

WHITE HOUSE SUMMIT ON BUILDING CLIMATE RESILIENT COMMUNITIES

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Table of Contents

Overview.....	3
Readout from Plenary Session.....	4
Welcome and Opening Remarks.....	4
Spotlight Talks: How Federal Programs are Supporting Local Initiatives	4
Panel: Building Climate Resilience from the Ground Up.....	6
Armchair Discussion: Expanding Our View of Climate Resilience	7
Closing Remarks	8
Readout from Roundtable Discussions.....	9
Roundtable 0: Opportunities for a Climate Resilient Nation	10
Key Insights and Takeaways	10
Discussion Synthesis	10
Roundtable 1: Planning and Response.....	11
Key Insights and Takeaways	11
Discussion Synthesis	11
Roundtable 2: Built Environment	13
Key Insights and Takeaways.....	13
Discussion Synthesis	13
Roundtable 3: Catalyzing Investment	15
Key Insights and Takeaways	15
Discussion Synthesis	15
Roundtable 4: Actionable Climate Science and Services	16
Key Insights and Takeaways.....	16
Discussion Synthesis	17
Roundtable 5: Reducing Climate Risk through Nature.....	18
Key Insights and Takeaways.....	18
Discussion Synthesis	19
Roundtable 6: Growing Thriving Communities.....	20
Key Insights and Takeaways.....	20
Discussion Synthesis	22



Overview

On Thursday, September 28, 2023, the Biden-Harris Administration [hosted](#) the White House Summit on Building Climate Resilient Communities. The Summit, which fulfilled a commitment that President Biden made in [June 2023](#), underscored the Biden-Harris Administration's commitment to solutions that will both dramatically reduce greenhouse gas emissions *and* better manage climate threats, and recognized the importance of locally tailored, community-driven strategies in building climate resilience.

The Summit included representatives from more than 25 states, territories, and Tribal Nations, with a focus on climate resilience practitioners— the construction workers, educators, resource managers, city and state resilience officers, emergency managers, local and Tribal leaders, and many others who are striving to help their communities adapt to today's climate impacts and prepare for future climate risks.

The Summit comprised two parts: (1) a [livestreamed plenary session](#), and (2) 13 separate roundtable discussions among Summit participants and senior Administration officials from more than 15 federal departments and agencies focused on needs and opportunities for future climate resilience efforts. Readouts from each component of the Summit are presented below.

In conjunction with the Summit, the Administration released the [National Climate Resilience Framework](#), a vision for a climate resilient Nation designed to guide and align climate resilience investments and activities by the federal government and its partners. The Framework identifies common principles and specific actions to expand and accelerate progress towards six objectives:

1. Embed climate resilience into planning and management.
2. Increase resilience of the built environment to both acute climate shocks and chronic stressors.
3. Mobilize capital, investment, and innovation to advance climate resilience at scale.
4. Equip communities with information and resources needed to assess their climate risks and develop the climate resilience solutions most appropriate for them.
5. Protect and sustainably manage lands and waters to enhance resilience, while providing numerous other benefits.
6. Help communities become not only more resilient, but also more safe, healthy, equitable, and economically strong.

Additionally, the Administration announced more than a dozen new actions—including the awarding or availability of more than \$500 million in dedicated funding—to help build a climate resilient Nation, and commitments from major philanthropies to expand financial support for climate resilience and align investments with national climate resilience priorities. More information about these announcements can be found in [this White House fact sheet](#).



Readout from Plenary Session

Welcome and Opening Remarks

National Climate Advisor (NCA) Ali Zaidi welcomed participants to the Summit. NCA Zaidi emphasized that while the climate crisis is often communicated as a story of doom and gloom, we have an opportunity to retell that story as one of hope and possibilities. Actions by people across the nation are showing that resilience is not an abstract concept—it is being advanced on the ground by treating forests to manage wildfire risk, upgrading the power grid, expanding nature-based solutions, and making homes more energy efficient. NCA Zaidi emphasized that the National Climate Resilience Framework will help align federal and non-federal actions to build climate resilience, while ensuring that those actions are centered on people, equity, and justice.

NCA Zaidi’s remarks were followed by an address from Mayor Satya Rhodes-Conway of Madison, WI. Mayor Rhodes-Conway’s remarks focused on how localities are experiencing climate change, and the role of local governments in responding and adapting to climate threats. Mayor Rhodes-Conway noted that local governments have to deal with both the “disasters and the everyday stressors” of climate change—everything from sea level rise and extreme weather down to buckling pavement and overcrowded community pools during heat waves. To prepare for all of these threats proactively, more and more localities are expanding resilience planning and embedding resilience into infrastructure and investments. The Bipartisan Infrastructure Law and other support from the Biden-Harris Administration has been crucial in enabling these preparedness efforts. Mayor Rhodes-Conway also underscored the importance of centering environmental justice in climate resilience efforts, focusing on protecting those who are hurt “first and worst” by climate change, as well as on the importance of elevating climate-resilience solutions that deliver “multiple wins”—such as job opportunities—for residents. Finally, Mayor Rhodes-Conway called for an “all hands on deck” approach to tackling the climate crisis: one that engages everyone, from community-based organizations to businesses and the private sector to colleges and universities, in both mitigation and adaptation.

Spotlight Talks: How Federal Programs are Supporting Local Initiatives

The Plenary then turned to “spotlight” talks from three federal agency leaders:

- Secretary Deb Haaland, U.S. Department of the Interior
- Chair Shelly C. Lowe (Navajo), National Endowment for the Humanities
- Homeland Security Advisor Liz Sherwood-Randall

Each of these leaders focused on how particular federal agency programs are supporting local initiatives to build climate resilience. Secretary Haaland discussed progress on the Department of the Interior (DOI)’s climate and sustainability strategy, including new detailed approaches and schedules to phasing out single-use plastics on DOI-managed lands. Secretary Haaland also announced that DOI is adopting new policies to integrate climate considerations into internal



operations. These policies will directly reflect DOI’s “strong commitment to using science, Indigenous Knowledge, and landscape-scale management as the foundation for departmental decisions” as our Nation’s public lands face more intense climate impacts. Secretary Haaland concluded by spotlighting two case studies of how DOI is working with partners and local officials to advance climate resilience: one on restoring peatlands in northeastern North Carolina, and one on securing water supplies and strengthening drought resilience in the Gila River Indian Community and the surrounding water basin.

Chair Lowe opened her talk by recounting a conversation she had with Joy Harjo, the former U.S. Poet Laureate. During that conversation, Ms. Harjo observed that “when you see someone or something as a living being the relationship changes.” Chair Lowe commented that thinking of the Earth as a living being can and should influence the way we talk about and approach climate change. Chair Lowe continued by drawing attention to a new strategy that the Administration has developed to incorporate resilience and sustainability into the Nation’s cultural and educational sectors, and to promote basic humanities research and development into the historic roots and cultural effects of climate change. Chair Lowe also noted that the National Endowment for the Humanities (NEH) recently announced the first rounds of awards made under two new grant programs newly created by the Administration to strengthen the connection between climate resilience and the humanities: the Climate Smart Humanities Organizations program and the Cultural and Community Resilience program. These awards will, for instance, support a comprehensive energy and carbon audit at a museum in Anchorage, AK, development of a climate heritage plan to protect historic buildings and neighborhoods in San Antonio, TX, expansion of an oral history collection about community responses to climate change in Puerto Rico, and support for a library system in Mississippi to collect and preserve oral histories and historical materials from six communities at risk of climate-intensified flooding along the Gulf Coast. Finally, Chair Lowe announced NEH’s new Pacific Islands cultural initiative, which will strengthen the cultural and educational sectors of Pacific Island communities that face unique climate challenges due to their geography and historic underinvestment.

Homeland Security Advisor Sherwood-Randall stated that the Administration is focused on building and strengthening community resilience in two ways: (1) by helping communities better withstand the climate impacts through infrastructure investments, and (2) ensuring that communities have the capacity to respond and recover and rebuild more quickly when a disaster hits. Advisor Sherwood-Randall highlighted ways in which the Administration is pursuing both of these goals. For instance, the Federal Emergency Management Agency (FEMA)’s Building Resilient Infrastructure and Communities (BRIC) program has helped elevate properties above historic floodlines and has funded shelters for first responders during extreme weather events. FEMA’s Emergency Management Performance Grant program is also providing state, local, Tribal, and territorial emergency management agencies with resources to prepare ahead of disasters. Department of Energy (DOE) programs are helping communities in places like Maui and Puerto Rico rebuild damaged grid infrastructure in ways that are both higher performing and more climate-resilient. Many agencies provide direct technical assistance to support communities in developing climate risk assessments, hazard mitigation plans, and climate action plans. To close, Advisor Sherwood-Randall noted that the National Security Council is leading a Cabinet-wide effort to “re-envision how we support long-term community building and resilience to both reduce bureaucracy and to coordinate sustained and effective support after the immediate response has been completed.”



Panel: Building Climate Resilience from the Ground Up

White House Council on Environmental Quality (CEQ) Chair Brenda Mallory moderated a panel discussion among three of the Summit attendees:

- Marissa Aho, Climate Director for King County, WA
- Atyia Martin, Convener, Black Resilience Network
- Gerilyn Lopez, Weatherization Auditor and Inspector, MAHUBE-OTWA Community Action Partnership

The discussion amplified the perspectives and insights of these on-the-ground climate resilience practitioners. Chair Mallory kicked off the discussion by asking Dr. Martin what role she sees her organization playing in the implementation of recommendations from the National Climate Resilience Framework. Dr. Martin responded that the Framework reinforces many of the things that Black Resilience Network members have been advocating for, such as a focus on channeling resources to rural communities and smaller jurisdictions. Dr. Martin emphasized the importance of making sure that funding streams from different sources (including different levels of government) are accessible to diverse applicants and can be easily integrated. Chair Mallory then asked Ms. Aho how, based on her experience serving as a resilience officer for several municipalities, different levels of government can coordinate efforts to better meet community needs. Ms. Aho responded by first observing that, as noted in the Framework, community resilience solutions must (i) center individuals and people, and (ii) recognize the boundarylessness of climate impacts. Ms. Aho emphasized that because climate impacts cut across jurisdictions, there is a “weakest link” phenomenon—if one scale isn’t building resilience, then the whole system will fail if tested. This phenomenon speaks to the importance of bringing all parties to the table when decisions are being made. Ms. Aho also echoed Dr. Martin’s point that different jurisdictions have different capacity to pay dedicated attention to resilience—many smaller jurisdictions have just one person who “does it all” when it comes to resilience, and/or for whom resilience is just part of a larger portfolio. Ms. Aho emphasized that we need to look at “all tools in the toolbox” when it comes to supporting these individuals and components in particular. To close the opening round of questions, Chair Mallory asked Ms. Lopez to talk about her work with AmeriCorps and what she sees as key climate resilience workforce needs today. Ms. Lopez stated that the on-the-job training she had access to through AmeriCorps prepared her to assist low-income families and make their homes more safe and energy efficient through weatherization. She went on to share that she wished everyone could see how direct climate resilience work has “such a broad positive impact on our country”, pointing out that weatherization services also include an education component that helps pay benefits forward. Ms. Lopez emphasized the need to replicate and scale the types of workforce training that AmeriCorps provides in order to build a climate resilient nation. Chair Mallory underscored this point, noting that President Biden’s recent launch of the American Climate Corps was designed to meet exactly the need that Ms. Lopez identified.

Chair Mallory then asked the entire panel what they see as the primary opportunities that climate resilience practitioners can advance with respect to whole-of-society approaches to climate resilience. Dr. Martin repeated her point about ensuring that underserved communities have access to climate resilience resources, and pointed out that philanthropy—as a more nimble funding source—can also play an important role in this space. Ms. Aho spoke to the importance of storytelling better both around climate risk and climate opportunity—and, in particular, the



importance of interdisciplinary collaboration in amplifying compelling stories. Ms. Lopez emphasized the role that youth have to play in climate resilience efforts, encouraging attendees to be intentional in bringing youth voices to the table and in incorporating their thoughts and solutions into climate resilience strategies.

Chair Mallory closed the discussion by asking each panelist to use three words to describe a climate resilient future. Ms. Lopez used what she acknowledged was technically four words: “vibrant communities and people.” Ms. Aho responded with “proactive, equitable, thriving,” and Dr. Martin responded with “just, investments-in-communities, humanity.”

Armchair Discussion: Expanding Our View of Climate Resilience

The plenary then transitioned into an armchair discussion moderated by Laura Petes, Chief of Staff for Climate & Environment and Assistant Director for Climate Resilience at the White House Office of Science and Technology Policy. The discussion featured two participants:

- Jainey Bavishi, Deputy Administrator, National Oceanic and Atmospheric Administration (NOAA)
- Admiral Rachel Levine, Assistant Secretary for Health, U.S. Department of Health and Human Services (HHS)

Dr. Petes opened the discussion by asking the participants to share how their experiences working in state and local governments have informed their current roles in federal government. Admiral Levine discussed how specific climate impacts can be to particular communities. For instance, during a trip to northern Alaska, Admiral Levine saw how climate change is expanding habitat of invasive fish, displacing salmon and other fish that are the cornerstone of diets in Indigenous communities. Ms. Bavishi commented that one of her main takeaways from her previous work was “the importance of harnessing the power of people.” Activated community members can keep key climate resilience issues on “the front burner” of attention in policy processes and the media, support each other to strengthen resilience from the bottom up, and provide valuable input to shape climate resilience projects and solutions in ways that avoid pitfalls and respond to local needs. Ms. Bavishi and Dr. Petes both underscored this point with respect to the National Climate Resilience Framework, noting that community feedback and engagement on the Framework will be critical in helping to make its vision a reality.

Dr. Petes then asked the participants to expand on the work of their agencies in building resilience. Ms. Bavishi listed several priorities for NOAA, including working to improve NOAA’s service delivery to support community partners, expanding place-based capacity (such as through the new central Midwest regional team of the Climate Adaptation Partnerships program), and investing in habitat restoration and workforce development. Admiral Levine shared that through HHS’s Office of Climate Change and Health Equity, the agency is working on a national “climate pledge” to motivate hospitals and health systems to improve resilience in the health sector. HHS also offers a resource hub for the health sector that contains federal tools and resources to help hospitals and health systems reduce emissions while strengthening resilience, as well as a monthly “Climate and Health Outlook” that provides granular information on climate-related health impacts for communities nationwide. Finally, Admiral Levine noted



that HHS’s National Institutes of Health (NIH) is working through its first Climate and Health Coordinating Center to amplify the aforementioned and related work.

Dr. Petes concluded the discussion by asking the participants what resilience practitioners across the nation can do to foster “more inclusive and holistic resilience efforts.” Admiral Levine encouraged practitioners to take advantage of funding opportunities in the Inflation Reduction Act to help bolster resilience of the healthcare sector, while Ms. Bavishi reemphasized the call to action around the Framework and the rest of the day’s events—noting that it is “incredibly important” to establish a “two-way dialogue” between federal government and local leaders.

Closing Remarks

The plenary closed with remarks from Senior Advisors to the President John Podesta and Mitch Landrieu, who respectively oversee the White House’s Inflation Reduction Act (IRA) and Bipartisan Infrastructure Law (BIL) implementation teams. Mr. Podesta’s remarks reflected on how evident the impacts of climate change have been in 2023: July 2023 was the hottest month on record, for instance, and the United States set a record for the number of billion-dollar disasters to occur in a single year. Mr. Podesta emphasized that the Biden-Harris Administration is treating climate change as an “existential threat”, and is taking action both by accelerating decarbonization in the United States and by mobilizing a whole-of-government approach to climate resilience. Mr. Podesta described ways in which the IRA is facilitating both goals, and echoed others that partnerships across all sectors will be crucial in maximizing IRA impacts.

Mr. Landrieu opened his remarks by recounting his experience living through Hurricane Katrina while a resident of southern Louisiana, and managing the disaster’s long-term fallout while mayor of New Orleans. Mr. Landrieu noted that in 2015, on the 10-year anniversary of Katrina, the City of New Orleans released what was one of the first resilience plans for a city in the United States. Mr. Landrieu reflected on how far we as a nation have come with respect to resilience since then, noting that resilience “is baked into the DNA” of both the BIL and the IRA. Mr. Landrieu went on to discuss how BIL investments, through the President’s broader Investing in America agenda are building climate resilience and the economy “from the bottom up and the middle out”, not the top down. To give a sense of scale and speed of these investments, Mr. Landrieu observed that over the past eighteen months, the Administration has announced over \$300 billion in funds to support 37,000 infrastructure projects distributed across 99% of the counties in America. Mr. Landrieu closed by noting that these projects collectively are ensuring that “we’re not building it back like it was—we’re building it back the way it should have been. And we’re going to build it in a way that can withstand whatever’s coming our way.”



Readout from Roundtable Discussions

Following the plenary, Summit participants split into groups for roundtable discussions with senior Administration officials on a variety of topics related to climate resilience. These discussions were organized as follows:

- **Roundtable 0: Opportunities for a Climate Resilient Nation**
 - Moderator: John Podesta, Senior Advisor to the President for Clean Energy Innovation and Implementation
 - Topic: Co-investing for climate resilience alongside jobs, workforce, and economic growth
- **Roundtable 1: Planning and Response**
 - Moderators: Vicki Arroyo, Associate Administrator for Policy, Environmental Protection Agency; Victoria Salinas, Senior Official Performing the Duties of Deputy Administrator, Federal Emergency Management Agency
 - Topics: Climate adaptation planning; Emergency preparedness
- **Roundtable 2: Built Environment**
 - Moderators: Samantha Medlock, Assistant Administrator for Resilience Strategy, Federal Emergency Management Agency; Heather Clark, Senior Director for Building Emissions, White House Climate Policy Office
 - Topics: Advancing climate-smart infrastructure; Building climate resilience into planning and guidance
- **Roundtable 3: Catalyzing Investment**
 - Moderator: Heather Boushey, Member, Council of Economic Advisers
 - Topics: Accelerating innovation; Market and financing mechanisms
- **Roundtable 4: Actionable Climate Science and Services**
 - Moderator: Jane Lubchenco, Deputy Director for Climate and Environment, White House Office of Science and Technology Policy
 - Topics: Knowledge co-production; Technical assistance and outreach
- **Roundtable 5: Reducing Climate Risk through Nature**
 - Moderators: Lydia Olander, Director of Nature-Based Resilience, White House Council on Environmental Quality; Gloria Monaño Greene, Deputy Under Secretary for Farm Production and Conservation, Department of Agriculture
 - Topics: Land and water management; Advancing nature-based solutions
- **Roundtable 6: Growing Thriving Communities**
 - Moderators: Alexis Pelosi, Senior Advisor for Climate, Department of Housing and Urban Development; John Balbus, Acting Director, Office of Climate Change and Health Equity, Department of Health and Human Services
 - Topics: Community-driven relocation; Health and community wellbeing

The following pages contain key insights and takeaways and a high-level synthesis for each discussion.



Roundtable 0: Opportunities for a Climate Resilient Nation

Key Insights and Takeaways

- The Administration is working expeditiously to implement Inflation Reduction Act (IRA) and Bipartisan Infrastructure Law (BIL) funding to increase resilience at the local level, and many practitioners were able to share stories of how this influx of federal funding has supported what they do.
- The vast majority of roundtable participants are from communities dealing with issues related to water (drought and flooding), extreme heat, wildfire, and poor air quality, the impacts of which are often felt disproportionately by historically disadvantaged communities.
- Practitioners are also being confronted with dramatic increases in insurance premiums as they work to build resilience to these climate threats.
- The federal government can continue to be a strong partner in building community resilience by: supporting on-the-ground capacity, including increasing the access to and availability of technical assistance; clearly defining and approaching resilience as both the recovery from past and planning for future harms; and bringing the private and philanthropic sectors to the table.

Discussion Synthesis

Participants shared the positive impacts that BIL and IRA have had on their communities. For many of them, BIL and IRA climate resilience provisions have supported underfunded projects and local priorities, many times in historically disadvantaged communities. Examples included funding for hard infrastructure projects to protect against current and future extreme weather events, support for clean and safe drinking water, plus-ups to oversubscribed conservation and climate-smart agriculture programs, and investments in urban forestry to mitigate extreme heat. Participants also spoke about the unique opportunity provided by the direct pay provision in the IRA, which will allow tax-exempt entities (including nonprofits; state, local, and Tribal governments, faith-based organizations, and more) to benefit from clean energy tax credits; this will make it far more affordable for communities to install clean, reliable energy resources, such as solar and battery storage. Overall, many practitioners expressed gratitude for the funding from IRA and BIL for climate resilience and they noted the importance of the investments of the private sector in combatting future harms.

Participants also discussed where the federal government could be doing more for communities and practitioners. Many practitioners discussed the lack of capacity at the local level to apply for grants and other forms of federal funding. In some cases, local governments can only take on or scale so many programs, which can dramatically reduce their ability to seize upon and rapidly implement influxes of funding. Practitioners also described the need for increased availability and accessibility of technical assistance—whether that is identifying and applying to federal funding opportunities, supporting project implementation, or socializing information with communities (e.g., providing materials in languages beyond English).

The challenge of rising insurance premiums also came up several times, with examples provided from across the country. In Florida, insurance premiums have soared to upwards of \$8,000 per



year in some areas—and that is without flood protection. In Texas, insurance providers have been reluctant to renew, and if they do, it comes at a steep price. This is an area that the federal government will continue to engage in, acknowledging how localized the exact situations can be as well as how widespread and difficult the challenge is.

As participants shared their experiences, they reflected on how the federal government must support communities *both* in recovering post-disaster as well as in proactively building resilience to protect from future disasters. In concurrence with this approach, practitioners also expressed the importance of having the federal government meaningfully engage with local practitioners to ensure past harms are not perpetuated with new funding. Finally, participants underscored the need for interagency coordination and cross-sector collaboration, including to make federal guidance and the delivery of funding more effective and efficient. For example, the Administration has the power to bring the private and philanthropic sectors to the table—and garner their financial support—to complement federal and other public investment.

Roundtable 1: Planning and Response

Key Insights and Takeaways

- Communities must be proactive in preparing for and building resilience against climate-related catastrophes.
- The federal government needs to work with State and local governments, the private sector, and philanthropic and non-governmental organizations to help communities build capacity to address natural disasters and longer-term risks posed by climate change, including by helping communities identify, access, and implement funding.
- Community members are the experts on the issues they face and the kinds of solutions required to address them, and as such should be empowered—with the support of the public and private sectors—to take action.
- The federal government can reduce strain on communities by increasing interagency collaboration, and better coordinating resources and outreach.
- Each crisis is unique and there is a role for everyone to play in helping communities plan for and respond to disasters. Shared-ownership of outcome and greater collaboration during planning and response leads to greater equity and efficacy of outcome.
- Integrating climate resilience and adaptation into community planning for both acute and chronic climate risks requires long-term commitments; investments and actions taken now will yield benefits for communities in the present and for generations to come.

Discussion Synthesis

Participants reflected on how all kinds of communities—cities, towns, rural areas—across the country are currently, and expect to continue, experiencing natural disasters and catastrophes. The narrative has shifted away from “will we experience a disaster?” to “*when* will we experience a disaster?” However, communities’ infrastructure and operations are typically designed with day-to-day functioning in mind—not the climate extremes and disasters and longer-term impacts that are increasingly becoming a reality. To complicate matters further, the



risk profile—the type, frequency, and location of disasters—is shifting faster than communities can plan and prepare.

To address this, communities are taking steps to learn from past experiences and implement lessons learned into their future climate resilience planning. For example, in California, local and State governments are pre-positioning firefighters in areas that have been vulnerable to wildfires in the past. Participants emphasized that this kind of proactive thinking needs to be normalized, and that the Federal government has a key role to play in helping communities build capacity and access the funding required to realize and standardize these practices. In particular, the federal government needs to work with State and local governments, the private sector, and philanthropic and non-governmental organizations to help communities track, identify, access, and mobilize funds more efficiently. Participants highlighted the challenges many communities face identifying and applying for federal funding opportunities, and then managing the resources and investing them in a climate-smart way. Participants remarked on the kinds of funding—flexible, outcome-oriented, cooperative, and injected directly into communities through local banks—that are most useful and accessible to communities. Communities best understand their unique circumstances and the approaches required to make progress, and should be empowered accordingly.

In addition to helping build capacity, participants also discussed how the federal government can foster greater interconnectivity and collaboration to reduce strain on local communities. Tribal leaders reflected on the thousands of requests for consultations they receive from the federal government in a given year, and suggested that departments and agencies work together to streamline inquiries and to host a single, annual consultation. In the same vein, participants underscored the need for a singular body—at the local, state, and/or federal level—to help identify and coordinate funding opportunities for communities.

Each crisis is unique and requires a different kind of expertise; as such, everyone—the public and private sectors, schools, volunteers, academia, law enforcement, families and individuals—has a role to play in helping their community prepare for, respond to, and recover from the impacts of climate change. This shared-ownership not only leads to more equitable outcomes that reflect community values, but also ensures that climate resilience and adaptation planning are prioritized and implemented throughout society. Participants reflected on past examples where swaths of society have been effectively mobilized to tackle a crisis like that posed by climate change, and commented that early education and school programs could be especially effective in increasing climate resilience literacy. Moreover, the messenger is often just as important as the message—trusted community sources are vital and can make strides in increasing climate resilience and adaptation planning where government and traditional services have not.

In closing, participants asserted that tackling these issues will require long-term commitments: investments and actions taken now to advance planning and response will not only benefit communities in the present, but for generations to come. However, participants expressed a desire to see a proliferation of State and local resilience plans, modeled after the National Climate Resilience Framework; the announcement of climate change and climate resilience education programs; greater engagement between the public sector and philanthropy; carbon assessments for Tribes and a commitment to become carbon negative; and for communities to continue sharing stories about how they have been impacted by climate change.



Roundtable 2: Built Environment

Key Insights and Takeaways

- Challenges persist in addressing design and land use, and ensuring they are informed by forward-looking projections of climate change impacts.
- There is a need for targeted workforce training programs that provide a variety of options for individuals across sectors and trades to match with opportunities to enhance the resilience of the built environment (e.g., planning, engineering, architecture, lands management)
- Private sector practitioners often rely upon locally-relevant case studies of similar projects to inform project design. There is a need to improve how case studies are documented and disseminated.
- Storytelling remains a powerful yet underutilized tool to highlight and communicate successful approaches that advances in the design and operation of the built environment. This is needed to improve the communication and documentation of benefits of resilient design and increase stakeholder buy-in.

Discussion Synthesis

Participants shared what their organizations have been doing to contribute to a climate resilient nation, and provided ideas and thoughts about what the federal government could be doing to help these communities. Particular focuses of the discussion included boosting climate resilience in buildings, strengthening local engagement and partnerships while connecting with federal government resources, bolstering workforce and community benefits, and ensuring climate resilient lands and waters.

Participants emphasized the need for risk-management approaches that are proactive rather than reactionary. As the climate is an ever-changing factor, organizations must be restructured in a way that recognizes that the climate is not stationary. Maintenance funding is the biggest issue facing some local communities because lifecycle costs for storm resilience is extensive compared to the initial program infrastructure costs.

Participants generally agreed that nature-based solutions must be a priority in the policy planning stage. Investing in nature-based solutions provides ample benefits that organizations would like the opportunity to explore. Local organizations believe that the federal government could create opportunity for the market to invest in nature-based solutions.

Agency representatives identified a number of government programs supporting resilience in the built environment. These include:

- The Department of Transportation's Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT) Grant Program
- The Department of Energy's net-zero buildings program
- The Federal Emergency Management Agency (FEMA)'s Building Resilient Infrastructure and Communities (BRIC)
- FEMA's implementation of the Community Disaster Resilience Zones (CDRZ) Act



Agency representatives noted that the above and many more programs are constantly searching for feedback from organizations and other agencies

Storytelling emerged as a prominent theme during the discussion. Participants emphasized that it is crucial to uplift and promote success stories. Storytelling is an important facet of the climate resilience because it allows people to learn from each other. Storytelling can be a powerful tool to highlight success stories and helps spread helpful information. A federal clearinghouse or portal to share messages and success stories would be welcomed by many agencies and local governments and organizations. It would also be an added benefit if these stories could be shared without having to download case studies.

Finally, participants discussed a number of near-term opportunities for enhancing climate resilience in the built environment. Opportunities discussed include:

- Integrate the social cost of carbon into policies and decisions.
- Develop a “project decarbonization checklist”.
- Consider integrating resilience objectives in workforce development plans.
- Consider integrating resilience objectives in economic development plans.
- Consider integrating nature-based solutions. Existing tools like i-Tree and other GIS tools, which already have extensive support, can be used to analyze information and planning policies. These tools could be further improved (by, for instance, expanding underlying data).
- Consider mass transit as a priority in the planning stage.

Participants also identified a number of specific recommendations, including:

- Address landownership issues, for Tribal communities and for issues of battery energy storage systems.
- Expand programs (like the National Windstorm Impact Reduction Program) to also apply to flooding.
- Address connectivity and broadband issues for rural and underrepresented communities.
- Facilitate stronger communication between state and local organizations, as well as with the federal government.
- Streamline regulatory issues to facilitate connection between local organizations in meeting requirements and navigating application with the federal government.
- Update data as they are based on historic information. Collecting real time data that could be applied to the baseline would help organizations and people prepare for climate disasters.
- Have conversations about streamlining codes and standards among communities.
- Pursue more interagency collaboration.
- Approach resiliency management from a nature-based solution framework.
- Support the federal government in creating a clearinghouse to share messages and uplift successful stories.
- For procurement and contracting, local governments and organizations wants to find a process where there is a federal bench with established and recommended consultants so that smaller jurisdictions can have pre-vetted recommendations.



Roundtable 3: Catalyzing Investment

Key Insights and Takeaways

- The field of resilience must better tell its story, with clear and tangible metrics of success.
 - The National Climate Resilience Framework and this national dialogue can serve as a communications platform for engaging people in resilience space.
 - Targets are needed to drive more investment to the climate resilience space. It is generally harder to define crosscutting targets for resilience than it is for emissions reduction (e.g., the goal of limiting average global warming to 1.5° C). Nevertheless, the market for resilience would benefit from creating a set of targets that could catalyze action and investment.
 - The White House could put forward case studies, as a corollary to the Framework, to articulate what climate resilience is and means in practice.
- To encourage private investment in resilience, we must create a market for it, articulating returns on investment through multiple co-benefits and defined benchmarks for success and impact.
- Investment in community level solutions provides an opportunity to de-risk communities, reduce costs to individual sites, and achieve greater scale in safeguarding communities.
- The increasing unaffordability and unattainability of Property and Casualty insurance across the country makes it a key challenge the federal government must work to solve in concert with states and private sector investment community, while also ensuring decisions for disaster mitigation and climate resilience are culturally-responsive and community-led.
- Identification of climate risk and investment for resilience needs to be part of the underwriting of projects to catalyze and fortify communities and assets. Shifting away from simple one-off fixes, resilient investments must support the maintenance and durability of each project and/or asset throughout its intended service life.

Discussion Synthesis

Participants reflected on the primary barriers to connecting private capital to communities, particularly low income and disadvantaged communities, for bolstering their climate resilience. They explained that “success” in the resilience space requires an entire ecosystem—working across sectors and systems to ensure all aspects of a community are able to cope, adapt, and transform in the face of present and future climate impacts. Moreover, the diversity of challenges and bespoke needs of different communities makes tracking progress and benchmarking success particularly difficult. Through honing the resilience “story,” defining clear metrics of resilience for which each person benefits, participants argued that we are able to better cultivate a “market for resilience” and drive investment forward. The National Climate Resilience Framework is an opportunity to frame a more robust, multi-platform communication strategy.

The conversation shifted to discuss ways the federal government can encourage the increased deployment of private and philanthropic investment and better serve its cross sectoral partners. Participants explained that federal agencies could shift from supporting one off investments to



longer-term incremental investments that ensure durability and maintenance of the project throughout its intended service life. Part of ensuring this durability is encouraging states and municipalities to adopt resilience standards that screen assets for vulnerability to climate-related hazards, and employing more sticks for the use of its federal dollars. Participants emphasized that investments for resilience should be directed to projects that are “climate-worthy,” and that are able to endure climate impacts through the duration of its service life.

Participants then spoke about programmatic structures to create a more enabling environment for the private sector to engage in resilience work. Through encouraging companies to disclose information about climate-related exposures and risks, climate resilience objectives can be better integrated into planning processes and marshal further private investment. As insurance becomes increasingly unaffordable and unattainable across the country, participants discussed how the public sector can encourage the adoption of insurance for reducing risk. One participant proposed that the government incentivize states and cities to adopt insurance plans—citing the “Stafford Act,” which requires the government to pay 85% of the cost in the event of a disaster if mitigation investments have been implemented. Another spoke to the promise of parametric insurance, a type of insurance that covers the probability of a predefined event happening instead of indemnifying actual loss incurred. In pilots in Zambia, crop insurance can be sold within a bag of seed to provide protection to those who could not otherwise afford it. Many highlighted opportunities to utilize nature-based solutions to truncate costs, and to uplift co-benefits of resilience for improving other outcomes, such as health, economy, etc.

Overall, the participants highlighted how resilience—when done right—is robust, and touches various aspects of people’s lives, from the houses they live in to the schools their children attend. It also requires creating co-management governance structures, drawing on the ingenuity and innovation across each community, to address community specific-needs.

Roundtable 4: Actionable Climate Science and Services

Key Insights and Takeaways

- Better-coordinated, easy-to-find, and more usable climate services—at relevant scales—are urgently needed to help inform understanding and action.
- Building sustained relationships of trust between information users and information providers is key to advancing and applying actionable climate information and services.
- There is a need for translators and liaisons, who can work between scientists and communities to assist with navigating and refining information resources, to support decision making.
- The proliferation of climate information and services has made it overwhelming for communities to identify and use relevant information; providing centralized, one-stop-shop resources that can be tailored for local use would be of the highest benefit.
- Localized visualizations and easily understandable resources can help to highlight climate-related vulnerabilities.



- There is a workforce opportunity here, for young people, as well as those later in their careers—training people and providing them with compensation as technical assistance providers who can work and stay in their communities.
- Local partners and community-based organizations can provide important connections and navigational assistance, helping to build relationships and increase knowledge sharing.

Discussion Synthesis

The group discussed opportunities for the federal government to work in partnership with communities on advancing actionable climate information and services. The beginning of the discussion focused on how to advance knowledge co-production, where science providers and science users work hand in hand to advance and co-develop actionable information. The group discussed the importance of having people who are familiar with the community and their needs working there, as well as the importance of mentorship and training for people who are navigating this landscape. Participants raised the need to treat communities as equal partners. Ample resources to support these collaborations can lead to more sustained partnerships, building mutual trust and respect. The concept of “procedural justice” was raised, where community members are empowered to learn about what they want to—and can better access tools that enable them to take action and achieve their goals.

The group discussed resources for supporting communities in navigating climate information and federal support. Participants shared examples of various information resources (such as the Climate Mapping for Resilience and Adaptation, or “CMRA,” portal) and acknowledged that while there are many informational resources, many potential users don’t know about them—or how to identify those that are the most relevant for their decision needs to access and apply information. The same is true of technical assistance provided by federal agencies, such as EPA, FEMA, NOAA, and BIA. The group discussed regional resources and services as a useful scale for coordination—as evidenced through the work of NOAA’s Climate Adaptation Partnerships, for example. Yet, the challenge is scaling up successful models to be able to serve more communities through deep, iterative relationships. Participants identified the need for single points of contact—people who can serve as a “go-to” source of information, connections, and resources, and ideally someone who knows how to navigate tools. Communities can benefit from having a coordinator, who can be the liaison to agencies around funding opportunities and resources, but many communities lack that capacity. Allowing flexibility to support multiple, small communities in the same geography sharing a coordinator would be extremely beneficial. Building regional capacity for young people interested in working on climate also creates career opportunities and engages youth around climate issues in their community. This would also allow youth to help build the future they want to see so they can come back to their communities and stay.

Participants talked about information needs. While many information resources exist, there are still gaps. For example, having information about projected groundwater rise and how that might affect toxic sites is of interest and concern to communities. Many communities want access to localized information (e.g., scenarios). Having ecological trend information that shows habitat change, through visualization, would allow for planning that enhances both community and



ecosystem resilience. In addition, more information is needed about jobs, careers, and training resources, to grow and sustain a climate resilience workforce. This includes integrated career-related programs within the community and at educational institutions.

The group next discussed challenges and opportunities associated with technical assistance. Community-based organizations can be great partners in technical assistance, as they are local and trusted. This is in comparison to state or federal agencies, where there are not always strong or long-term relationships, and the optics can be that they just want to get the work done and leave. Trust, empathy, and shared experiences are needed. Participants discussed ways to “rebrand” technical assistance and think about how to train providers to stay in the community, and an example was shared of training young Tribal citizens. There is no “one-size-fits-all” approach to technical assistance. It is important to build relationships with different types of communities and understand what their unique needs and capabilities, and there needs to be an established relationship before the “ask.” The point was raised that technical assistance isn’t just needed to understand risks or to access funding—but is also needed to support project implementation. Programs like the College/Underserved Community Partnership Program (CUPP) enable colleges and universities to provide technical assistance to communities through student internships, practicums, and capstone projects. Communities receive this assistance and services on a voluntary basis and at no cost, and students gain practical experience in developing solutions to enhance the quality of life for communities.

The need for “translation” of technical information and co-production of technical guidance to improve usability—and having humans who serve as translators who understand community needs—was raised. The power of visualizations, such as those developed by NASA that are relevant to environmental justice communities, was also communicated as an opportunity for making climate information local and tangible. Working to recruit and train a locally knowledgeable workforce, with good-paying jobs, was identified as an opportunity for scaling actionable climate information and services up and out. The group acknowledged that in addition to helping communities understand climate impacts, there is a need to share options for taking action to enhance resilience. Finding ways to maximize efficiencies, for example by having similar requirements across multiple federal funding opportunities, would greatly support communities trying to advance resilience projects. Fostering collaboration across a broad and diverse range of stakeholders would be beneficial for moving communities ahead together and enhancing national resilience.

Roundtable 5: Reducing Climate Risk through Nature

Key Insights and Takeaways

- Nature is more resilient with diversity. It is important to recognize and emphasize the power of diversity (crops, people), and its fundamental role in building resilience; in practice, plant for people and plant even more for nature.
- Redundancy in food systems and food supply chains builds resilience; shared foodways and food security are key. Seed banks are an essential component of resilience for food systems; food security is key to building climate resilience.



- Social infrastructure is an essential part of climate resilience, particularly for the most vulnerable communities (e.g., farm workers and islands).
- All actors, including government agencies, must more effectively foster, create, and support trusted partnerships that focus on the human dimension. Truly innovative partnerships, including a focus on Tribal partnerships, are needed to confront current challenges. These partnerships must recognize that relationships with the land are the core of nature-related resilience work.
- Relationships and the human component underpin resilience. It is important to increase opportunities to build relationships both within and outside of communities. Relationships that span geographies help build resilience. External trusted actors play an essential role during environmental disasters, and these relationships need to be built prior to a disaster.
- We must build and support the workforce needed to support durable, intergenerational resilience and solutions.
- Federal collaboration and streamlining of the interagency process can build nature-based resilience. Part of this collaborative strengthening should come through the creation of regional action committees (e.g., a territorial or island action committee).
- Permitting poses a significant challenge to uptake of nature-based solutions (NBS). The federal permit process needs to be streamlined at the local and state levels, and the speed of permitting processing needs to catch up with the speed of the environmental and climatic changes that we are seeing. We can look to successful examples (e.g., the [San Francisco Bay Restoration Regulatory Integration Team](#)) to figure out how to scale up and scale across.
- Innovation and streamlined processes (such as integrating nature into building codes) are needed to increase NBS implementation. Metrics should be created to assess project impact.
- Efforts to build regional scale NBS are key components of scaling-up impact and building resilience. It is critical that these projects focus on opportunities that address community needs.
- Demonstration of successful NBS exemplifies the strength of NBS. Sharing success stories can help expand NBS uptake.
- Nature-based solutions do not abide by organizational boundaries. Incentives to push NBS co-development are needed. NBS project development should center work, funds, and emphasis on beneficiaries.
- NBS financing presents a challenge. Alternative financing structures are needed. Green banks and community lenders could provide key financial support, as could innovative funding strategies (such as funding pools with partnership/collaboration requirements).

Discussion Synthesis

Participants in this discussion kept coming back to six core themes:

- (1) Food systems and their importance in building resilience;
- (2) The power, strength, and importance of diversity (people, crops, partnerships);



- (3) Challenges presented by the current permitting system regulating NBS implementation and potential solutions;
- (4) The importance of collaboration, partnerships, and relationships for NBS implementation;
- (5) NBS financing and its problems and potential solutions; and
- (6) Key components of successful NBS design and implementation.

Across these six themes, participants raised the cross-cutting considerations of:

- Diversity, in thought, organizations, and project design.
- Innovative thinking, to break out of the impositions of traditional structures (permitting, financing, organizational boundaries).
- Humans as a central element of resilience, in the context of collaboration, partnership-building, social infrastructure, and mental health.

Participants emphasized the tools and knowledge that communities possess—such as the knowledge of their ecosystems and the proven results of certain NBS—and the need for federal agencies to provide support that acknowledges and uplifts these individual and localized strengths. Many community- and regional-level participants stressed the need for greater clarity and ease of access when working with the federal government and noted that something as simple as a clear point of contact for grants, funding opportunities, technical assistance and more would be a game-changer, especially given the often the limited capacity and resources of some partner organizations.

As a conclusion to the roundtable discussion, participants called for federal agencies to:

- Focus on more substantive and more innovative partnerships.
- Create a visual representation (such as a map) showing the agency and partnership networks working on NBS implementation, including naming clear points of contact for interested parties.
- Support and create research-based collaboration.
- Include organizations and community members in processes.
- Emphasize the storytelling component of message delivery.
- Create ways for the federal government to listen and respond to community groups in order to support NBS implementation in recovery plans.

Roundtable 6: Growing Thriving Communities

Key Insights and Takeaways

- Climate relocations are not “one size fits all”. Each case needs to be treated differently and has different drivers, consequences, and funding needs.
- Relocating is extremely traumatizing. How do we get people into affordable housing while allowing them to remain in their own community?
- It’s important that relocating families don’t move back into harms’ way (e.g., either by moving into a new house that is ALSO in a flood plain, or larger scale rebuilding in a



vulnerable place, aka Paradise, CA). Clear criteria for relocation citing are needed. How can we disincentivize building in areas that are not safe?

- We should let cities have the first opportunity to purchase properties for public housing. People experiencing natural disasters are experiencing mental and physical health of people issues, making this a public health crisis: how can we leverage that to connect to health system resources?
- There is a lack of funding and structure for people to start thinking about applying to the relocation process. The current way that funding is determined is damage-based when it should be need-based.
 - Non-competitive geographic areas that don't have high enough damage to meet the threshold for financial assistance is an issue because money is being left on the table.
 - Competitive applications should allow for groups to apply as a regional coalition. This is not currently allowed, but would help with the inequitable distribution of funding by allowing groups in need to apply together to become more competitive.
- One possible solution is to streamline relocation programs to make them interagency so that one application goes to all necessary agencies.
- The opacity and marketing of these programs are not consistent. Why can you sign up for the military tomorrow but it could take hours or days of research to find the right resources to disaster funding?
- Funding should be given to grassroot efforts or small, local organizations with fewer regulatory requirements to serve the people and distribute the funding because THEY know who needs the money—not the federal government.
- The group suggested that there should be a Secretary of Climate Adaptation and Resettlement. There should also be a Climate Adaption Land Trust to ensure the perpetuity of people now and future generations.
- We need to stop assuming that the next disaster won't be as bad as the last.
- Each region needs a comprehensive disaster plan. In order to access funding, you must have comprehensive disaster plans then you'd have a roadmap for the community which would leave to a roadmap of resilience.
- There should be technical assistance for local governments to help with the assessment of evaluating a community's needs.
- There should be community centers of power to enable people who are victim of a disaster. These could be recreation centers, churches, high schools, etc.
 - There could be mental health services next door to the place where you seek guidance for funding
 - Reimagine the purpose of schools and turn it into a place of hope and problem-solving. We should build schools that are healthy, in nature, and community oriented. We can use IRA money to solarizing them, to teach children about clean energy and ways to combat climate change which is going to be one of the biggest crises these kids will ever face in their life.



- Native tribes have knowledge spanning over 500 generations in the same geographic area - they have seen the impacts of climate change. This is an untapped resource for solutions.

Discussion Synthesis

The discussion questions guiding this roundtable were focused on two distinct topics, first, on better supporting Community Driven Relocation in the face of increasing climate hazards, and, second, on integrating health and community wellbeing. While the two topic areas are distinct, discussion flowed between both topics simultaneously, and many linkages were made across the two areas.

First, participants agreed that the need is not “one size fits all” and programs, funding streams, and community engagement and technical assistance needs to be aware of, and reflect that reality. Each case needs to be treated differently and has different drivers, consequences, and funding needs.

Several examples of federal programs were raised, both as examples of best practices and as ways to improve, such as the including the HUD/National Disaster Resilience Competition’s relocation of the Isle de Jean Charles community to FEMA’s Building Resilience Infrastructure and Communities (BRIC) program. In many cases, local communities struggle to access funding that could help them, either because the community lacks resources or organizational/institutional capacities, or simply can’t compete due to size. Participants made the case that more needs to be done to proactively connect communities most in need with the historic funding being made available today by the Bipartisan Infrastructure Law and the Inflation Reduction Act, as well as ongoing annual appropriations.

Participants raised that both affected communities and receiving communities have many significant needs when it comes to relocation, and many of the impacts to communities are health related, both physical and mental. Relocating, whether house by house or an entire community, is traumatizing, and risks uprooting people from their support networks, including health care providers. Often, climate impacts cause both inferior housing conditions (e.g. mold or pest infestation) and/or housing instability, which impacts overall health in myriad ways. Participants raised questions of how to ensure affordable housing is a priority for relocating families and communities.

The group raised roadblocks that small communities sometimes face when federal funding flow through traditional funding mechanisms such as through state or local government agencies. Participants advocated for funding streams that could flow through intermediaries to smaller to grassroots efforts or small, local organizations. The group raised that the benefit to this structure would be to more efficiently be able to serve the people and distribute the funding because they know who needs the money.

Finally, the group raised that the way programs are funded (primarily in a “damage-based” way, post disaster) is less effective than prioritizing funding before a disaster, or focusing resources on future needs vs prior damages, and called on the federal government to do more to think holistically and preventatively to determine funding allocations and availability. Federal funding could be used to help communities proactively develop comprehensive resilience and disaster plans, which could then be used to justify funding needs when applying to disaster resilience and community driven relocation programs.