMUNITY-BASED ORGANIZATIONS
• Effectively administer government resources • Provide and coordinate leadership • Address inequities • Catalyze and support resilience action at the local level • Build local capacity	• Identify local needs and solutions • Allocate state and federal funding • Build local capacity • Ensure collaboration and coordination at the regional and project level • Guide or mandate resilience action with incentives and regulations	• Provide solutions • Provide expertise • Provide capital • Improve decision-making and implementation	• Ensure local needs are represented • Collaborate with community members to facilitate solutions

and inclusion to their work—knowledge that is critical for implementing equitable resilience solutions and addressing historical inequities.

Community-based organizations serve a critical role in this ecosystem as well. These groups, often comprised of community members, have the best understanding of local climate vulnerabilities and visions for the future. They can help to amplify voices of community members in resilience planning processes involving government entities, the private sector, and other organizations in order to identify strategies that are best suited for a community.

ACTION FRAMEWORK

To address shortcomings and build on prior successes, the federal government should take steps to work effectively and strategically to administer government resources; provide leadership to address gaps and drive the direction of resilience action; address inequities that put low-income and marginalized communities at higher risk; and act as a strong partner to catalyze resilience action by local, tribal, and state governments and the private sector.

Through our research, interviews, and workshop dialogue, we have identified and refined action steps in service of this framework, described in the following sections. Some recommended actions would lead to incremental improvements, whereas others represent more transformative change. For example, establishing a federal task force to identify equity needs and opportunities can lead to beneficial improvements to existing practices while also maintaining the functioning of existing government systems.[20] On the other hand, passing a law that requires that federal actions and disaster response do not lead to deepening inequities would represent a fundamental and systemic change to decision-making across the federal government.[21] For this reason, many recommendations are aimed towards Congress to address the issues at the scale that is needed and to ensure longevity across presidential administrations. Other recommendations outline actions that agencies can implement independently or in the absence of Congressional action.

These recommended actions are meant to position federal action within the broader context of actors that are and will be key in growing resilience to climate change.

1. WORK EFFECTIVELY AND STRATEGICALLY TO PROVIDE GOVERNMENT RESOURCES.

To address the federal government's lack of a comprehensive and coordinated approach for resilience and increase the effectiveness and utility of its services and funding, Congress and agencies should make efforts to bring federal efforts into strategic alignment. Action steps include:

1.1 Create leadership positions for resilience and establish the organizational structure necessary to advance change.

The current Administration has created a National Climate Task Force in the newly formed Office of Domestic Climate Policy and established resilience-focused staff in the Council on Environmental Quality, representing a step in the right direction. Creating a permanent position that exists across administrations to lead the federal effort on resilience could help drive the level of action needed over the long-term. **Congress** should therefore create and fund a federal Chief Resilience Officer (CRO) position in the Executive Office of the President, ideally as a commissioned officer in the White House. Agency-level CRO positions that report to Deputy Secretaries/Administrators should also be created. Both the federal CRO and agency CROs should serve in a federal Resilience Council that guides, coordinates, and tracks implementation of federal resilience action across agencies. The Council should also develop a national resilience strategy, along with a non-federal advisory council, described in Section 4.

1.2 Establish interagency partnerships focused on resilience to enhance coordination, align activities, and create efficiencies for local efforts.

Interdisciplinary collaboration is critical to building resilience because climate risk is deeply tied to existing issues around housing, economic development, public health, and other areas. Our interviews underscored the strong need to break down silos across agencies, foster cross-cutting collaboration, and align activities to increase the effectiveness of the federal government's work. Areas that could benefit from outcome-oriented interagency initiatives based on shared principles include: developing authoritative climate information for use in decisionmaking (see Section 2 for more discussion on the needs for climate information), identifying and assessing local economic risks to climate hazards, planning for displacement, and resilient affordable housing.

Congress and **agencies** should establish and fund partnerships in these areas. New efforts could be modeled after the Partnership for Sustainable Communities, a previous collaborative initiative between HUD, DOT, and EPA that several interviewed experts noted as a productive partnership. This partnership brought together federal agency resources and local knowledge to improve communities' access to affordable housing and transportation options while enhancing environmental quality. The Partnership streamlined the process for accessing federal resources and coordinated the allocation of federal dollars and technical assistance to support local planning efforts and advance infrastructure investments.

1.3 Track agencies' distribution of funds for climate planning and risk mitigation activities to increase federal coordination and align grantmaking with strategic goals.

The federal government allocates hundreds of millions of dollars for hazard mitigation and climate resilience each year through a variety of agency funding programs that focus on resilience as well as more general programs that could be used for resilience-related projects. However, there is no centralized tracking of the various funding programs or how funds are used, if they are used at all. The **Office of Management and Budget (OMB)** should collect and report this information back to agencies, the Administration, and the proposed Resilience Council to aid effective federal decision-making and support agency alignment with strategic goals, such as supporting equitable resource allocation. This tracking could incorporate information from the newly created Environmental Justice Scorecard, which will be used to track performance of the Justice40 Initiative in delivering benefits to marginalized communities. Better information would also facilitate the GAO's recommendation to establish a "federal organizational arrangement to periodically identify and prioritize climate resilience projects for federal investment."[22]

While making the funds available is key, it does not ensure they are spent by states and local communities; for example, recent reports have found that billions of dollars in FEMA's Hazard Mitigation Program have gone unspent over the course of 30 years due to numerous hurdles.[23] Comprehensive spending information would empower federal officials to provide additional support for the use of pre-disaster dollars where needs are identified, further promoting a national shift from a disaster response approach to a risk-mitigation approach.

1.4 Centralize information on available federal funding sources for resilience and establish agency staff dedicated to helping local decisionmakers navigate the landscape of federal funding.

The presence of funding opportunities across many federal government programs that could be utilized for resilience-related projects makes it difficult for local decisionmakers, especially those from small or under-resourced communities, to identify and access funding. To address these challenges, **agencies** should centralize

TABLE 2: Section 1 Summary of Recommendations

WORK EFFECTIVELY AND STRATEGICALLY TO PROVIDE GOVERNMENT RESOURCES		
CONGRESS:	**AGENCIES:**	**ADMINISTRATION:**
• Create leadership positions for resilience and establish the organizational structure necessary to advance change. • Establish interagency partnerships focused on resilience to enhance coordination, align activities, and create efficiencies for local efforts.	• Establish interagency partnerships focused on resilience to enhance coordination, align activities, and create efficiencies for local efforts. • Centralize information on available federal funding sources for resilience and establish agency staff dedicated to helping local decisionmakers navigate the landscape of federal funding.	• Track agencies' distribution of funds for climate planning and risk mitigation activities to increase federal coordination and align grantmaking with strategic goals.

information in a federal resilience funding hub and provide resources to help local stakeholders determine the most suitable programs for their needs. This hub could be located in the already well-used Climate Resilience Toolkit, maintained by the NOAA Climate Program Office.[24] Further, agencies should create resilience liaison positions to conduct outreach with local leaders and coordinate with existing state offices, which would help them navigate and overcome information barriers to access resources.

2. PROVIDE LEADERSHIP TO ADDRESS GAPS AND DRIVE THE DIRECTION OF RESILIENCE ACTION.

The federal government can play a unique role in ensuring that critical issues and unmet needs are addressed, particularly in addressing important gaps around funding, standards for risk management, regulation, climate data, and incentives for critical or emerging solutions. Congress and federal agencies should help drive the direction of resilience by addressing critical gaps in resilience action and facilitate resilience investment at the local level by taking the following actions:

2.1 Increase funding for key pre-disaster resilience programs, including set-asides for low-income and marginalized communities.

Pre-disaster resilience programs protect people and property and are also a smart use of taxpayer dollars given the high costs of frequent and destructive weather events. Though the government has historically provided funding to a few key hazard mitigation-focused grant programs, the total level of funding for them is still insufficient and needs to be sustained year-over-year to meet local needs. **Congress** should therefore significantly increase funding for projects that can take place before disasters occur. These increases should include set-asides to help local governments, especially those representing low-income and marginalized communities, create resilience plans and identify areas and assets that are most at risk. Major programs with strong demand that Congress should increase funding for include the FEMA Hazard Mitigation Grants (including the new BRIC program), the DOE Weatherization Assistance Program, and the EPA Clean Water and Drinking Water State Revolving Loan Funds. Congress should designate set-asides within these programs for projects that address extreme heat, given its threat to public health and underinvestment in such measures.

2.2 Ensure that federal climate information programs offer high-quality data that fills key gaps.

As communities across the United States prepare for their futures through processes like creating local resilience plans, it is important that they have the best information possible. Though multiple federal agencies offer climate information data and products that can be used by local decisionmakers, the information is often out-of-date, inconsistent across agencies, not available for all communities or at a useful spatial scale, and not forward-looking. Further, it can be challenging for local decisionmakers to apply climate information to a specific context. To increase the quality and ease of use of climate information, **Congress** should significantly increase funding for climate data research and multi-agency collaboration. Priorities include: developing higher resolution climate models that provide decision-useful projections of climate hazards for the whole country; updating and expanding key existing sources of climate information, like NOAA's Atlas14, which provides rainfall probabilities that inform FEMA's flood insurance rate maps; and scaling-up satellite remote sensing at NOAA, NASA, and the NSF.

Improved data and public-private partnerships can also be used to support private climate services that create products to meet the special needs of private and public users. The federal government can cultivate this by increasing funding for research and development initiatives that incentivize interdisciplinary collaboration on climate science and decision support research such as those through the NOAA Climate Program Office.

2.3 Build on Executive Order 14030 on *Climate-Related Financial Risk* to ensure that climate risk is effectively managed and mitigated throughout the broader financial system.

To date, the federal government has not played a leading role in climate-related financial risk assessment and management across both its own programs and the broader U.S. economy, despite increased attention to these risks within the private sector and international arena. Financial risk, while distinct from direct physical climate hazards, can have an impact on the local level by affecting overall economic stability and sending pricing signals (e.g, borrowing costs) that can steer investments toward, or away from, communities and regions. A key example of this is the municipal bond market, where cities and counties raise money for infrastructure projects through issuing debt. Investors

both assess the riskiness of purchasing municipal bonds and take cues from credit rating agencies, who assess the creditworthiness of communities, and thus can and are beginning to link local level factors—including climate risk and resilience—to the broader financial markets.

As climate change intensifies, better disclosure of climate risks in municipal bond offerings will improve the accuracy of information available to investors. Some investors may prioritize investments in communities building resilience and support a market where climate risk assessment and disclosure is an expected best practice for local government to undertake. A priority for the **Financial Stability Oversight Council (FSOC)** moving forward should be to evaluate how to guide the development of municipal bond disclosure frameworks given existing regulatory constraints at the federal level. To account for the diversity of the municipal market, disclosure frameworks should be flexible, and not unduly burden low-resourced communities. In tandem with supporting municipal disclosure, the federal government should take steps to protect communities from disinvestment, further outlined in Section 3. Frameworks should take lessons learned from the Task Force on Climate-related Financial Disclosures.[25]

Beyond the municipal debt market, the federal government will play a central role in supporting economy-wide financial climate risk assessment and management, through such actions as macro- and micro-economic risk assessment in the banking system, mandating disclosure requirements for public companies, and undertaking climate risk assessment in federal pension funds, lending, and procurement. The government-wide priorities identified by President Biden's Executive Order *on Climate-Related Financial Risks* are a key opportunity underscored by our interviewed experts to make the strategic links between programs and agencies that impact financial risk, and further identify specific actions that will improve financial resilience at the agency level.[26] These links are critical to build resilience and maintain stability in the financial system as climate-related risks materialize and in preventing widespread climate-related financial crisis. After federal agencies and the FSOC complete the action and risk identification stage outlined by the executive order, the **FSOC** should ensure that climate risk is effectively managed and mitigated throughout the broader financial system, including through its annual report to Congress and ongoing work with member agencies.[27]

2.4 Facilitate disclosure of climate risks to accelerate resilience investments at the community and household level.

Homeownership remains a core component of financial stability for communities across the country, yet there is no federal requirement for the disclosure of previous climate-related impacts, including flooding, when selling a home or property. This exposes property owners to potential risks, both in terms of physical climate hazards and subsequent financial impacts from depreciating property value. To promote awareness of flood risks at the household level, **Congress** should amend NFIP to require better flood risk disclosures in real estate transactions and boost access to flood information in homeowner insurance policies.[28] **FEMA** should also provide states with guidance for requiring landlords to disclose flood risk to potential renters. Doing so would help support a market where rental prices account for the full risks of living at a property.

Currently, federal provisions of insurance for natural disasters occurs primarily for flood risks through NFIP, however, as other risks like wildfires increasingly threaten insurance markets and communities, the federal government should assess how to improve risk disclosure for homeowners across climate-related hazards.

2.5 Better account for climate risk in federal mortgage and insurance programs.

Key federal enterprises and programs that support the national insurance and real estate markets, including Fannie Mae, Freddie Mac, NFIP, and the Federal Crop Insurance Corporation (FCIC) do not currently incorporate the price of climate risk in premiums and loan purchases. Accounting for climate risks can lead to more accurate reflections of financial risk in mortgage and insurance products, sending clearer signals to homeowners about the costs of living in a particular home. To that end, **the Federal Housing Finance Agency (FHFA)** should empower government-sponsored enterprises such as Fannie Mae and Freddie Mac to study flood and other climate risks and incorporate them into their mortgage products.[29] FHFA should also identify potential areas of collaboration, such as analytics provisions, with private mortgage lenders to support the incorporation of climate risks into their products. Any new risk pricing that is implemented should also offer incentives, such as better loan terms for hardening or adaptation action, to support home and business owners in investing in resilience.

Federal insurance program reforms are also needed so that they offer products that better incorporate climate risk in pricing and promote actions to increase resilience. The NFIP's Risk Rating 2.0 system makes significant progress in pricing-in risk by using new flood modeling data to assess risk at the individual property level, but still does not incorporate climate projections.[30] **Congress** should build off the modernization of pricing that Risk Rating 2.0 represents by advancing the incorporation of climate change projections into flood modeling. Alongside any further changes to rates, Congress should implement an affordability program to support low-income households who lack insurance.

Congress should also significantly increase funding for NFIP to update its flood insurance rate maps (FIRMs) using forward-looking climate risk data and create new maps for currently unmapped areas, which account for more than half of U.S. waterways and shorelines.[31] Though Risk Rating 2.0 will replace the use of FIRMs in determining insurance rates, FIRMs are the primary source of flood risk information for communities and inform local land use regulations. Updated maps would help state and local decisionmakers steer public investment to more resilient areas.

2.6 Establish new financing streams and support innovation to unlock resilience investment potential in communities.

There is a current lack of centralized and coordinated resilience financing at the federal level, with program and agency grants representing the largest source of resilience funding to date. In addition to providing funding for new or existing programs as identified in this brief, federally sponsored financing can support local resilience by attracting private capital, supporting innovation through catalytic financing for new solutions, and ensuring equitable access to financial resources.

The Community Development Financial Institutions (CDFI) Fund supports and certifies CDFI's, which are mission driven financial institutions like banks, venture capital funds, and credit unions, that serve marginalized communities. **Congress** should fund the CDFI Fund to establish resilience specific programs that provide catalytic capital and drive resilience across community development finance.[32]

Congress should also capitalize a national green bank with resilience and frontline-specific lending, which would prioritize resilience in eligible bank projects, as described in the C2ES report *Catalyzing Investment with a National Climate Bank*.[33] It should also undertake reforms aimed at incentivizing municipal bond investors to purchase green and resilience bonds, thus developing the green bond market and supporting the flow of funds to local resilience activities.[34]

2.7 Require the use of resilience standards to ensure that federally funded infrastructure projects are prepared for future climate impacts.

Federally funded infrastructure, including transportation infrastructure, affordable housing, and water and wastewater systems, should be built—or rebuilt—to withstand future climate impacts. Doing so would better protect the communities that rely on this infrastructure and make better use of taxpayer dollars. **Congress** should therefore institute resilience standards for federally funded infrastructure, giving flexibility to federal agencies to decide how they will implement them. An immediate step would be for Congress to codify the Federal Flood Risk Management Standard (FFRMS), which requires the use of resilient design standards and forward-looking climate science when building or rebuilding federally funded infrastructure. President Biden recently reinstated the FFRMS through Executive Order 14030 *on Climate-Related Financial Risk*; codifying this standard would ensure that federal agencies apply it in future administrations. Congress should also ensure that federal funds do not facilitate vulnerable development in the areas most at risk from wildfire. While agencies including FEMA and HUD have required wildfire resilience standards, outlined in the International Wildland-Urban Interface Code, for several of their programs, Congress should direct programs across agencies to require use of these codes for federally financed projects.[35]

2.8 Create a program to support voluntary, community-driven managed retreat in the most vulnerable communities.

A number of communities that have suffered recurring losses from hazards like flooding, sea level rise, and wildfire are willing to pursue managed retreat, the intentional movement of people away from vulnerable areas entirely. However, they lack sufficient resources to assess their options and implement plans. **Congress** should establish a federal managed retreat program to support community-driven, pre-disaster relocation that maximizes risk reduction and minimizes future recurring costs across climate hazards. The

program should support state and local planning and identification of federal resources that can be used to support this process; fund community-driven pilot programs; conduct research on best practices and share them widely; create a framework to assess the costs and equity implications of at-risk communities staying in place versus relocating; and conduct ex-post evaluations of managed retreat initiatives. Best practices for potential "receiving" communities that accept migrants from retreating areas should also be provided, to support sustainable growth and affordable housing.[36]

Given that federal disaster relief programs typically prioritize homeowners and can exacerbate socioeconomic inequities when renters are displaced by home buy-out programs, this program should develop a strategy to better assist renters who have already been forced to move or who are interested in leaving high-risk areas. For example, **FEMA** can design incentives and provisions in buy-out programs to assist renters, including requiring that they are eligible to receive a portion of home buy-out funding. Such provisions can help renters cover costs associated with displacement.[37]

2.9 Increase funding for grants and technical assistance to expand the use of nature-based solutions.

A variety of nature-based resilience solutions, used in combination with or as an alternative to traditional grey infrastructure, are effective tools for reducing flood and extreme heat risk in both urban and rural areas. These emerging solutions are underutilized because the methods to estimate and quantify the variety of benefits they provide are nascent and less widely known. However, there is a growing body of evidence that nature-based solutions can be more cost-effective, especially when accounting for environmental and social co-benefits, such as carbon sequestration, water quality, and recreational opportunities.[38] Nature-based projects can also appreciate in value over time (e.g., as trees mature, they can better combat the urban heat island effect), whereas grey infrastructure depreciates. To facilitate the expanded use of nature-based solutions, **Congress** should increase funding for local technical assistance and project implementation. Specific programs that should be expanded include the National Fish and Wildlife Foundation's National Coastal Resilience Fund and the USDA Wetland Reserve Program, both of which provide technical assistance and science-based planning support that facilitate investment in natural infrastructure**.** Congress should also set aside funds specifically for nature-based projects in general resilience and hazard mitigation programs, like FEMA's BRIC. Funding should be made available through these vehicles for project maintenance, as well as monitoring and evaluation, to support longer-term success of nature-based projects and develop a better understanding of their effectiveness.

2.10 Increase funding for forest management, technical assistance, and wildfire resilience planning on federal and non-federal lands.

The now-annual occurrence of massive wildfires with catastrophic and deadly impacts on communities across the Western United States highlights a critical need to improve wildfire resilience. Fuel reduction strategies including prescribed burns and mechanical removal of vegetation can reduce risks, but the number of acres that need treatment far outpace the capabilities of federal agencies, state and local governments, and private landowners. For example, over 100 million acres of federal land is at high risk of wildfire, but in recent years agencies have only treated roughly three million acres.[39] In addition to funding for fuels treatment, state and local governments and private landowners need additional support to assess risks, adopt and enforce land use development codes, develop resilience plans, and carry out other strategies that protect homes and businesses. The funding that Congress would make available through the *Infrastructure Investment and Jobs Act* would represent a relatively large investment in wildfire risk reduction but falls short of the level of support needed to address risks in a robust way. To address these gaps, **Congress** should significantly increase funding for forest management activities, including hazardous fuels reduction, at the U.S. Forest Service (USFS) and Bureau of Land Management. It should also authorize the USFS Community Wildfire Defense Grants program outlined in the *Infrastructure Investment and Jobs Act* to support states and local governments in developing wildfire mitigation plans and implementing resilience projects.

2.11 Invest in power grid modernization and surface transportation infrastructure to enhance the resilience of key assets on which communities depend.

Many types of infrastructure are at risk from climate impacts, but recent disasters resulting from extreme weather have underscored the vulnerability of both

the electric grid and surface transportation systems on which communities rely. To address these vulnerabilities, **Congress** should significantly increase funding for activities that can increase the resilience of electric grids. A new DOE matching grant program for power companies, for example, could assist them in implementing resilience projects. This program should prioritize companies that serve low-income and rural communities, where match requirements should be more flexible. DOE and the Federal Energy Regulatory Commission should also provide guidance to help grid operators better manage weather-related threats and natural disasters.

To support resilience investments in the nation's surface transportation network, **Congress** should authorize the new DOT PROTECT program outlined in the *Infrastructure Investment and Jobs Act* that would fund states to build construction projects that increase surface transportation resilience. The legislation would also amend existing transportation grant programs, including the Surface Transportation Block program and National Highway Performance Program, to include resilience projects as eligible uses. Additionally, Congress should require that transportation projects using these funds be built or rebuilt with resilience in mind.

TABLE 3: Section 2 Summary of Recommendations

PROVIDE LEADERSHIP TO ADDRESS GAPS AND DRIVE THE DIRECTION OF RESILIENCE ACTION	
CONGRESS:	**AGENCIES:**
• Increase funding for key pre-disaster resilience programs, including set-asides for low-income and marginalized communities. • Ensure that federal climate information programs offer high-quality data that fills key gaps. • Facilitate disclosure of climate risks to accelerate resilience investments at the community and household level. • Better account for climate risk in federal mortgage and insurance programs. • Establish new financing streams and support innovation to unlock resilience investment potential in communities. • Require the use of resilience standards to ensure that federally funded infrastructure projects are prepared for future climate impacts. • Create a program to support voluntary, community-driven managed retreat in the most vulnerable communities. • Increase funding for grants and technical assistance to expand the use of nature-based solutions. • Increase funding for forest management, technical support, and wildfire resilience planning on federal and non-federal lands. • Invest in surface transportation infrastructure and power grid modernization to enhance the resilience of key assets on which communities depend.	• Build on Executive Order 14030 on Climate-Related Financial Risk to ensure that climate risk is effectively managed and mitigated throughout the broader financial system. • Facilitate disclosure of climate risks to accelerate resilience investments at the community and household level. • Better account for climate risk in federal mortgage and insurance programs. • Create a program to support voluntary, community-driven managed retreat in the most vulnerable communities.

3. ADDRESS INEQUITIES THAT PLACE LOW-INCOME AND MARGINALIZED COMMUNITIES AT HIGHER RISK.

It is well-documented that not all communities are equally prepared to withstand climate impacts or to take advantage of available government resources. This can exacerbate inequities and perpetuate risk. To reduce the disproportionate climate risks faced by low-income and marginalized communities, Congress and federal agencies should improve the design of programs to ensure that resilience benefits are available to all:

3.1 Codify a process to ensure that federal resilience programs and disaster response do not contribute to deepening inequity.

Federal support can play a critical role in helping communities prepare for and recover from the impacts of climate change through the provision of much-needed funding, technical resources and assistance, and regulation. However, our research and interviews noted unintended consequences of well-intended federal strategies that could further disadvantage certain vulnerable populations, including low-income communities of color and marginalized rural communities. Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,* was issued to counteract this outcome by requiring federal agencies to identify and address adverse health and environmental effects of agency programs on low-income and minority populations.[40] **Congress** should codify this executive action into law to ensure its consistent implementation, expand the agencies required to participate, and establish a specific directive to consider federal climate resilience and disaster response activities. Furthermore, with or without congressional action, the Interagency Working Group on Environmental Justice created by Executive Order 12898 should partner with community representatives to increase understanding of and identify solutions for how federal action and program design contribute to negative impacts on low-income and marginalized populations. Focus areas should include climate change, climate resilience, affordable housing, urban heat islands, and environmental pollution.

3.2 Update the methodologies the federal government uses to evaluate the cost effectiveness of its investments to avoid biases against projects in low-income communities and the use of nature-based solutions.

The methodologies that the federal government uses for evaluating the cost effectiveness of its investments have been updated in recent years to better account for the real-world benefits and costs of projects; however, our interviewed experts emphasized these improvements still fall short. For example, the use of avoided property damages as a key benefit biases federal investment against communities with lower property values, which are often the ones most in need of resilience support. Analyses also do not account for the full environmental and social benefits of nature-based resilience projects, which often accrue over time.[41] To address these gaps, **OMB** should update its methodologies for evaluating cost effectiveness, including discount rates, to decrease the reliance on property values as a key benefit and account for the appreciating benefits of resilience projects. These updates should guide changes to the ways agencies, including FEMA, the Army Corps of Engineers, HUD, EPA, and USDA, conduct benefit-cost analyses.

3.3 Remove barriers to federal funding for low-income and marginalized communities.

Several barriers consistently prevent low-income and marginalized communities from accessing federal funding, including lack of capacity to develop project plans and cost-share requirements that can be too high for local governments to pay. Eliminating these barriers would facilitate the flow of federal funding to local projects where the need is greatest. **Congress** should institute more flexible cost-share requirements for key grant programs like FEMA's BRIC and the Hazard Mitigation Grant programs and allow the use of other federal funds for local cost-sharing. In addition, Congress and agencies should devote more funding and support through these programs for low-income communities to build capacity and develop resilience and hazard mitigation plans.

Federal hazard mitigation programs use a special designation to be more inclusive of communities that are often overlooked in the distribution of federal funding. Rural communities with less than 3,000 residents and an average per capita income that is up to 80 percent of the national average are designated as "small and impoverished communities" that are eligible for additional assistance. As recommended by stakeholders in a recent FEMA local engagement effort, **Congress** should expand this definition by lowering the current income threshold and recognizing the size of individual tribal communities rather than overall tribal membership.[42]

3.4 Proactively protect low-income and marginalized communities from potential disinvestment.

As the federal government and the private sector continue to incorporate climate-related financial risk in their investment strategies, lending, and procurement, including through improved risk disclosures (for more see Section 2), there is a subsequent risk of credit downgrades and private disinvestment in communities deemed too risky. These communities include places exposed to climate hazards or with concentrated economic activity in industries such as fossil fuels that may soon be regulated by climate policies. Many of these places include historically marginalized, or low- and middle-income communities. To reduce the impact of private disinvestment, **Congress** should empower the Federal Reserve to develop new or adapt existing programs to purchase municipal debt to help facilitate the flow of investments—particularly resilience investments—to vulnerable communities. The **Federal Reserve** should also raise awareness among communities about potential disinvestment through its economic development activities, in tandem with the FSOC guiding the development of municipal disclosure frameworks, outlined in Section 2. To help integrate climate-related equity considerations into regular banking oversight, Congress should update the Community Reinvestment Act (CRA), which requires the Federal Reserve to oversee how banks provide low-income and marginalized communities with adequate financial services to specifically account for environmental and climate justice factors.

4. ACT AS A STRONG PARTNER TO CATALYZE RESILIENCE ACTION BY LOCAL, TRIBAL, AND STATE GOVERNMENTS AND THE PRIVATE SECTOR.

Throughout the course of our research, practitioners stressed the importance of co-ownership and open lines of communication between local communities and those designing federal programs to improve outcomes. The federal government can support accelerated action in communities by taking a collaborative approach and empowering local, tribal, and state governments, as well as the private sector, by taking the following steps:

4.1 Create a non-federal resilience task force to support a bottom-up approach for the development of federal funding opportunities, tools, and resources.

Federal actions and strategy should be guided by input from leaders from communities, tribes, and states who are closest to climate impacts and have a greater understanding of local needs and desired solutions. To establish a stronger feedback mechanism between local communities and the federal government, the **White House** should create a non-federal resilience task force to collaborate annually with the proposed Federal Resilience Council (outlined in Section 1), including in the development of a national resilience strategy. This task force should include elected officials from state, local, tribal, and territorial governments and directly engage stakeholders from community groups, non-profit organizations, and the private sector. To the maximum extent practicable, members of this task force should

TABLE 4: Section 3 Summary of Recommendations

ADDRESS INEQUITIES THAT PLACE LOW-INCOME AND MARGINALIZED COMMUNITIES AT HIGHER RISK		
CONGRESS:	**AGENCIES:**	**ADMINISTRATION:**
• Codify a process to ensure that federal resilience programs and disaster response do not contribute to deepening inequity. • Remove barriers to federal funding for low-income and marginalized communities. • Proactively protect low-income and marginalized communities from potential disinvestment.	• Remove barriers to federal funding for low-income and marginalized communities. • Proactively protect low-income and marginalized communities from potential disinvestment.	• Update the methodologies the federal government uses to evaluate the cost effectiveness of its investments to decrease barriers to funding for low-income and marginalized communities and the use of nature-based solutions.

represent diverse perspectives and demographics, including geographic diversity.

4.2 Expand existing regionally focused, multi-disciplinary centers and programs to support local and regional climate risk assessment.

Partnerships between federal agencies and local decisionmakers and communities can help drive climate risk assessment and resilience planning. The local presence of regionally focused programs like NOAA-NCEI Regional Climate Centers, DOI-USGS Climate Adaptation Science Centers (CASCs), Landscape Conservation Cooperatives, and USDA Climate Hubs, for example, are key resources for developing co-produced, localized climate information, which our interviewed experts emphasized. **Congress** should increase funding for these programs so that they can serve more communities and allow for monitoring and evaluation of resilience projects. This funding should include increased support for Regional Tribal Climate Resilience Liaisons based at CASCs, who engage with and provide technical assistance to tribal communities. Through these programs, **agencies** should prioritize building local capacity to incorporate climate information into decision making (e.g., by providing training around assessing the benefits of resilience actions on future climate risks) and incorporating information on local community vulnerabilities into risk assessments (e.g., through training on federal tools such as EJSCREEN or the planned Climate and Environmental Justice Screening Tool under the Justice40 Initiative).

4.3 Increase funding for federal programs that facilitate collaboration on resilience across sectors and multiple levels of government.

Multi-stakeholder partnerships are critical to building resilience because they can leverage local-level knowledge and experiences alongside resources and expertise from all levels of government, the private sector, and non-profit stakeholders in support of shared resilience goals. It takes significant time and resources, however, to administer these initiatives, so federal funding can be critical in establishing them and ensuring continued coordination. **Congress** should increase funding for agencies to participate in collaborative assistance efforts, like the Silver Jackets program, that allows federal experts to support state and local resilience planning and implementation. **Congress** should also use CDBG-DR funding to catalyze large-scale, multi-stakeholder partnerships focused on resilience issues in particular regions. Such initiatives could be similar to the post-Hurricane Sandy Rebuild by Design initiative, which was funded with CDBG-DR funds, and noted by several of our interviewees as a successful program that leveraged resources across stakeholders to accelerate resilience action.[43]

TABLE 5: Section 4 Summary of Recommendations

ACT AS A STRONG PARTNER TO CATALYZE RESILIENCE ACTION BY LOCAL, TRIBAL, AND STATE GOVERNMENTS		
CONGRESS:	**AGENCIES:**	**ADMINISTRATION:**
• Expand existing regionally focused, multi-disciplinary centers and programs to support local and regional climate risk assessment. • Increase funding for federal programs that facilitate collaboration on resilience across sectors and multiple levels of government. • Amend key post-disaster recovery funds to help communities build back more resiliently.	• Expand existing regionally focused, multi-disciplinary centers and programs to support local and regional climate risk assessment.	• Create a non-federal resilience task force to support a bottom-up approach for the development of federal funding opportunities, tools, and resources.

4.4 Amend key post-disaster recovery funds to help communities build back more resiliently.

Post-disaster grant programs play an important role in helping communities rebound from natural disasters, but it is critical that these grants position communities to be more resilient in a climate-changed future. To do this, administrative burdens for local governments to access funding must be low, which can be facilitated by allocating more funding directly to local governments. To not miss critical windows of time during which rebuilding occurs, funding must flow quickly to communities after disasters strike. Funds should also only support structures being built back more resiliently, not to a pre-disaster state. This can be catalyzed by more federal support for pre-disaster resilience planning.

Congress can implement these principles through key programs, such as the CDBG-DR program. The program has been beneficial through its provision of significant amounts of funding that can be used flexibly. However, unlike other disaster programs, it is not permanently authorized and Congress funds it through ad hoc appropriations that have differing requirements, which results in funding delays.[44] To address these issues, **Congress** should permanently authorize and fund the CDBG-DR program with resilience requirements. So that communities are prepared to rebuild more resiliently after disasters occur, the program should also provide communities with sustained technical assistance and funding for pre-disaster resilience planning. CDBG-DR is also well-suited to provide set-aside funding for enhancing the resilience of affordable housing.

Another important post-disaster funding program, the Federal Highway Administration (FHWA) Emergency Relief (ER) Program, currently allows for repeatedly damaged facilities to be built back to their pre-disaster state. **Congress** should require that permanent and non-emergency projects that use ER funds incorporate resilience features to the extent possible, such as natural infrastructure, road relocation out of floodplains, and increasing the size of drainage systems.

CONCLUSION

As extreme weather continues to harm people and property and inflict billions of dollars in costs on households, small businesses, and all levels of government, the need for strong federal action to accelerate community resilience has never been clearer. Without robust action, communities will continue to suffer from these impacts, and local budgets will become more constrained, making actions to increase resilience even more challenging, just as climate risks are increasing.

To address these risks, the federal government must build off past successes and significantly improve its programs and services to support broad-based change at the local level. And although not the focus of this brief, a critical necessary action is the decarbonization of the U.S. and global economy to limit the intensity of climate impacts into the future. Climate mitigation and resilience are both symbiotic and create a multiplying force for positive change and economic growth.

To be successful, federal climate resilience policies and programs must be accessible and equitable, support community-driven action, address unmet needs, be coordinated across relevant federal agencies and programs, and reduce financial risks while promoting economic competitiveness. The recommendations we outline will help the federal government support this vision and its ability to work strategically, fill key gaps, address inequities, and catalyze local-level action.

This response will require activating federal resources across areas of policy, from housing and infrastructure to disaster management and ecosystems protection. Such an interdisciplinary response is needed to address the many ways that climate change will impact our communities and economies moving forward. Coordinating these responses will help bring the necessary expertise and resources to bear to serve the variety of communities across the country.

APPENDIX A: SUMMARY TABLE: A FEDERAL POLICY ACTION PLAN TO ACCELERATE LOCAL CLIMATE RESILIENCE

	CONGRESS	AGENCIES	WHITE HOUSE
WORK EFFECTIVELY AND STRATEGICALLY TO PROVIDE GOVERNMENT RESOURCES.			
1.1 Create leadership positions for resilience and establish the organizational structure necessary to advance change.	●		
1.2 Establish interagency partnerships focused on resilience to enhance coordination, align activities, and create efficiencies for local efforts.	●	●	
1.3 Track agencies' distribution of funds for climate planning and risk mitigation activities to increase federal coordination and align grantmaking with strategic goals.			●
1.4 Centralize information on available federal funding sources for resilience and establish agency staff dedicated to helping local decisionmakers navigate the landscape of federal funding.		●	
PROVIDE LEADERSHIP TO ADDRESS GAPS AND DRIVE THE DIRECTION OF RESILIENCE ACTION.			
2.1 Increase funding for key pre-disaster hazard mitigation programs, including set-asides for low-income and marginalized communities.	●		
2.2 Ensure that federal climate information programs offer high-quality data that fills key gaps.	●		
2.3 Build on Executive Order 14030 on Climate-Related Financial Risk to ensure that climate risk is effectively managed and mitigated throughout the broader financial system.		●	
2.4 Facilitate disclosure of climate risks to accelerate resilience investments at the community and household level.	●	●	
2.5 Better account for climate risk in federal mortgage and insurance programs.	●	●	
2.6 Establish new financing streams and support innovation to unlock resilience investment potential in communities.	●		
2.7 Require the use of resilience standards to ensure that federally funded infrastructure projects are prepared for future climate impacts.	●	●	
2.8 Create a program to support voluntary, community-driven managed retreat in the most vulnerable communities.	●		
2.9 Increase funding for grants and technical assistance to expand the use of nature-based solutions.	●		
2.10 Increase funding for forest management, technical support, and wildfire resilience planning on federal and non-federal lands.	●		
2.11 Invest in power grid modernization and surface transportation infrastructure to enhance the resilience of key assets on which communities depend.	●		
ADDRESS INEQUITIES THAT PLACE LOW-INCOME AND MARGINALIZED COMMUNITIES AT HIGHER RISK.			
3.1 Codify a process to ensure that federal resilience programs and disaster response do not contribute to deepening inequity.	●		

	CONGRESS	AGENCIES	WHITE HOUSE
3.2 Update the methodologies the federal government uses to evaluate the cost effectiveness of its investments to avoid biases against projects in low-income communities and the use of nature-based solutions.			●
3.3 Remove barriers to federal funding for low-income and marginalized communities.	●	●	
3.4 Proactively protect low-income and marginalized communities from potential disinvestment.	●	●	
ACT AS A STRONG PARTNER TO CATALYZE RESILIENCE ACTION BY LOCAL, TRIBAL, AND STATE GOVERNMENTS AND THE PRIVATE SECTOR.			
4.1 Create a non-federal resilience task force to support a bottom-up approach for the development of federal funding opportunities, tools, and resources.			●
4.2 Expand existing regionally focused, multi-disciplinary centers and programs to support local and regional climate risk assessment.	●	●	
4.3 Increase funding for federal programs that facilitate collaboration on resilience across sectors and multiple levels of government.	●		
4.4 Amend key post-disaster recovery funds to help communities build back more resiliently.	●		

APPENDIX B: ACKNOWLEDGEMENTS

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The Center for Climate and Energy Solutions (C2ES) is an independent, nonpartisan, nonprofit organization working to forge practical solutions to climate change. We advance strong policy and action to reduce greenhouse gas emissions, promote clean energy, and strengthen resilience to climate impacts.

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