CREATING A CLIMATE RESILIENT AMERICA: SMART FINANCE FOR STRONG COMMUNITIES

HEARING

BEFORE THE

SELECT COMMITTEE ON THE CLIMATE CRISIS HOUSE OF REPRESENTATIVES

ONE HUNDRED SIXTEENTH CONGRESS

FIRST SESSION

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CREATING A CLIMATE RESILIENT AMERICA: SMART FINANCE FOR STRONG COMMUNITIES

WEDNESDAY, DECEMBER 11, 2019

House of Representatives,
Select Committee on the Climate Crisis,
Washington, DC.

The committee met, pursuant to call, at 2:49 p.m., in Room 210, Cannon House Office Building, Hon. Kathy Castor [chairwoman of the committee] presiding.

Present: Representatives Castor, Bonamici, Huffman, Neguse, Graves, Griffith, Palmer, Carter, and Miller.

Ms. Castor. All right. The committee will come to order.

Without objection, the chair is authorized to declare a recess of the committee at any time.

Communities are on the front lines of the climate crisis, and when it comes to the physical, humanitarian, and financial impacts of this crisis, low-income families and people of color face disproportionately higher risks.

That is why today's discussion will center around making every one of our communities stronger by leveraging Federal funds, private capital, and insurance to increase resilience and accelerate disaster recovery.

I now recognize myself for 5 minutes to give an opening statement.

Local leaders are already taking bold action to protect their communities from the costly impacts of the climate crisis. Action at the local level is one big piece of the climate puzzle, helping to protect our families when climate-fueled disasters hit. The unwavering commitment of cities, states, and businesses to climate action can help the United States significantly reduce emissions, according to a report released this week by America's Pledge.

But in order to solve the climate crisis, we will need a thoughtful, comprehensive approach. We need to make sure that the Federal Government is fully engaged, acting as a robust partner for communities across America, which leaves us with an important question: How do we maximize every Federal dollar spent on protecting American families?

That is what we are discussing today. We will examine how Congress can make sure no community gets left behind by emphasizing innovative finance, prioritizing resilience, and accelerating recovery in the places that need it most.

Since 2005, the Federal Government has spent almost a half-trillion dollars in disaster assistance after extreme weather events. Whether it is catastrophic hurricanes that we know all too well, flooding in the Midwest, or wildfires in the West, the Federal Government is increasingly stepping in to respond to natural disasters.

While it is vital that we continue to help communities after disasters hit, it is critical that we also focus on increasing resilience and hazard mitigation, which can protect families before disasters happen and help us protect the bottom line as well.

We also need to help local governments become more risk-aware and finance-savvy so they can attract private investment that benefits everyone in their communities, with an understanding that some local communities do not have the resources to do all they should be doing.

The cost of climate inaction is increasing. For example, the National Flood Insurance Program currently owes over $20 billion to the U.S. Treasury. This program is vital for communities to recover from devastating floods, which are unfortunately happening in more places and in some cases lasting longer.

The Federal Government's fiscal exposure from NFIP is one of the reasons that the Government Accountability Office has included climate change risks on its high-risk list. The need for strategic, cost-saving approaches that prioritize resilience and hazard mitigation is clear.

I have had the opportunity in this position to travel to coastal South Carolina, California, Virginia in Hampton Roads. We look forward to getting to Louisiana and Texas. And on a recent committee trip, I spoke with the mayors of two flood-prone cities in south Florida.

One of these cities, Miami Beach, has been able to invest in innovative solutions to reduce flooding, thanks in part to a strong tax base. However, nearby North Bay Village doesn't have the same resources, so when the king tide rolls in, these communities may experience different levels of flooding because of their very different fiscal situations.

So we have to level the playing field for vulnerable communities. We can't let wealth determine how resilient communities are.

One of the problems is that we don't have an objective way to assess a community's ability to bounce back after a disaster, so, in the absence of a uniformly applied metric, the Federal Government may continue to use wealth as a proxy. That means the government may overvalue the benefit of protecting property in wealthy areas while lower-income neighborhoods don't see the same kind of investment.

So I hope today's discussion will identify ways we can help ensure a level playing field and environmental justice across America, especially for low-income communities and communities of color, who are disproportionately affected by the climate crisis.

So we all look forward to hearing your ideas.

At this time, I will recognize the ranking member for 5 minutes for an opening statement.

[The statement of Ms. Castor follows:]

Opening Statement of Chair Kathy Castor

Hearing on "Creating a Climate Resilient America: Smart Finance for Strong Communities"

Select Committee on the Climate Crisis

December 11, 2019

As Prepared for Delivery

Local leaders are already taking bold action to protect their communities from the effects of the climate crisis. Action at the local level is one big piece of the climate puzzle, helping protect our families when climate-fueled disasters hit. The unwavering commitment of cities, states and businesses to climate action can help the United States significantly reduce its emissions, according to a report released this week by America's Pledge.

In order to solve the climate crisis, we will need a thoughtful and comprehensive approach. We need to make sure the federal government is fully engaged, acting as a robust partner for communities across the America, which leaves us with an important question—how do we maximize every federal dollar spent on protecting American families?

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Since 2005, the federal government has spent almost half a trillion dollars in disaster assistance after extreme weather events. Whether it's catastrophic hurricanes, flooding in the Midwest, or wildfires in the West, the federal government is increasingly stepping in to respond to natural disasters.

While it's vital that we continue to help communities after disasters hit, it's critical that we also focus on increasing resilience and hazard mitigation, which can protect families before disasters happen and protect the bottom line as well.

We also need to help local governments become more risk aware and finance-savvy, so they can attract private investment that benefits everyone in their communities—with an understanding that some local communities do not have the resources to do all they should be doing.

The cost of climate inaction is increasing. For example, the National Flood Insurance Program currently owes over 20 billion dollars to the U.S. Treasury. This program is vital for communities to recover from devastating floods, which are unfortunately happening in more places and—in some cases—lasting for months. The federal government's fiscal exposure from the NFIP is one of the reasons that the Government Accountability Office has included climate change risks on its High Risk List.

The need for a strategic, cost-saving approach that prioritizes resilience and hazard mitigation is clear. On a recent committee trip, I spoke with the mayors of two flood-prone cities in South Florida. One of these cities, Miami Beach, has been able to invest in innovative solutions to reduce flooding, thanks in part to a strong tax base. However, nearby North Bay Village doesn't have the same resources. So when the King Tide rolls around, these communities may experience different levels of flooding because of their different fiscal situations.

We must level the playing field for vulnerable communities. We can't let wealth determine how resilient our communities are.

One of the problems is we don't have an objective way to assess a community's ability to bounce back after a disaster. So, in the absence of a uniformly-applied metric, the federal government may continue to use wealth as a proxy. That means the government may overvalue the benefit of protecting property-wealthy areas, while lower-income neighborhoods don't see the same kinds of investments.

I hope today's discussion will identify ways we can help ensure a level playing field and environmental justice across the country, especially for low-income communities and people of color, who are disproportionately affected by the climate crisis. I look forward to hearing your ideas.

Mr. GRAVES. Thank you, Madam Chair.

And, Madam Chair, I want to thank you once again for holding this hearing. And after many hearings, we have gotten to the point now to where we have a bipartisan witness that has written prolifically on Louisiana and our coastal master plan, which is what I used to do.

You have brought in our committee staffer's first cousin and a guru from New Orleans on finance.

While Mr. Wemple did not mention Louisiana in your testimony, I will say your testimony is music to my ears. I love your thought process on how you are moving forward.

And, of course, Ms. McFadden also often mentions Louisiana in her testimony.

But, Madam Chair, as you and I have discussed in the past, this is an area where I do believe that this committee should be spending a lot of time focusing, because it is an area where we absolutely should be on the same page. There is no one in this country, hopefully, that would ever wish disasters and vulnerability upon anyone.

And just like you noted in your opening statement, you and I both have been through traumatic disasters in the communities that we represent, the communities where we live. And they are absolutely awful, including, which none of us can forget, Hurricane Katrina, where we lost 1,500 of our brothers, our sisters, our community members. And it is absolutely unacceptable to allow anything like that to ever happen again.

And so I will say it again: Thank you for focusing so much on this topic. Whether you are a fiscal conservative and you believe the statistics that show anywhere from $3 in cost savings for every $1 you invest or the studies on the high end from the National Institute of Building Sciences which indicates that you get $11 in cost savings for every $1 you invest in pre-disaster mitigation or proactive hazard-mitigation-type investments, or perhaps you are completely on the other side of the spectrum and you care about the impact to our ecological production and our coastal areas and the benefits that that provides to our nation, whether it be seafood, the wetlands, the submerged aquatic vegetation and all the wildlife that that supports, again, we should all be working on this together.

And even if we are there for different reasons, this is an area where it benefits our nation from a fiscal policy perspective, it improves our environment and ecological production, and, mostly importantly, it sustains our important coastal communities, where we have nearly 42 percent of our nation's population currently living.

So I am not going to go on much longer, but I do want to say, I want to thank each of you. I think you all bring an interesting perspective and expertise to the table. I am looking forward to your testimony and, more importantly, looking forward to having dialogue with you and figure out a new path forward for the United States.

So, with that, I yield back.

Ms. CASTOR. Well, thank you very much.

Without objection, members who wish to enter opening statements into the record may have 5 business days to do so.

Now I want to welcome our witnesses. I think the ranking member is correct; we have an outstanding panel today.

Mark Gaffigan works at the Government Accountability Office, where he is the Managing Director for Natural Resources and the Environment. Mr. Gaffigan and his team have an important task:

keeping Congress informed on the use of taxpayer dollars to protect our environment and manage our land and water resources.

Damon Burns is the President and CEO of the Finance Authority of New Orleans, whose aim is to boost economic development and increase climate-resilience projects in Louisiana's most populous city. Mr. Burns has 15 years of experience in public finance, entrepreneurship, economic development, and financial technology.

Chuck Wemple is the Executive Director of the Houston-Galveston Area Council, a regional association of local officials from the Texas Gulf Coast Planning Region. The council works to promote efficient and accountable use of local, state, and Federal tax dollars. Mr. Wemple also served on several state-level disaster recovery policy committees.

Mary McFadden is the Senior Advisor for Resilience at Enterprise Community Partners. Ms. McFadden previously worked at the Department of Housing and Urban Development, where she served as Deputy Assistant Secretary for Grant Programs. She oversaw multiple Federal programs at HUD, including the Community Development Block Grant Program.

Without objection, the witnesses' written statements will be made part of the record.

With that, Mr. Gaffigan, you are now recognized to give a 5-minute presentation of your testimony. Welcome.

STATEMENTS OF MARK GAFFIGAN, MANAGING DIRECTOR, GOVERNMENT ACCOUNTABILITY OFFICE; DAMON BURNS, EXECUTIVE DIRECTOR, FINANCE AUTHORITY OF NEW ORLEANS; CHARLES WEMPLE, EXECUTIVE DIRECTOR, HOUSTON-GALVESTON AREA COUNCIL; AND MARION MCFADDEN, SENIOR VICE PRESIDENT FOR POLICY AND SENIOR ADVISOR FOR RESILIENCE, ENTERPRISE COMMUNITY PARTNERS

STATEMENT OF MARK GAFFIGAN

Mr. GAFFIGAN. Thank you.

Chairwoman Castor, Ranking Member Graves, and members of the Select Committee, good afternoon. Thank you for the opportunity to discuss GAO's recent work on climate resilience and the Federal role.

I have submitted a statement for the record which summarizes our October 2019 report on climate resilience, but I would like to address two points in my opening statement: one, the importance of climate resilience; and the potential Federal Government role.

To the first point, I would like to start out by broadly noting that the Federal Government is on an unsustainable long-term fiscal path. With current debt of $22 trillion and annual deficits approaching $1 trillion a year, the nation's fiscal situation is not healthy.

And speaking of health, while healthcare is a key driver of Federal spending, net interest, already at 8 percent of the budget, $350 billion a year, is expected to eventually become the largest category of Federal spending, including surpassing all non-defense discretionary spending in 4 years.

However, as dire as these projections are for the Federal budget, there are additional unknown fiscal exposures, or risks, outside the budget process that may commit the Federal Government to future spending that is not projected. One such example is disaster assistance.

As Chairwoman Castor pointed out, the Federal Government since 2005 has spent at least $450 billion on disaster assistance. And these reactive, unbudgeted costs are likely to increase as extreme weather events become more frequent and intense due to climate change, as your communities have experienced—thus, the importance of considering these risks and attempting to be proactive in building climate resilience into our communities to protect those communities and to also avoid these future costs.

And as Ranking Member Graves points out, depending on the type of resilience project, the estimates range from $3 to $11 in societal benefits for every $1 invested in resilience. An ounce of prevention truly is worth a pound of cure.

But to my second point, what is the Federal Government's role in all this? First, it is important to note that the Federal Government is one key stakeholder among many that are needed to address this issue. The Federal Government does have expertise and funding to offer, but it doesn't have all the answers, nor does it have excess funding to spare in our unsustainable fiscal situation.

Thus, the importance of the Federal Government engaging with communities who best know their own needs and can help ensure that every Federal dollar counts. State, local, Tribal governments, academia, nonprofits, and the private sector, including businesses and individual citizens, all have important roles to play.

But regarding the particular Federal role in resilience, the Federal Government can contribute in three key areas: as a provider of information, integration, and incentives. But it must start with an overall strategic vision and goals, and that is the part that is missing now.

Consistent with enterprise risk management principles, our report highlights six key steps for identifying high-priority climate resilience projects for the Federal investment. But it starts with step one: the establishment of strategic goals and a Federal structure with the authority to lead, identify and integrate all stakeholders, define responsibilities, and address how the effort will be funded.

This is the key first step that is missing right now. No one is in charge when it comes to identifying and prioritizing climate resilience projects across the Federal Government.

With the establishment of a leading Federal organizational arrangement, the other steps of assessing high-risk areas, identifying and prioritizing projects, efficient implementation, and the monitoring of projects and the evolving climate risk, can follow. Without it, there will be nothing to follow.

That is why we concluded in our report that Congress consider establishing a Federal organizational arrangement charged with the authority to identify and prioritize climate resilience projects for Federal investment, consistent with clear goals.

I look forward to hearing from the other witnesses. I look forward to our discussion and your questions. And I look forward to GAO's continued work to support the work of this committee and the Congress.

Thank you.
[The statement of Mr. Gaffigan follows:]

United States Government Accountability Office

Testimony Before the Select Committee on the Climate Crisis, House of Representatives

Climate Resilience: A Strategic Investment Approach for High-Priority Projects Could Help Target Federal Resources

Accessible Version

Statement of Mark Gaffigan, Managing Director, Natural Resources and Environment

For Release on Delivery, Expected at 2:00 p.m. ET, Wednesday, December, 11, 2019

December 11, 2019

Chairwoman Castor, Ranking Member Graves, and Members of the Select Committee:

Thank you for the opportunity to discuss our recent work on climate resilience and federal investment strategies. Since 2005, federal funding for disaster assistance has totaled at least $450 billion, including a 2019 supplemental appropriation of $19.1 billion for recent disasters. In 2018 alone, 14 separate billion-dollar weather and climate disaster events occurred across the United States, with total costs of at least $91 billion, including the loss of public and private property, according to the National Oceanic and Atmospheric Administration. Disaster costs likely will increase as certain extreme weather events become more frequent and intense due to climate change, according to the U.S. Global Change Research Program, a global change research coordinating body that spans 13 federal agencies.[1]

The cost of recent weather disasters has illustrated the need to plan for climate change risks and invest in climate resilience. In 2013, we included "Limiting the Federal Government's Fiscal Exposure by Better Managing Climate Change Risks" on our list of federal program areas at high risk of fraud, waste, abuse, and mismanagement or most in need of transformation.[2] Enhancing climate resilience means taking actions to reduce potential future losses by planning and preparing for potential climate hazards such as extreme rainfall, sea level rise, and drought. Investing in climate resilience can reduce the need for far more costly steps in the decades to come; therefore, we and others have recommended enhancing climate resilience to help limit the federal government's fiscal exposure to climate change.[3]

Planning for federal investments in climate resilience projects to limit fiscal exposure is no longer a hypothetical issue. The Disaster Recovery Reform Act of 2018 provides one potential source of funding for climate resilience projects.[4] In particular, it allows the President to set aside up to 6 percent of the estimated aggregate amount of grants from certain emergency programs under a major disaster declaration to implement pre-disaster hazard mitigation activities. The Federal Emergency Management Agency (FEMA) will administer the associated program—the Building Resilient Infrastructure and Communities program. As of the date of this testimony, FEMA had not yet developed program guidance, although the agency has

[1] U.S. Global Change Research Program, *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment*, vol. 2 (Washington, D.C.: 2018).

[2] Every 2 years, at the start of a new Congress, GAO reevaluates agency progress in addressing issues on the high-risk list against five criteria to determine if progress has been made. The criteria are: (1) leadership commitment to address the risk, (2) agency capacity to resolve the risk, (3) a corrective action plan to addressing the risk, (4) a program to monitor the effectiveness of corrective measures, and (5) ability to demonstrate progress in resolving the high-risk area. GAO, *High-Risk Series: An Update*, GAO–13–283 (Washington, D.C.: February 2013).

[3] See GAO, *Climate Change: Opportunities to Reduce Federal Fiscal Exposure*, GAO–19–625T (Washington, D.C.: June 11, 2019), *Climate Change: Selected Governments Have Approached Adaptation through Laws and Long-Term Plans*, GAO–16–454 (Washington, D.C.: May 12, 2016), and National Research Council of the National Academies, America's Climate Choices: Panel on Adapting to the Impacts of Climate Change, *Adapting to the Impacts of Climate Change* (Washington, D.C.: 2010).

[4] FAA Reauthorization Act of 2018, Pub. L. No. 115–254, div. D, §§ 1206(a)(3), 1234(a)(5) 132 Stat. 3186, 3440, 3462 (2018). The FAA Reauthorization Act of 2018, which included the Disaster Recovery Reform Act of 2018, became law on October 5, 2018.

sought input from the public on program design.[5] FEMA officials estimate annual funds for the program will average $300 million to $500 million.

My statement today focuses on (1) the extent to which the federal government has a strategic approach for investing in climate resilience projects; (2) key steps that provide an opportunity to strategically prioritize projects for investment; and (3) the strengths and limitations of options for focusing federal funding on these projects. My statement is based on the findings of our October 2019 report on climate resilience.[6] To perform the work for our report, we reviewed about 50 relevant reports and interviewed 35 stakeholders with expertise in climate resilience and related fields, including federal officials, researchers, and consultants. In addition, during the course of this work, we identified domestic and international examples of governments that invested in climate resilience and related projects. We selected two of these examples for in-depth review and presentation in our report: the state of Louisiana's coastal master planning effort and Canada's Disaster Mitigation and Adaptation Fund. Additional information on our scope and methodology is available in our October 2019 report.[7]

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

The Federal Government Has Invested in Projects That May Convey Some Climate Resilience Benefits but Does Not Have a Strategic Investment Approach

As we reported in October 2019, the federal government has invested in projects that may enhance climate resilience but does not have a strategic approach for investing in high-priority climate resilience projects. Some federal agencies have made individual efforts to manage climate change risk within existing programs and operations, and these efforts may convey climate resilience benefits. For example, the U.S. Army Corps of Engineers' civil works program constructs flood control projects, such as sea walls, that could convey climate resilience benefits by protecting communities from storms that may be exacerbated by climate change.

However, even with individual agency efforts, federal investment in projects specifically designed to enhance climate resilience to date has been limited. As we stated in our Disaster Resilience Framework, most of the federal government's efforts to reduce disaster risk are reactive, and many revolve around disaster recovery.[8] As a result, we reported in October 2019 that additional strategic federal investments may be needed to manage some of the nation's most significant climate risks because climate change cuts across agency missions and presents fiscal exposures larger than any one agency can manage. Our analysis shows the federal government does not strategically identify and prioritize projects to ensure they address the nation's most significant climate risks.

In addition, our October 2019 report discusses our past work that shows an absence of government-wide strategic planning for climate change. For example, in our March 2019 update to our high-risk list, we reported that one area of government-wide action needed to reduce federal fiscal exposure is in the federal government's role as the leader of a strategic plan that coordinates federal efforts and informs state, local, and private-sector action.[9] For this 2019 update, we assessed the federal government's progress since 2017 related to climate change strategic planning against five criteria and found that the federal government had not met any of the

[5] According to an October 2019 FEMA Disaster Recovery Reform Act Annual Report, FEMA plans to publish a draft policy for the Building Resilient Infrastructure and Communities program in 2020 for public comment. Furthermore, FEMA anticipates releasing the first Notice of Funding Opportunity in summer 2020 and plans to open the application period in September 2020. See Department of Homeland Security, Federal Emergency Management Agency, *Disaster Recovery Reform Act (DRRA) Annual Report* (Washington, D.C.: October 2019).

[6] GAO, *Climate Resilience: A Strategic Investment Approach for High-Priority Projects Could Help Target Federal Resources*, GAO–20–127 (Washington, D.C.: Oct. 23, 2019).

[7] GAO–20–127.

[8] GAO, *Disaster Resilience Framework: Principles for Analyzing Federal Efforts to Facilitate and Promote Resilience to Natural Disasters*, GAO–20–100SP (Washington, D.C.: October 2019). The principles in this framework can help identify opportunities to enhance federal efforts to promote disaster resilience, including building resilience to climate change.

[9] GAO, *High-Risk Series: Substantial Efforts Needed to Achieve Greater Progress on High-Risk Areas*, GAO–19–157SP (Washington, D.C.: Mar. 6, 2019).

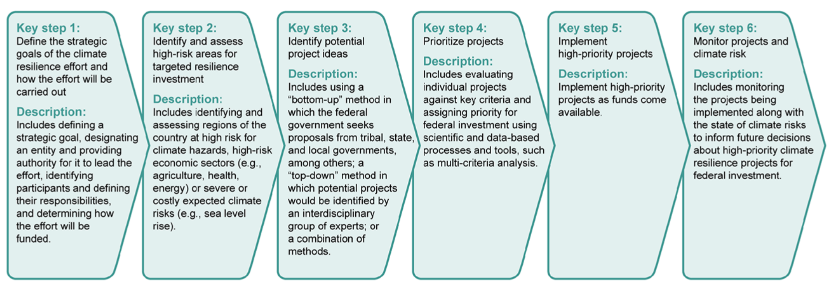
criteria for removal from the high-risk list. Specifically, since our 2017 high-risk update, four ratings regressed to "not met" and one remained unchanged as "not met."

Also, although we have made 17 recommendations that address improving federal climate change strategic planning, as of August 2019, no action had been taken toward implementing 14 of those recommendations—including one dating from 2003. Our enterprise risk management framework calls for reviewing risks and selecting the most appropriate strategy to manage them.[10] However, no federal agency, interagency collaborative effort, or other organizational arrangement has been established to implement a strategic approach to climate resilience investment that includes periodically identifying and prioritizing projects. Such an approach could supplement individual agency climate resilience efforts and help target federal resources toward high-priority projects.

Six Key Steps Provide an Opportunity for the Federal Government to Strategically Identify and Prioritize Climate Resilience Projects

Six key steps provide an opportunity for the federal government to strategically identify and prioritize climate resilience projects for investment, based on our review of reports (including a National Academies report and the U.S. Global Change Research Program's Fourth National Climate Assessment) that discuss adaptation as a risk management process, as well as on international standards, our past work (including our enterprise risk management criteria), and interviews with stakeholders.[11] The six key steps are (1) defining the strategic goals of the climate resilience investment effort and how the effort will be carried out, (2) identifying and assessing high-risk areas for targeted resilience investment, (3) identifying potential project ideas, (4) prioritizing projects, (5) implementing high-priority projects, and (6) monitoring projects and climate risks. (See fig. 1.)

Figure 1: Key Steps for Identifying High-Priority Climate Resilience Projects for Federal Investment



Source: GAO analysis based on relevant reports, international standards, past GAO work, and stakeholder interviews. | GAO-20-317T

In our October 2019 report, we used one domestic and one international example to illustrate these key steps: Louisiana's Coastal Protection and Restoration Authority (CPRA) coastal master planning effort and Canada's Disaster Mitigation and Adaptation Fund (DMAF).

In the domestic example, to address the lack of strategic coordination, in 2005 the state of Louisiana consolidated coastal planning efforts previously carried out by multiple state entities into a single effort, led by CPRA. CPRA periodically identifies high-priority coastal resilience projects designed to address two primary risks: flooding and coastal land loss. To identify potential projects, CPRA sought project proposals from citizens, nongovernmental organizations, and others. To prioritize projects, CPRA used quantitative modeling to estimate project outcomes under multiple future scenarios of varied climate and other conditions and coordinated with stakeholders to understand potential project impacts. CPRA has published three

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[10] GAO, *Enterprise Risk Management: Selected Agencies' Experiences Illustrate Good Practices in Managing Risk*, GAO–17–63 (Washington, D.C.: Dec. 1, 2016).

[11] See National Research Council of the National Academies, America's Climate Choices: Panel on Adapting to the Impacts of Climate Change, *Adapting to the Impacts of Climate Change* (Washington, D.C.: 2010); U.S. Global Change Research Program, *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment*, vol. 2 (Washington, D.C.: 2018); International Organization for Standardization, ISO 14090:2019, *Adaptation to Climate Change—Principles, Requirements and Guidelines* (June 2019); and ASTM International, Standard *ASTM E3032–15e1: Guide for Climate Resiliency Planning and Strategy* (2015). The International Organization for Standardization is a worldwide federation of national standards bodies. ASTM International develops voluntary consensus industry standards.

coastal master plans in which it identified and evaluated potential projects. For example, in its 2017 Comprehensive Master Plan for a Sustainable Coast, CPRA identified $50 billion in high-priority projects to be implemented as funding becomes available.

In the international example, in 2018 the Canadian government launched the DMAF, a financial assistance program, to provide $1.5 billion (in U.S. dollars) over 10 years for large-scale, nationally significant projects to manage natural hazard risks, including those triggered by climate change. Infrastructure Canada, the entity responsible for administering the DMAF, seeks project ideas from provinces and territories, municipal and regional governments, indigenous groups, and others. These entities apply directly to Infrastructure Canada for funding. According to Canadian officials, two committees of experts—one composed of experts from other federal departments and the other composed of nonfederal experts (e.g., urban planners and individuals with regional expertise)—provide feedback on potential projects. These projects are prioritized based on multiple criteria such as the extent to which they reduce the impacts of natural disasters.

Options for Focusing Federal Funding on High-Priority Climate Resilience Projects Have Strengths and Limitations, and Opportunities Exist to Increase Funding Impact

As we reported in October 2019, on the basis of our review of relevant reports and our past work, interviews with stakeholders, and illustrative examples, we identified two options—each with strengths and limitations—for focusing federal funding on high-priority climate resilience projects. The options are (1) coordinating funding provided through multiple existing programs with varied purposes and (2) creating a new federal funding source specifically for investment in climate resilience. In addition, our analysis of these sources identified opportunities to increase the climate resilience impact of these two funding options.

A strength of coordinating funding from existing sources is access to multiple funding sources for a project. For example, one stakeholder we interviewed whose community used federal funding to implement large-scale resilience projects said that having multiple programs is advantageous because when funding from one program is not available—such as when the project does not match that program's purpose or when there are insufficient funds—funds could be sought from another program. The state of Louisiana's coastal master planning effort also uses multi-program coordination to fund projects. Specifically, funding for high-priority resilience projects identified in the master plan is provided via several federal and nonfederal programs designed for wetlands restoration, hurricane risk reduction, oil spill recovery, and community development, among other purposes. A limitation of that option, according to CPRA officials, is that coordinating funding from multiple sources could be administratively challenging and could require dedicated staff to identify programs, assess whether projects meet program funding criteria, apply for funds, and ensure program requirements are met.

Alternatively, one strength of creating a new federal funding source, such as a federal financial assistance program that could provide loans or grants or a climate infrastructure bank, is that it could encourage cross-sector projects designed to achieve benefits in multiple sectors. For example, according to one stakeholder, such a funding source could allow experts from multiple sectors—such as infrastructure, housing, transportation, and health—to collaborate on projects, leading to more creative, comprehensive approaches to enhance community resilience. However, such a new funding source would have to be created, which would require congressional authorization.

In addition, we identified opportunities to increase the climate resilience impact of federal funding options based on our review of our past work, related reports, an international standard, and the Louisiana and Canadian examples, as well as interviews with stakeholders:

- **Using both existing and new funding options.** Several stakeholders told us that using both funding options—multiple, existing federal programs with varied purposes and a new funding source for high-priority climate resilience projects—in a strategic, coordinated way could help increase the impact of federal investment. Two stakeholders told us that in practice, multiple, existing federal funding sources that are not specific to climate resilience could be coordinated to fund projects when their purposes and rules align and adequate funding is available. A funding source specifically for climate resilience could be used to fund proposed projects when no related program exists or when existing programs do not have sufficient funding available, according to these and other stakeholders.

- **Helping ensure adequate and consistent funding.** Several stakeholders we interviewed identified the need for adequate and consistent funding to implement high-priority climate resilience projects. For example, according to one stakeholder we interviewed, inconsistent, inadequate funding makes it difficult to complete large-scale projects and can lead to additional costs if significant delays occur during which existing work deteriorates. In addition to adequate and consistent funding, funding options should be designed to accommodate long-term projects since high-priority climate resilience projects can take multiple years to design and implement, according to two stakeholders we interviewed.
- **Encouraging nonfederal investment.** Several stakeholders we interviewed told us that the federal government could use a federal climate resilience investment effort to encourage nonfederal investment in high-priority climate resilience projects, thereby increasing the impact of federal investment. For example, several stakeholders identified the importance of a cost-share component so that funding recipients are invested in a project's success. Canada's DMAF encourages nonfederal investment by partially funding projects of national significance and requiring different levels of cost-share from funding recipients, ranging from 25 percent for indigenous recipients to 75 percent for private-sector and other for-profit recipients. Several stakeholders also identified potential funding mechanisms—for example, public-private partnerships and loan guarantees—that could leverage federal dollars to encourage additional investment in climate resilience projects by nonfederal entities, including the private sector.
- **Encouraging complementary resilience activities.** To increase the impact of federal investment in climate resilience, a federal investment effort presents an opportunity to encourage complementary resilience activities by nonfederal actors such as states, localities, and private-sector partners, based on interviews with several stakeholders, the Canadian example, and reports we reviewed. For example, this could include establishing conditions that funding recipients must meet in exchange for receiving federal funding. Alternatively, the federal government could use incentives (e.g., providing greater federal cost-share or giving additional preference in the project prioritization process) to encourage complementary resilience activities by nonfederal actors. Our Disaster Resilience Framework states that incentives can make long-term, forward-looking risk reduction investments more viable and attractive among competing priorities.[12] The federal government could use these conditions and incentives to encourage several types of complementary resilience activities by nonfederal actors. For example, the federal government could encourage the use and enforcement of building codes that require stronger risk-reduction measures. In addition, a federal investment effort could provide an opportunity to encourage communities to limit or prohibit development in high-risk areas to minimize risks to people and assets exposed to future climate hazards. One example of this would be through zoning regulations. Another stakeholder suggested that communities receiving federal funding for resilience projects should be adequately insured against future climate risks so they have a potential source of funding for rebuilding in the event of a disaster.
- **Allowing funds to be used at various stages of project development.** Several stakeholders suggested that federal funds be used for multiple stages of project development—such as project design, implementation, or monitoring—to increase the impact of federal funds. For example, two stakeholders we interviewed told us that resilience projects can require significant amounts of design work to develop an implementable and effective project concept and that making funds available for project design could improve the quality of project proposals, thereby maximizing the impact of federal funds. In addition to providing federal funds for project design, one stakeholder suggested making federal funding available to measure project outcomes (e.g., how effectively projects increased resilience) to improve future decisions by both the federal government and others making resilience investments.

Based on the findings of our October 2019 report, we recommended that Congress consider establishing a federal organizational arrangement to periodically identify and prioritize climate resilience projects for federal investment. Such an arrangement could be designed using the six key steps for prioritizing climate resilience investments and the opportunities to increase the climate resilience impact of federal funding options that we identified in our report.

[12] GAO–20–100SP.

Chairwoman Castor, Ranking Member Graves, and Members of the Select Committee, this completes my prepared statement. I would be pleased to respond to any questions that you may have at this time.

GAO Contact and Staff Acknowledgments

If you or your staff have any questions about this testimony, please contact Mark Gaffigan at (202) 512-3841 or gaffiganm@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement.

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Ms. CASTOR. Thank you very much.

Mr. Burns, you are recognized for 5 minutes.

STATEMENT OF DAMON BURNS

Mr. BURNS. Thank you, Chair Castor, and thank you, Ranking Member Graves and the rest of the members of the committee. Thank you for having me here today.

My name is Damon Burns. I represent the Finance Authority of New Orleans. I am also here speaking on behalf of the City of New Orleans to just talk a little bit about climate resilience and how a disaster can really affect the community.

So, in New Orleans, we have a history of being innovative. Usually, people don't think of New Orleans and innovation, but we have been innovative over time. And we find ourselves in a position again in the need to be innovative. This time, it is about climate, it is about protecting our environment.

And I think everyone here knows the story of Katrina and all of the subsequent disasters that have happened since. Well, I want to talk a little bit about what has happened to our agency, in particular, and some of the things that we need to do to protect other cities so that they don't find themselves in the same situation that we are dealing with in New Orleans.

So, in 2015, the city of New Orleans decided to adopt a climate resilience plan. And that climate resilience plan has three basic goals: one, educate the community and embrace climate resilience; two, physically transform New Orleans; and, three, create opportunity for underinvested communities. That is a very simple plan, and we think that plan can apply across state lines, across city lines.

It is really important that we make those investments today. And the Finance Authority of New Orleans is a prime example, living example, of what can happen. So, after Hurricane Katrina, the Finance Authority found itself in a situation where we needed to reinvent ourselves. And we are 14 years removed, and we are still coming up with that reinvention process.

So what happened to us? We invested over $650 million in New Orleans over three decades. We served over 7,000 families, particularly first-time homebuyers. We helped them get into their first homes. And that is important because, in many cases, we are the only opportunity people have to have a chance to access capital. The traditional banking network or system is not so favorable to certain communities, underinvested communities. So the Finance Authority of New Orleans plays that role, where we create access.

Well, after Katrina, our access was cut off. We lost $350 million off our balance sheet overnight. That is 95 percent of our balance sheet, almost overnight. And that is a direct result of us not having resilient infrastructure in our neighborhood so that people can stay when disaster strikes. So if the infrastructure isn't resilient, people have to move out almost immediately. And that happened to us.

So we still find ourselves in a position of recovery. So, moving forward, we have decided to make all of our investments climate resilient. It is not just about providing access to capital anymore; it is also providing access to capital that allows us to protect our communities and protect our neighborhoods.

So there are some things that we are doing on the ground, such as providing green mortgages to homeowners and developers. And a green mortgage is nothing more than a regular mortgage, but it has funding built in so that a family can put in permeable pavement, they can put in solar panels into their home, they can make that home more energy-efficient.

So we have to stretch ourselves in order to do these things. And, frankly, the system is not set up for us to do this on a continuous basis, on a sustainable basis. We are doing what we can with what we have, but we honestly need more.

So I want to give you a few points that I think are important for other cities and things that we can adopt to make sure that other cities are protected and prepared.

Number one, everyone has to be educated. There needs to be common education across state lines so everyone understands the importance and the risk of climate change. Also, it would help to create a common market or create a marketplace for cities that are investing in climate resilience. Because that doesn't exist today, or it exists with little capacity. So we need to grow the capacity of that industry.

Secondly, there is no big difference between a green bond and a regular municipal bond today. So we need to encourage and incentivize cities to invest in more climate resilience-based bonds, and we need to incentivize investors to buy more climate resilience bonds.

Also, tax credits. Ninety percent of the capital projects in this country are already funded in the municipal bond market. Cities can only take on so much more debt. So it is important that we create other types of creative financial solutions that cities can leverage and bring in private capital so that we can actually make these investments.

Also, leveraging the Federal Government's resources as an insurer. We need insurance products to make these programs run, not just debt and equity, but insurance is a third leg of the financing solution that we need to have in the cities.

And last is create an opportunity where it doesn't exist. Many communities have been destroyed through underinvestment, through racial injustice, et cetera. Climate resilience is an opportunity to reinvest in those communities. So someone has to put on those solar panels, someone has to put in that permeable pavement, someone has to make all those improvements. It is an opportunity for us to put those communities back to work and to use climate resilience as a chance to reinvest in communities where they haven't received any investments.

And in closing, I would like to say that, you know, for us on the ground in New Orleans, climate change is not an opinion; it is actually the law of the universe. And we think that the climate will always evolve, and we have to evolve with it. And our basic stance at this point is, if we don't care of the Earth, the Earth won't take care of us.

So we are doing everything that we can with the investments that we have, but I urge you to do more and recreate the system so that we can have a more climate resilient America.

Thank you.

[The statement of Mr. Burns follows:]

Statement of Mr. Damon Burns, Chief Executive Officer, Finance Authority of New Orleans, New Orleans, Louisiana on

"Creating a Climate Resilient America: Smart Finance for Strong Communities"

U.S. House of Representatives Select Committee on the Climate Crisis

December 11th, 2019

Chairwoman Castor, Ranking Member Graves and Committee Members, my name is Damon Burns and I am from New Orleans, Louisiana. I am the Chief Executive Officer of The Finance Authority of New Orleans; a green housing and development finance agency that has invested over $650 million into New Orleans since 1978. My organization serves all New Orleanians under the leadership of our Honorable Mayor LaToya Cantrell. Our long-term vision is to create a climate resilient New Orleans that provides all communities with a decent quality of life. It is an honor and privilege to be here with you today and discuss "Creating a Climate Resilient America: Smart Finance for Strong Communities".

Now the youthful age of 301, New Orleans, Louisiana is older than United States itself. New Orleans has always played an important role in the development of America. Be it international trade, mortgage backed securities, jazz, gumbo, infrastructure or bounce music: New Orleans has given this world some of its best innovations. Prior to being known as New Orleans, the land on which it sits was occupied by an advanced civilization of mound builders that mastered the art of living along the Mississippi River. The spirit of these ancient "New Orleanians" lives on because we must now re-master the art of living with water and other climate risks.

In New Orleans, our first-hand experience suggests that climate change is not an opinion: it is the Law of the Universe and we must heed Mother Nature's warnings. New Orleans and surrounding communities face climate challenges unlike any city in the United States. In our view, climate resiliency is a necessity as opposed to a political stance or market ideology. It is the price to pay for being a water dependent civilization. With sea levels potentially rising over 10 feet within the next 100 years and aging infrastructure, New Orleans must be proactive about ensuring a sustainable future for generations.

The Finance Authority of New Orleans is a living example of the potential social and economic damage that climate events can inflict upon communities. Prior to Hurricane Katrina in 2005, FANO invested more than $650 million into New Orleans over the course of 25 years benefiting more than 7,000 families. However, FANO's balance sheet assets declined by over $350 million or 95% In the aftermath of Hurricane Katrina due to inadequate levees and infrastructure leading to families being displaced. The Great Recession immediately followed Hurricane Katrina and placed more stress on our financial condition and ability to invest in New Orleans. Such a significant loss of community wealth is damaging in an impoverished city like New Orleans. For many members of our community, FANO is their only access to capital for homeownership.

In 2015, the City of New Orleans established a Climate Resilience Plan, which includes (1) embracing environmental change, (2) physically transforming New Orleans to increase resiliency against climate events, and (3) creating new job opportunities for distressed communities. In response, The Finance Authority of New Orleans has updated its business model to execute the "green" financing component of the

City's Climate Resilience Plan. Beginning in 2020, FANO will provide capital to homeowners, businesses, and government agencies to stimulate the development of green homes, green infrastructure, stormwater systems, renewable energy, and other investments that advance the City's Climate Resilience Plan. These projects must utilize commercially viable techniques and technologies, such as permeable pavement, rain barrels, solar panels, and clean energy transportation. FANO is also prioritizing support for minority owned businesses and early stage technology companies developing solutions to help cities mitigate the effects of climate change. Our goal is to invest $500 million into the New Orleans economy over the next 5 years. Large corporations are being engaged to play a role as well. We need all hands-on deck if we are going to protect New Orleans from the next Hurricane Katrina.

New Orleans' story represents Earth's constantly evolving climate reality and underscores the lack of investment America has made into critical infrastructure to protect our cities. Members of the United States Congress must take decisive action to ensure a climate protected future. As of today, America is not prepared for this new climate reality. Provided below are suggested actions from the perspective of local governments for making America more climate resilient:

EDUCATE AMERICA ABOUT THE REALITIES OF CLIMATE CHANGE

- **Encourage cities to adopt common Climate Resiliency plans.** Solutions for climate resiliency will vary per community. Nonetheless, cities should be encouraged to develop plans that can translate to other communities. Doing so will aid communication between cities and help markets develop around the economic activity that will stem from cities investing in climate resilience.
- **Inform the public that climate change is a reality and must be taken seriously.** The Federal Government has the responsibility to ensure public safety. Climate change is a public safety issue above all. Education campaigns targeting households and businesses should be launched in collaboration with cities and state governments.

PHYSICALLY TRANSFORM AMERICA BY INVESTING IN CLIMATE RESILIENCE

- **Incentive municipal bond investors to buy "green bonds".** There has been interest in municipal green bonds, but issuance in 2018 was only $4.9 billion or about 1.5% of total municipal bond issuance for 2018. There is currently minimal financial incentive for investors to buy green bonds. Green bonds must be placed into a special category to encourage investors to make the transition so that we can physically transform America. Some are investing in green bonds because of internal investment policy mandates but greater stimulation is needed to make the municipal bond market fully adopt green bonds.
- **Reestablish the renewable energy tax investment credit program and create tax credits for green infrastructure.** Cities are maxed out on municipal debt. The municipal bond market currently funds approximately 90% of all capital projects. Cities do not have the ability to sell equity to investors as corporations do, which limits their market-based sources of funds to invest in climate resiliency. There is simply not enough capital to fund the trillions of dollars of infrastructure investment America needs to upgrade itself. Robust tax credit programs for renewable energy and green infrastructure projects would stimulate more public private partnerships and job creation.
- **Create a market for affordable climate resiliency insurance.** Government insurance is a critical component of capital markets. Many households and businesses are unable to access capital markets without government insurance products. Insurance for climate resiliency is no different. Insurance products tailored for climate resiliency need to be created to bring efficiency and access to the marketplace.

CREATE OPPORTUNITY FOR UNDERINVESTED COMMUNITIES

- **Use climate resiliency as an opportunity to rebuild damaged communities.** Many American communities are broken from a history of disinvestment and racial injustice. America has the opportunity to recreate its cities in a fair and equitable manner. The Federal Government should create incentives for minority and women owned businesses to play a key role in the physical transformation of America. So called "Black" communities around the country are at an even higher risk of failure due to the digital technology transition we are currently experiencing. Many of the jobs these families depend on for an additional paycheck will be obsolete in the coming years resulting in more poverty. Investing in minority businesses and communities is critical to the long-term success of America. Failing to do so will prevent America from reaching its full potential.

Climate change is an issue this entire country should rally around regardless of race or political affiliation. America has the capacity to lead Earth in a new direction. Ignoring the power of Mother Nature does nothing but put us all at risk of displacement. The climate of Earth will constantly evolve, and we must evolve with it. America has a chance to recreate itself by investing in climate resilience. America also has the opportunity to rebuild communities that it damaged through enslavement, racial segregation and private prisons. If America is to stand the test of time, it must rebuild in a fair and equitable way. No community should be left behind, and no community should be given an unfair advantage over the other if we are to reach the apex of our potential.

Thank you for the opportunity to communicate the climate resiliency needs of New Orleans and other cities facing similar issues. I urge you to take actions that place all of America's people in a position to live a decent quality of life. If we do not take care of the Earth, the Earth will not take care of us.

Ms. CASTOR. Very good.

Mr. Wemple, you are recognized for 5 minutes.

STATEMENT OF CHARLES WEMPLE

Mr. WEMPLE. Chair Castor, Ranking Member Graves, and members of the committee, thank you for the opportunity to speak to you today about the important role smart finance and economic resiliency play in creating strong communities.

I am actually thrilled to be here today to talk about the importance of economic resiliency and financial strength. This topic is very important, and it rarely gets the attention and consideration that it merits. It is often overshadowed by infrastructure discussions and housing needs after natural disasters. And it is something that ties all of our resiliency together, is by looking at our economies and how to make things stronger.

My name is Chuck Wemple. I am the Executive Director of the Houston-Galveston Area Council. We are a Regional Planning Commission comprised of 13 counties and 110 cities along the upper Texas coast. We are home to about 7 million people, covering about 12,000 square miles, and we are prone to natural disasters, primarily flooding and hurricanes. And understanding our economic resilience is very important as we look to a future of more intense weather, rapid growth, and changing economies.

The Houston-Galveston Area Council conducted some of the earliest work in our region on the effects of environmental trends on our quality of life and economy; the intersection of transportation, economy, housing, and the environment in creating healthy communities; and also a comprehensive economic development strategy, which includes resiliency as a primary goal. I have included links to these reports in my written testimony, and I hope you find them helpful as you move forward.

We have also played a key role in the recovery of our communities after natural disasters, most notably starting with Hurricane Rita, followed by Ike, and most recently Harvey. And I come to you today with the perspective of about 14 years' experience working for large cities, small towns, suburban neighborhoods, and rural counties to help them understand their vulnerabilities in natural disasters and economic shocks, which is often overlooked at great expense, in my opinion—we focus a lot on natural disasters, but the economic shocks are equally as important—and how to better be prepared to bounce back when they are knocked off their feet.

Each time we encounter a disaster, we learn a bit more. We learn how we might be able to make processes more streamlined and more nimble. Harvey changed the conversation for us, though. For the first time, we are hearing in our region a discussion of true regional, multijurisdictional projects, that one entity, no matter how large, cannot fix the root cause of the problem that is in front of us in our region.

So we are starting to lead efforts, mostly brought together by our chief elected officials in urban counties and rural counties, to come together and better understand what those vulnerabilities are, face those risks head-on, and then come up with ways to develop kind of an investment portfolio approach to how they might be able to meet those needs.

I would like to give you one quick example, if I could. We have a large water body called Cedar Bayou which drains from north to south in our region. It forms the boundary between a large urban county and two rural counties. And, in the past, those counties and cities had been competing against each other for different types of mitigation and disaster recovery funding. And they came together, and we helped lead the conversation to better understand what is truly happening, what is causing the flooding, and what are the most important projects to be funded. And so now there is a discussion of maybe the best project is not in an individual's jurisdiction but it might make a difference if it is somewhere else, could make their community better and take away some of that competition of funding.

We have also seen programs in our area that are Federal that tend to be small and nimble programs, such as the Economic Development Administration and the U.S. Department of Agriculture. They tend to be able to get money out very quickly after a disaster and also in advance.

The common characteristic between both those programs for us is they have a strong regional presence, they are closely connected to the communities, and they have some autonomy in being able to make quick funding decisions. And, as a result, they are able to bring help and relief very quickly to our communities.

Lastly, back in the area that I represent in the State of Texas, we are not going to wait on seeing how the Federal funding comes down to us. Our State legislature took action in our most recent legislative session to allocate $3 billion out of our $10 billion rainy-day fund to put towards recovery and mitigation as well; also, made loans and grants available; and, also, training requirements for elected officials and others as well.

I would just wrap up my testimony by saying that, if we focus on three primary things, we can create stronger, more resilient communities: first, working before the next disaster strikes to understand our vulnerabilities; facing our risks head-on; and then also developing a smart finance framework.

What is missing is an overarching coordination event to help bring all of these different types of funding together to fund projects. So, instead of chasing individual funding streams, if we can have great projects that make our communities more resilient and understand our economy, then we can find ways to fund them.

And, with that, I will conclude my testimony. Thank you.

[The statement of Mr. Wemple follows:]

Testimony—Chuck Wemple, Houston-Galveston Area Council

Hearing of the House Select Committee on the Climate Crisis

"Creating a Climate Resilient America: Smart Finance for Strong Communities"

Wednesday, December 11, 2019

Chair Castor, Ranking Member Graves, and members of the Committee, thank you for the opportunity to speak with you today about the important roles smart finance and economic resiliency play in creating strong communities. I'm thrilled to be here today to talk about the importance of economic resiliency and financial strength. This important topic rarely gets the attention and consideration it merits and is often overshadowed by infrastructure and housing needs after natural disasters.

My name is Chuck Wemple and I am the Executive Director of the Houston-Galveston Area Council, a regional planning commission comprised of 13 counties and 110 cities along the upper Texas Coast. Our region is home to nearly 7 million people, covers over 12,000 square miles, and prone to natural disasters—primarily flooding and hurricanes. Understanding our economic resilience is very important as we look to a future of intense weather, rapid growth, and changing economies.

Our agency works with local communities to solve regional problems and improve quality of life for our residents—from workforce development to public safety, homeland security, transportation, economic development, services for the elderly, hazard mitigation and more. The Houston-Galveston Area Council has conducted some of the earliest work in our region on the effects of environment trends on our quality of life and economy, the intersection of transportation, economy, housing, and the environment in creating healthy communities, and a comprehensive economic development strategy which includes resiliency as a primary goal. I've included links to the reports of these efforts at the end of this document. We've also played a key role in the recovery of our communities after natural disasters; most notably Hurricanes Rita, Ike, and Harvey.

I come to you today with the perspective of over 14-years of experience working with large cities, small towns, suburban neighborhoods, and rural counties, to help them understand their vulnerabilities to natural disasters and economic shocks and how to be better prepared and bounce back when knocked off their feet.

After assisting over 500 households repair and rebuild their homes, working with scores of small businesses to re-establish their enterprises, allocating over $2 billion in federal disaster recovery funds, and crafting locally-driven hazard mitigation plans which list the needs of our communities in the hundreds of projects, I can tell you without reservation that understanding our vulnerabilities, facing our risks head on, and investing in resilient communities is critical to our future.

So how can we all work together to make our communities stronger and more resilient? One—Be strategic with future funding for resilient and strong communities. Two—Lean in to hard conversations and face our risks head on. Three—Consider all sources of funding—federal, state, local, and private—as an investment portfolio to strengthen our communities.

I want to be clear that the solution is not as simple as increasing funding. By planning in advance of the next disaster and better understanding the variety of funding available from federal, state, and local sources, we can spend the money already available better and more efficiently. Any future increases should be linked to up-front planning, focused on planning and projects that strengthen communities in advance of major setbacks, and in the case of federal funding, programmed through streamlined processes that quickly move money from the federal government into the communities in need of help.

A critical part of strengthening our communities is to lean in to hard conversations about what could make our communities more resilient and turn challenges into opportunities. These hard conversations tend to be centered on impacts to local economies. I'll give three examples of where the Houston-Galveston Area Council is working with our local governments to start some of these conversations.

We are coordinating a multijurisdictional project along Cedar Bayou a major waterbody in our region which affects three counties, multiple cities, rural areas, maritime shipping and the petrochemical industry. Cedar Bayou received some of the highest amounts of rainfall during Hurricane Harvey and produced massive flooding that impacted transportation networks, freight and goods movement, homes, and businesses. The first phase of our work used local knowledge to prioritize projects and guide future investment of federal, state, and local funding.

The second phase includes forming a multijurisdictional alliance to pursue federal and state funding and a special district to produce local revenue. The most challenging discussions and most innovative thinking have centered on potential limits on economic development and raising local funding. What could have been a roadblock has become an opportunity by exploring new ideas for fees and incentives rather than an increased tax on land owners. One example is the possibility of a flood-mitigation bank which could be used to compensate a local government that may experience reduced tax revenue due to converting land to detention rather than pursuing traditional economic development opportunities. It is important to know that this example of upfront planning and collaboration is funded by local dollars and intended to provide a mechanism for strategic investment of future federal and state funds.

In the coming year, the Houston-Galveston Area Council will use a similar approach to gauge local interest in a regional voluntary-conservation plan which could provide a triple bottom line win of protecting natural resources and communities, reducing reliance on federal disaster recovery funds, and diversify our regional economy by increasing recreational opportunities for our residents. This project is locally funded. Results of this work may also be transferrable to help local communities offset the cost associated with a reduced tax base resulting from home buy out programs and other land use restrictions.

Quality housing is directly linked to a community's economic resiliency. One of the small cities along our coast moved quickly to get city services restored after Hurricane Ike. The city also benefited from a strong group of local businesses who rapidly reopened their restaurants, shops, and storefronts. While everything seemed set for a speedy recovery, one important piece was missing. The workers. Many of the employees had been displaced and the city did not have adequate workforce housing nearby. The city suffered a worker shortage which slowed recovery. As a region we work to build off these experiences to better understand our vulnerabilities and seek solutions.

Based on our experience working on economic development initiatives, job and population forecasts, and disaster recovery housing experience, the Houston-Galveston Area Council recently conducted the region's first housing assessment to identify local challenges to addressing unmet housing needs. One of the key findings of the work included identifying opportunities for local governments to work with the private sector and community nonprofits to increase access to workforce housing. Housing discussions can be challenging in many cities and towns but providing economic context and conducting the work at a regional level result in positive outcomes and strengthen our communities. As with the two previous studies, this work was locally funded.

One of the first steps in considering the suite of funds available to increase community resilience as a portfolio is to develop a framework that either coordinates or consolidates the various funding streams.

When communities are hit by a disaster, they are highly focused on immediate critical needs like clearing roads, restoring water and sewer service and removing debris and they simply don't have the time to figure out where to find resources offered by many federal agencies. Immediately after a disaster strikes, the Houston-Galveston Area Council launches a webpage providing access to the various agencies offering funding. This list is dynamic and grows and shrinks as programs start and end and can easily top a dozen federal and state agencies offering multiple programs. This effort focuses on recovery and as a result is reactionary rather than anticipatory.

Our regional resiliency efforts are beginning to bring together opportunities from federal, state, and local funds and we will begin providing a funding toolbox to our members. The State of Texas took action during the most recent legislative session to open opportunities to use our reserve fund and create other loan and grant opportunities to help communities become more resilient and prepared. One particular area of private funding that holds promise for helping create more resilient residents is our new work with banks and lenders to leverage community reinvestment act funds in some of our most needy communities. These efforts will increase the fiscal strength of individuals by teaching financial literacy, improving creditworthiness, and providing access to financing. And we are exploring the viability of other mechanisms which could induce more private sector investment in mitigation and resiliency, including the possibility of franchise/concession funding for maintenance and operation of infrastructure and mitigation banks.

Regional planning commissions and federal agencies both have roles in coordinating resilience funding. The regional US Department of Commerce Economic Development Administration (EDA) office which covers Texas and the four surrounding states has taken the lead and partnered with us to host integration meetings which bring our communities and a host of other federal agencies together to make connections and help our communities see federal opportunities as a portfolio rather than as single agencies.

Other federal models also exist and could be modified FEMA's ESF–14 and the current National Framework could be good starting points but could use stronger economic resiliency components.

We have observed that programs with relatively small allocations of funds that are also closely connected to local communities and have strong partnerships with local leaders and regional planning commissions are able to react nimbly and quickly deliver funds which brings hope to communities and speeds recovery. Two great examples include the US Department of Commerce Economic Development Administration (EDA) and the US Department of Agriculture. Both have strong district/regional presence, know local conditions and needs, and are empowered by their headquarters outside of Washington. Both programs exhibit accountability and flexibility to address local needs and priorities. One program of particular note from USDA is the Community Facilities Program which offers a mix of direct loans, grants and loan guarantees to assist rural communities in expanding, constructing, or improving community assets like fire and rescue stations, hospitals and clinics, public buildings and transportation infrastructure. This program increases economic competitiveness and resiliency.

To summarize, the conventional approach of mitigation and recovery takes too long and has substantial impediments that limit our ability to create truly resilient communities. We can create stronger more resilient communities by focusing in three primary tasks. One—working before the next disaster strikes to understand our vulnerabilities. Two—facing our risks head on and identifying projects that mitigate these risks. Three, developing a smart finance framework that coordinates all sources of funding—federal, state, local, and private—as an investment portfolio to strengthen our communities. Look to regional planning commissions and local governments for exciting examples that can help illustrate how this is currently working and can be expanded. Nimble federal programs that rapidly provide funding to support the implementation of resiliency projects will be critical for our efforts to be successful.

Together we can take a holistic approach to addressing our current challenges and making our communities better prepared to adapt to any changes that might come their way. The Houston-Galveston Area Council stands ready to serve. This concludes my testimony and I look forward to answering any questions you may have.

Links to reports referenced on page 1 of this testimony.

Regional Economic Resilience Plan, http://www.h-gac.com/gulf-coast-economic-development-district/documents/Regional%20Economic%20Resilience%20Plan.pdf

Comprehensive Economic Development Strategy, http://www.h-gac.com/gulf-coast-economic-development-district/documents/Draft-2018-2022-GCEDD-CEDS-to-EDA.pdf

Our Great Region 2040 Sustainable Communities Plan, http://www.ourregion.org/download.html

Foresight Panel on Environmental Effects, http://www.h-gac.com/foresight-panel-on-environmental-effects/documents/foresight_panel_on_environmental_effects_report.pdf

Ms. CASTOR. Terrific. Thank you.

Ms. McFadden, you are recognized for 5 minutes.

STATEMENT OF MARION MCFADDEN

Ms. MCFADDEN. Chair Castor, Ranking Member Graves, and other esteemed members of the committee, thank you so much for the opportunity to appear before you today to present my recommendations.

I am the Senior Vice President for Public Policy and a Senior Advisor for Resilience at Enterprise Community Partners. And, as you heard, I previously spent 15 years working on disaster recovery and infrastructure programs at HUD.

Enterprise is a nonprofit organization that for more than 35 years has been helping build the capacity in both the public and private sectors so that capital can be deployed more effectively. We have invested more than $43 billion in 585,000 homes across all 50 States.

Currently, Enterprise is supporting rebuilding and resilience initiatives in Puerto Rico, the United States Virgin Islands, Florida, Georgia, Texas, Louisiana, North Carolina, D.C., New York, Michigan, Illinois, and California.

At Enterprise, we don't just take it on faith that incorporating resilience measures will save money. We saw that firsthand in 2017 when a heavy rainfall flooded New Orleans and deluged the Faubourg Lafitte homes that Enterprise and Providence Community Housing rebuilt after Hurricane Katrina. Residents found their streets waist-deep in water, but our development escaped harm because the homes had been built an additional 2 feet above the base flood elevation, taking into consideration the possibility of future flooding. Our efforts to do what was within our own control paid off.

Large-scale damage caused by wildfires, floods, tornadoes, and hurricanes has become the new normal. I commend the House and particularly this committee for embracing the need to better prepare communities. You have put your money where your mouth is by making funds available for resilience. I particularly thank you for authorizing FEMA to set aside 6 percent of disaster relief funds for hazard mitigation projects.

Despite growing interest and commitment though, we are not moving at the necessary pace of change. I would like to offer six brief recommendations.

The first is that you charge Federal agencies with working together to provide the best available risk data to communities in a manner that is easily usable at the address or block level.

No private company, nonprofit institution, or local government is better suited than the U.S. Government to make accurate climate science and risk data available to the public. In creating risk data, it is important to include the unique needs of elders, people with disability, people with limited English proficiency, and people of modest means.

The Federal Government alone has the power to shine a light on the risk we face, but it will not need to act alone once adequate information is shared.

My second recommendation is to develop a Federal framework for rating resilient infrastructure. This would help cities design, build, and operate infrastructure to ensure its long-term viability and to deliver other environmental, economic, and social benefits.

Thirdly, I recommend that Congress improve and harmonize Federal infrastructure requirements. Private investment in Federal infrastructure projects is hampered by inefficiencies and lack of certainty on the front end. In particular, Congress should require the executive branch to improve, simplify, and standardize its benefit-cost analysis methods and prioritize mitigation investments in communities with the highest vulnerability to hazards.

My fourth recommendation is to ensure that all federally funded infrastructure projects, and not just disaster recovery projects, are built to resilience standards. Given our knowledge of what is to come, we must stop investing taxpayer dollars in projects that don't plan for reasonably foreseeable risks.

Last year, Congress wisely approved a one-time infusion of nearly $16 billion to the Community Development Block Grant Program for resilience activities, such as risk assessments and planning, infrastructure upgrades, building retrofits, and buy-outs. Funds were allocated only to those places that have had the worst disasters in recent years. My fifth recommendation is that Congress permanently expand the annual CDBG program to allow communities nationwide to embrace a proactive approach to mitigation and resilience.

My final recommendation is to further explore partnering with the private sector to ensure robust investment in resilient infrastructure through the creation of a national infrastructure bank. The use of private financing for infrastructure projects in the United States is not as substantial as it should be. The infrastructure bank should provide funds to complement, not replace, existing Federal programs.

In conclusion, in order to spur the level of investment and focus that is required to combat the looming threats of climate change, we must act boldly. I commend the committee for your commitment to examining how to best create a climate resilient America. Working collaboratively across all levels of government, the public sector, and nonprofit institutions, we can build resilient futures.

Thank you, and I look forward to answering any questions you may have.

[The statement of Ms. McFadden follows:]

Written Testimony of Marion Mollegen McFadden, Senior Vice President, Public Policy & Senior Advisor, Resilience, Enterprise Community Partners

Before the Select Committee on the Climate Crisis, United States House of Representatives

December 11, 2019

Hearing on Creating a Climate Resilient America: Smart Finance for Strong Communities

Introduction

Chair Castor, Ranking Member Graves, and members of the House Select Committee on the Climate Crisis, thank you for the opportunity to submit this testimony. I am the Senior Vice President for Public Policy and Senior Advisor for Resilience at Enterprise Community Partners. Enterprise is a nonprofit organization committed to making well-designed homes affordable so that communities can thrive. We have eleven regional offices and in the past several years have worked in more than 425 communities nationwide. For more than 35 years, Enterprise has been committed to helping communities break down silos and build organizational capacity in both the public and private sectors so that funding is deployed more effectively. We have invested more than $43 billion in capital to help create or preserve 585,000 homes in all 50 states plus the District of Columbia and Puerto Rico. We have been working with disaster-impacted communities for well over a decade. This testimony is informed by work we did from 2017-2018 with more than two dozen American cities participating in the 100 Resilient Cities network, which was pioneered by The Rockefeller Foundation.

Before working at Enterprise, I spent more than 15 years working on disaster recovery and infrastructure grants and loan guarantees at the U.S. Department of Housing and Urban Development (HUD). During that time, I served as Deputy Assistant Secretary for Grant Programs, overseeing billions of dollars in infrastructure programs, and served as Chief Operating Officer and Acting Executive Director of the Hurricane Sandy Rebuilding Task Force, overseeing development of an innovative $1 billion flood control design competition. I have learned that while no two disasters are alike, the people whose lives, homes, and jobs are affected by the worst disasters all need the same thing—a safe and secure future, starting with safe places to live, work, get an education, and receive medical care. And they need reliable routes to get to where to where they need to be.

Currently Enterprise is supporting rebuilding and resilience initiatives in Puerto Rico, the United States Virgin Islands, Florida, Georgia, Texas, Louisiana, North Carolina, D.C., New York, Michigan, Illinois, and California. Enterprise provides a spectrum of resources in the form of capital, programs, and policy both before and after disasters occur. We are not first responders, but rather act as an intermediary supporting emergency preparedness, mitigation planning, and long-term disaster recovery. Through our nationwide work as a Community Development Financial Institution (CDFI), a syndicator of Low-Income Housing Tax Credits, and investor of other public and private funds, we have built a track record of successfully investing capital to build more resilient futures.

At Enterprise, we don't just take it on faith that incorporating resilience measures saves money. We saw that firsthand in 2017 when a very heavy rainfall flooded New Orleans and tested the new Faubourg-Lafitte development which Enterprise and Providence Community Housing rebuilt after Hurricane Katrina. The deluge overwhelmed the city's drainage systems. Residents found their streets waist-deep in water, but our development escaped harm. Water did not breach the first floor of our property because the homes had been built two feet above the base flood elevation, taking into consideration the possibility of future flooding. These homes were unharmed, so residents could quickly get back to their daily lives once the water receded, and there was no need to make a claim on the development's National Flood Insurance Program policy. Better underground infrastructure is needed throughout the city to allow water to drain more quickly, but our efforts to do what was within our own control to minimize risk paid off.

I have learned that resilience isn't just about a building or road or sewer system, but also about drawing from the inherent strength in communities to help everyone prepare for and move forward in the face of our new climate future. As Members of this Committee well know, the challenges of our new climate are many, so Enterprise has identified the risk of our changing climate and its disproportionate effect on lower income communities and communities of color as an existential threat that we must address. We stand committed to deploying existing and new solutions that are cohesive and equitable, ideally harnessing both public and private will and capital to keep people and property safe from harm.

The Challenges of our New Climate

The increasing intensity of natural disasters all over the United States has placed a significant strain on communities and local economies. Since 1980, the U.S. has endured 254 weather and climate disasters where the overall cost reached or exceed $1 billion—totaling more than $1.7 trillion in damage. The frequency of these devasting storms is only increasing, and already this year there have been ten weather and climate disaster events with losses above $1 billion each. 2019 marks the fifth consecutive year in which 10 or more billion-dollar disaster have impacted the U.S.[1] Large-scale damage caused by wildfires, floods, tornadoes, and hurricanes has become the new normal. A recent report by the Trump Administration forecasted that this trend will continue in the coming years and decades. The Fourth National Climate Assessment stated that not only will our changing climate exacerbate existing vulnerabilities across the United States but that it will also present growing challenges to human health and safety, quality of life, and the rate of economic growth.[2]

While disasters are agnostic to whether a neighborhood is high or low income, low-income households and vulnerable communities generally pay the highest price when a major disaster strikes.[3] Low-income populations and people of color are less likely to have the resources necessary to prepare for a storm and they are more likely to lack savings before disasters strike. Evacuating alone can be too costly for many, given that fewer than 40 percent of Americans have enough savings to cover

[1] NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2019). https://www.ncdc.noaa.gov/billions/

[2] Jay, A., D.R. Reidmiller, C.W. Avery, D. Barrie, B.J. DeAngelo, A. Dave, M. Dzaugis, M. Kolian, K.L.M. Lewis, K. Reeves, and D. Winner, 2018: Overview. In *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA.

[3] Krause, Eleanor, Reeves, Richard V. "Hurricanes hit the poor the hardest." September 18, 2017. https://www.brookings.edu/blog/social-mobility-memos/2017/09/18/hurricanes-hit-the-poor-the-hardest/

a $1,000 emergency.[4] Socially vulnerable populations are more likely to live in physically vulnerable areas that have greater natural hazard risks due to historical, economic, and political factors and thus cost less than homes in safer locations. Lower-quality homes are less stable in the high winds of hurricanes and tornados, posing additional risk to individuals and families who cannot afford to pay for something safer. Experience shows that natural disasters exacerbate wealth inequality.

I commend the Congress and particularly this Committee for embracing the need to better prepare communities and making funds available for resilience, adaptation and mitigation. In February 2018, Congress approved a one-time of infusion of nearly $16 billion for HUD to prepare communities for future disasters. The HUD Community Development Block Grant (CDBG)-Mitigation program will fund disaster mitigation activities such as mitigation planning, infrastructure upgrades, building retrofits, and strategic relocation (also known as buyouts). Funds were allocated to places that have had the worst disasters recently, including California, Florida, Georgia, Missouri, Texas, West Virginia, Puerto Rico and the U.S. Virgin Islands. As with the annual CDBG program, the CDBG-Mitigation program appropriately gives flexibility to state and local governments to choose from a menu of eligible activities to suit their local needs. Mitigation measures have been proven to more than pay for themselves. A FEMA-endorsed study by the National Institute of Building Science found that taxpayers save an average of $6 in future disaster recovery costs for every dollar spent on hazard mitigation.[5] I further commend the Congress for authorizing FEMA, through the Disaster Recovery Reform Act, to set aside six percent of Disaster Relief Fund dollars for hazard mitigation projects.

As a nation we are becoming more aware of our physical and financial exposure to impacts of the changing climate, with about six in ten Americans at least "somewhat worried" and more than one in five Americans (23%) "very worried" about global warming.[6] However our worry has not been matched with proactive lifestyle, zoning, and building code changes. All over the country, people are confused about what they can do to protect themselves and their communities from what's to come. Forward-thinking cities, including more than two dozen American cities that participated in The Rockefeller Foundation's 100 Resilient Cities initiatives, have been working hard to design community-scale plans for protection, setting an excellent model for similarly-situated cities. But still as a nation we are underinvesting in preparing for the impacts of extreme weather events. Despite growing interest and commitment, our housing, infrastructure, and regions are not mitigating or adapting at the necessary pace of change. And inefficiencies in programs which are tolerable in normal times exacerbate post-disaster challenges.

In the extreme, the lack of physical infrastructure and natural systems necessary to withstand extreme weather conditions has led to displacement of entire communities of people, from Alaska to Louisiana to Puerto Rico. And we have a lack of user-friendly available data that can educate our communities on hazard risk, so we continue to build infrastructure that is not designed to withstand what's to come.

This lack of investment and forethought leaves our communities vulnerable. As a result, the Federal Government is often called upon to authorize large supplemental appropriations to help communities rebuild homes and apartment buildings, reopen hospitals and schools, and cover uninsured losses for small businesses. According to the Government Accountability Office (GAO), since 2005 the federal government has spent at least $450 billion on disaster assistance. The unprecedented levels of funding for disaster recovery must be spent with an eye to the future. And to improve efficiency, communities should be encouraged to align their federally-mandated planning processes, so that, for example, a community's hazard mitigation plan aligns with its consolidated plan and disaster recovery plan.

Local governments rely on partnerships, in many cases with the Federal Government, to make their communities safer and more resilient. Federal grants, loans, loan guarantees, and other federally-backed sources such as mortgage insurance and flood insurance help cities finance and protect critical investments. Federal regulations and guidance set minimum requirements and provide information to guide cities' decision-making and use of federal dollars. And federally generated data inform project planning and implementation. The Federal Government has done an admirable job of investing in states' and cities' projects and programs, providing some data and technical expertise and regulating private and utility actors. Communities

[4] Blatchford, Laurel. "Climate Change Disproportionately Affects Low-Income Communities." December 7, 2018. https://www.enterprisecommunity.org/blog/2018/12/climate-change-disproportionately-affectslow-income-communities

[5] National Institute of Building Science, https://www.nibs.org/page/mitigationsaves

[6] https://climatecommunication.yale.edu/publications/climate-change-in-the-american-mind-april-2019/4/

deeply benefit from and value these investments, but they often come with challenges. For instance, while cities rely on federal funds for affordable housing, infrastructure, and small businesses growth, all are authorized by different laws. Each funding source and corresponding law comes with a unique set of regulations, and this complexity can create barriers for cities and counties trying to use federal funding efficiently for integrated and effective solutions. In addition, while the federal data on flood plains is invaluable to cities, in many places, these data are out of date, lacking a reflection of changes to the built environment and climate conditions. And all communities suffer from the lack of a single source of data identifying all climate risks.

Through this testimony I recommend that Congress:

1. Charge Federal agencies with working together to provide the best available risk data to communities in a manner that is easily useable at the address or block level
2. Develop a Federal framework for rating resilient infrastructure
3. Improve and harmonize federal infrastructure requirements
4. Ensure that all federally-funded infrastructure projects—not just disaster recovery projects—are built to resilience standards
5. Increase HUD Community Development Block Grant (CDBG) program funding and mandate that a portion of the funds be used to identify and address local risks
6. Create a National Infrastructure Bank to further private investments in resilience

Recommendations:

Charge Federal agencies with working together to provide the best available risk data to communities in a manner that is easily useable at the address or block level

No private company, nonprofit institution, or local government is better suited than the U.S. Government to make accurate climate science and risk data available to the public. Further, in the absence of publicly available, uniformly applied metrics evaluating communities, individual jurisdictions and companies could suffer a "first-mover disadvantage" for disclosing risks while their counterparts do not.[7] The Federal Government alone has the power to shine a light on the risk we face, but it will not need to act alone once adequate information is shared. In creating risk data, it is important to include the unique needs of elders, people with disabilities and dependence on medical equipment, people with limited English proficiency, and people of modest means.

Develop a Federal framework for rating resilient infrastructure

Federal agencies should develop a framework for rating and evaluating resilient infrastructure design. The framework should serve as a best practice guide to help cities design, build and operate infrastructure to ensure its long-term viability and to deliver other environmental, economic, and social benefits, where feasible. Once a rating system is designed, federal agencies should then condition the receipt of federal funds on projects meeting a required resilience rating.

A rating framework would help agencies ensure that federally funded projects are evaluated consistently, and that federal investments are yielding resilient infrastructure systems. This consistency could, over the long term, create more efficiency and reduce operating and insurance costs, as well as mitigate risk. And predictability would remove a current obstacle to private investment.

The rating system should:

- Include metrics to help decision makers evaluate the factors of infrastructure resilience.
- Establish risk tolerance guidelines and help project designers incorporate risk mitigation.
- Address both future shocks and stresses, including sea level rise, extreme heat and changing precipitation patterns.
- Help design and develop infrastructure investments that provide multiple benefits, including projects that deliver improvements to infrastructure and the environment (including promoting reliable communication and mobility; ensuring continuity of critical services; providing and enhancing natural and man-made assets); health and well-being (including air quality and water quality); economy and society (including financial systems and job opportunities); leadership and strategy (including engaging and empowering community stakeholders).

[7] See Alice C. Hill & Leonardo Martinez-Diaz, Building a Resilient Tomorrow, Oxford University Press 2020, p. 61.

- Include guidance on how cities can rehabilitate or incorporate resilience into existing infrastructure or integrate resilience into asset management planning.
- Complement other sustainability rating systems that address specific infrastructure types (e.g. roads or ports) or can be incorporated into them (as the Water Environment Federation has done with Envision).
- Help decision makers prioritize community needs to ensure that investments made in infrastructure systems are efficient, equitable and risk-based.
- Require compliance with local, state and federal law.

Congress should direct the National Institute of Standards and Technology to work with federal agencies, the U.S. Global Change Research Program and other private sector standard-developing organizations, to develop or identify certifications for resilient infrastructure that also pinpoint a consistent and authoritative set of climate information to be used.

Once a framework is identified, Congress should require its use in appropriation bills, such as the water resources developments acts, military appropriations and transportation reauthorization bills.

Congress should require agencies to prioritize projects that achieve higher resilience scores when awarding funds for infrastructure projects through discretionary competitive grant programs such as the Transportation Investment Generating Economic Recovery (TIGER) as well as for United States Army Corps of Engineers and Department of Defense infrastructure work.

Improve and harmonize federal infrastructure requirements

Private investment in federal infrastructure projects is hampered by inefficiencies and lack of certainty on the front end. Many federal funding programs require applicants to demonstrate that their project is "cost-effective" by submitting a complex benefit-cost analysis (BCA, also known as a benefit-cost ratio or BCR) showing how the benefits of the project outweigh the costs. It is prudent to ensure that taxpayer dollars are invested in projects that will deliver maximum results. However, a traditional BCA imposes unnecessary transaction costs and decreases government efficiency and innovation at both the federal and local levels. This problem is typical for both routine and disaster recovery projects. Current agency practices for comparing benefits to costs are flawed and the complexity and uncertainties discourage leveraging federal funds with private investments.

There is no harmonization between departments and agencies such as the Departments of Transportation, Homeland Security, Commerce and the U.S. Army Corps of Engineers. Each federal agency has its own processes and formulas for developing a BCA. This system creates burdens on both federal agency staff and the cities applying for federal funds, because applicants are saddled with additional transaction costs by having to prepare different BCAs for different agencies, often for the same project. Typical agency BCA methods do not properly account for increasing potential for loss in consideration of future risks, such as impacts of climate change. BCA methods do not adequately allow project applicants to capture a project's economic, social and environmental co-benefits, including ecosystem services, or adequately quantify externalities of either cost or benefit. The discount rate is a rate set by the Office of Management and Budget (OMB) to determine the "present value" of the investment being made, using the concept of the time value of money to normalize when benefits are realized. However, it generally does not accurately account for future risk, or for projects like wetland restoration that appreciate over time.

The complexity of the BCA process for many federal grants discourages smaller communities with fewer staff and less resources from applying for competitive grants such as FEMA's Pre-Disaster Mitigation program grants. Rather than investing in technical assistance to teach smaller communities to navigate varying and complex approaches across agencies, Congress should require the Executive Branch to improve, simplify, and harmonize its BCA methods.

Congress should commission a National Academies study to develop a process for harmonizing benefit-cost analyses across agencies and departments that grant funds or regulate infrastructure and other development projects. This group would be charged with evaluating current agency BCA processes and identifying options for aligning these processes in ways that account for the full life-cycle benefits of a project, future disaster risks to the project, as well as the full range of social, economic, and environmental co-benefits. An explicit goal of the endeavor should be facilitating the use of natural infrastructure projects such as restoration of wetlands which will have low costs to operate and maintain over time. The National Academies, Department of Transportation, Economic Development Agency, and Housing and Urban Development should engage the public, including finance, insurance, engineering and construction, utility, credit rating, and institutional investor communities, in an open dialogue about best practices for conducting BCA for projects with a long design life. These discussions should address calculations of future risks and benefits, given projected climate and other changes.

The Congressional Budget Office should ensure that project budget analysis incorporates risk mitigation's impact on future savings to infrastructure and communities.

Ensure that all federally-funded infrastructure projects—not just disaster recovery projects—are built to resilience standards

Agencies such as HUD and FEMA provide assistance for resilient rebuilding to communities that have survived the worst. Those grant funds come with standards for resilient rebuilding, such as increased elevation of homes and critical facilities located in the 100 year flood plain, in consideration of future and not just current risk. However, the regular, non-disaster-specific Federal resources available for building roads, bridges, schools, hospitals, nursing homes, affordable housing, and other public facilities do not consistently require a consideration of flood risk over the course of the useful life of infrastructure. Every year, flooding is the costliest type of disaster damage.[8] We should stop investing taxpayer dollars in projects that don't plan for reasonably foreseeable risks. Congress should direct funded agencies to reinstitute the Federal Flood Risk Management Standards and develop other cross-cutting resilience requirements.

Proactively combating the impact of these disasters and building towards a more resilient future begins with building codes. In January 2019, a study by the National Institute of Building Sciences found that up-to-date model building codes save $11 for every $1 invested through earthquake, flood and wind mitigation benefits.[9] FEMA's current Strategic Plan highlights the fundamental role that up-to-date building codes have to play in disaster resilience and the promotion of public safety and property protection. However, more than two-thirds of communities facing hazard risk use out-of-date codes. If the Federal government is going to continue to supply state and local jurisdictions with aid to rebuild, they should require new repairs and construction to be done to the latest model building code. Additionally, where funding is going to new construction or substantial rehabilitation, they should meet green building certification, such as my organization's Enterprise Green Criteria.

The benefits of consistent codes are clear and will ensure that we have safer and more resilient homes, schools, workplaces, and childcare and healthcare facilities. Additionally, uniform adoption of modern model building codes is one of the easiest, most cost-effective ways to address our nation's affordable housing shortage. While it is vital that we tackle affordable housing challenges for American families, building cheap homes that will collapse in the face of any event, from minor flooding to historic is not the way to do it. All families deserve well-built homes they can afford, as well as the peace of mind that comes with knowing that their home can survive a natural disaster without bankrupting them. To protect families across the country, it's vital that we take these steps.

Increase Housing and Urban Development Community Development Block Grant (CDBG) program funding and mandate that a portion of the funds be used to identify and address local risks

CDBG provides essential annual resources to more than 1,200 cities, counties, states and rural areas nationwide. This formula allocation program is a crucial source of funding for a wide range of local projects, including funding infrastructure improvements, filling funding gaps in the development of affordable housing, and supporting code enforcement and other essential municipal services that have a real impact on the quality of a city's housing stock. For more than 40 years, CDBG has served as the cornerstone of the federal government's commitment to partnering with states and local governments to strengthen our nation's communities and improve the quality of life for low- and moderate-income Americans.

CDBG can be a powerful tool for advancing the resilience and adaptive capacity necessary to address future climate risks. The program already has a successful track record of being able to leverage funds. Based on reported leveraging data from 2018, there were 1,358 public infrastructure and public improvements activities recorded. These activities were funded with more than $390 million of CDBG funds and leveraged $563 million additional funds. Congress should expand the annual CDBG program, making additional capital available every year for activities now eligible under the one-time CDBG-Mitigation program. This funding should require that grantees adhere to forward-facing building codes, to ensure that new projects are up to the latest standards. This will allow communities nationwide to embrace

[8] Lightbody, Laura. "Flooding Disasters Cost Billions in 2016." February, 2017. https://www.pewtrusts.org/en/research-and-analysis/articles/2017/02/01/flooding-disasters-cost-billions-in-2016

[9] National Institute of Building Science, https://www.nibs.org/page/mitigationsaves

a proactive approach to mitigation and resilience regardless of whether or not they have already been affected by a major disaster.

The program should identify and expedite activities known to mitigate risk:

- Explicitly state that eligible hazard mitigation projects include all activities permitted in FEMA's Hazard Mitigation Grant Program and Pre-Disaster Mitigation Program.
- Create catalogue of best practice mitigation strategies states can pre-approve and preauthorize for grantees.
- Maintain properties that have flooded multiple times as open space in perpetuity and deed restricted or used productively for water management or similar mitigation purposes.
- Encourage grantees to use funds for green infrastructure projects or other nonstructural, nature-based flood protections that are known to adapt to as well as mitigate flood risk and provide multiple co-benefits. Also allow funds to be used for operation and maintenance of green infrastructure projects.
- Allow and encourage other activities that reduce risk and benefit LMI communities.

Maintain a continuous feedback loop on whether programs are sufficient to meet community needs with ongoing CDBG-DR community participation requirements:

- Direct grantees to conduct a minimum number of public hearings to maximize community input and buy-in and for all major projects and programs.
- Direct grantees to create advisory bodies of affected populations (including homeowners participating in buy-out programs, small business owners receiving loans for their properties, residents and businesses living near infrastructure projects with $50 million or more of federal funding, etc.) to consider ongoing decisions and input as programs and projects progress. Grantees should produce periodic reports detailing why proposed changes were accepted or not accepted. Prioritize use of taxpayer dollars for projects that both reduce risk and deliver other needed benefits for low- and moderate-income communities.

Require that mitigation projects deliver a benefit greater than risk reduction alone:

- Encourage CDBG-eligible activities that produce risk reduction along with other co-benefits to low-income communities.
- Prioritize mitigation investments in communities with the highest vulnerability to hazards.

Create a National Infrastructure Bank to further private investments in resilience

The Federal Government should further explore partnering with the private sector to ensure robust investment in resilient infrastructure investment through the creation of a National Infrastructure Bank. The use of private financing for infrastructure projects in the United States is not as substantial as it should be, in part because financing requires a revenue stream to pay back the loan. Infrastructure service fee structures do not account for the full cost of service, repair and maintenance and thus often private investors do not deem these projects to be financially prudent.

By creating a National Infrastructure Bank (NIB), Congress could enable private sector investment to rehabilitate and enhance the resilience of infrastructure. Infrastructure banks are often capitalized by public sector dollars, with public sector money then lent to state and local governments at below-market rates to attract private loans or deployed via loan guarantees for infrastructure projects that provide a clear public benefit. Revenues generated from the projects are then used to repay the loan and recapitalize the bank to fund other projects. To ensure that projects receiving NIB financing are meeting the resilience needs of cities, legislation creating a NIB should be designed with the following principles in mind. The NIB should: provide funds to complement, not replace, existing federal programs such as the Highway Trust Fund and State Revolving Funds and provide financing options for a variety of infrastructure projects (e.g., energy, water, transportation, communications).

The NIB could bring a great deal of value to many cities. For example, New York City's partially funded $3.7 billion coastal protection plan calls for flood-protection infrastructure and ecosystem restoration to enhance the city's flood resilience.[10] Berkeley's 5-year, $30 million initiative calls for street improvements and green in-

[10] 100 Resilient Cities Resilience Strategy accessed from Georgetown Climate Center Adaptation Clearinghouse: http://www.adaptationclearinghouse.org/networks/100rc-resilience-advisory-council/resilience-strategies.htm

frastructure to address storm water management and other resilience objectives.[11] These investments would not only help these cities enhance their resilience, but also create job opportunities and increased economic investment into local city economies by supporting goods procurement and support for service.

Congress should create and capitalize a NIB to facilitate private financing for projects aimed at rehabilitating and modernizing infrastructure. The expertise of leading infrastructure agencies should be sought in the design of the NIB to ensure that NIB financing can be blended with other public-sector dollars and financing mechanisms. Departments with leading roles in infrastructure funding and financing include the Department of Transportation, US Department of Agriculture with investments in rural communities, Department of Defense, Department of Energy and the Environmental Protection Agency.

Conclusion

In order to spur the level of investment and focus that is required to combat the looming threats of climate change, we must act boldly. I commend the House Select Committee on the Climate Crisis for your commitment to examining how to best create a climate resilient America and thank you for seeking my organization's input. Working collaboratively across all levels of government, the private sector, and non-profit institutions, we can build resilient futures.

Ms. CASTOR. Well, thanks to all of our witnesses for your very substantive recommendations to the committee.

At this time, I will recognize Ms. Bonamici for 5 minutes.

Ms. BONAMICI. Thank you very much, Chair Castor and Ranking Member Graves.

And thank you to the witnesses for this important conversation, for bringing your expertise.

I am from the Pacific Northwest, where we know, of course, climate change isn't just a distant threat; it is a reality. And we know the science is clear, and we know the consequences of inaction are serious. If we don't take steps to help our communities prepare for the climate crisis, the effects will continue to disproportionately affect frontline communities.

In the Pacific Northwest, this includes Tribes that have treaty rights and a deep cultural connection to our natural resources but also economically disadvantaged communities and communities of color. So I am glad that some of this hearing today is focused on making vulnerable communities a priority.

The Portland Harbor Superfund Site in my home State of Oregon was added to the EPA's National Priorities List in December of 2000. I will say that again: December of 2000. The site is extremely complex. It involves hundreds of contaminants from industrial activities, more than 150 potentially responsible parties, and thousands of acres along the Willamette River, which passes through Oregon's most populous city.

And, last month, the GAO released a new report finding that 60 percent of Superfund sites are threatened by the climate crisis. And we also know from a 2017 report from the EPA that the communities near Superfund sites across the country disproportionately affect people of color, low-income households, and individuals with less than a high school education.

So, Mr. Gaffigan—did I say your name right? Was I close?

Mr. GAFFIGAN. You were right on.

[11] This initiative was passed by voters in 2012. http://www.ci.berkeley.ca.us/City_Manager/Press_Releases/2014/2014-08-28_Measure_M_spurs_the_paving_of_streets_throughout_Berkeley.aspx

Ms. BONAMICI. In your testimony, you mentioned that the Federal Government does not currently strategically identify and prioritize projects to address significant climate risks.

And as our committee works on recommendations to direct agencies like the EPA to consider climate resilience when making investments in programs like the recovery of Superfund sites, how can we incentivize Federal agencies to become more responsive to the needs of frontline communities?

Mr. GAFFIGAN. Yeah, I think it is an excellent question. And, as you know, in that report, what we pointed out with EPA is they lack an alignment of their goals to the risk associated with climate change. And, you know, again, it starts with that vision and those goals.

And we think, not only at EPA but in terms of a broader strategy, whatever goals and vision can be set aside that identifies the needs of those communities—those communities that are in position to not have the resources to apply for grants, those communities need to be helped and can be targeted, but we don't have goals around that. And I think that would be something Congress can think about, in terms of targeting help for these communities.

Ms. BONAMICI. Thank you so much.

And, Mr. Gaffigan again but also Ms. McFadden, you each mentioned the concept of a climate infrastructure bank to help finance resilient infrastructure projects. And I frequently hear from elected officials in the Pacific Northwest about the need for additional opportunities to leverage local and Federal dollars in transportation and infrastructure projects.

So how could the structure of a climate infrastructure bank complement existing Federal funding opportunities? And then, also, how should it be structured to make sure that it is valuable for both large, urban areas but also smaller, rural communities?

And I will start with Ms. McFadden and then go to Mr. Gaffigan.

Ms. MCFADDEN. Thank you so much for the question.

Of course, an infrastructure bank won't work for every type of infrastructure project. There needs to be some ability to pay back a loan. But for those projects where there is a reasonable opportunity to find that payback, it is going to be important to subsidize capital and make sure that that is available for communities.

Ms. BONAMICI. Thank you.

Mr. GAFFIGAN. And I would just add that, you know, in terms of the Federal Government, I talked about the Federal Government being in a position to provide information, integration, and incentives. And I think that incentive piece is the part that really can help here, by incentivizing local communities with incentives to take complementary types of action, such as the latest building codes and those sorts of things. So I think that is the role the Federal Government can play when it comes to incentives.

Ms. BONAMICI. Thank you very much.

I am going to yield back the balance of my time to the chair. Thank you.

Ms. CASTOR. Mr. Palmer, you are recognized for 5 minutes.

Mr. PALMER. Thank you, Madam Chairman.

I want to talk about a couple of things here, and particularly with the GAO. I tell people that GAO is my favorite organization, but I am a nerd, so that speaks volumes about my personality, I guess.

Mr. GAFFIGAN. Well, we are all nerds too, so that is probably why.

Mr. PALMER. That is why we get along so well.

Mr. GRAVES. Say all that behind you all's back.

Mr. GAFFIGAN. No, they usually say it in front of us.

Mr. PALMER. No, I work for a couple engineering companies, and I tell people engineers are people who are good at math but don't have enough personality to be an accountant. No offense to the accountants in the room.

But one of the things—and we actually had a discussion about this in one of the hearings that I chaired on the Oversight Committee, is about the failure of various Federal agencies that are listed as high-risk to follow through and make the necessary corrections.

And I think in your testimony you point out that the GAO has highlighted the Federal agencies related to climate change and the risk and practically nothing has been done. Is that correct?

Mr. GAFFIGAN. We have a long way to go. It is a hard task, I will say that, because they are trying to coordinate activities across a very crosscutting type of issue, and we are not set up for that.

And, again, I will go back to—the one theme here is that there hasn't been a strategic vision established. So a lot of agencies are interested in helping, but a lot of times we hear, "That is not my job," or, "I don't have the authority," and that is the thing that needs to be fixed.

Mr. PALMER. But you also identify in your testimony, or mention in your testimony, about the misuse of funds, the lack of—for lack of a better word, the lack of transparency and accountability, which has been a problem throughout the Federal agencies, particularly in respect to improper payments and that sort of thing, which brings me to what Mr. Burns mentioned about Katrina.

There is a long history there of bad decisions and misspent money that you really don't address in your report but I think should be addressed, in respect to what happened with Katrina, that was avoidable. There were literally hundreds of millions of dollars that were misspent—ill-conceived projects to protect the city from, at a minimum, a Category 3 hurricane; money that was spent to put in access to casinos. The Corps of Engineers wanted to put in locks to protect the city from flooding from Lake Pontchartrain; instead, contracts were let to raise the levees, which were in—the foundations were inadequate. The piling wasn't deep enough. And those pilings collapsed, and that is what flooded many of the streets.

I think that has to be part of what we address in resiliency, is we got to make sure that when we do the studies—and the Corps of Engineers is—Lord knows they are famous for long, long studies. But once we reach a conclusion on design, it needs to be implemented.

Mr. GAFFIGAN. Yeah. And I think it goes back, again, to not having a clear vision of what these projects are about. And when you don't have that, it is wide open and you get the kind of things that you are talking about, where there is not clear direction on what this money is for.

Mr. PALMER. Well, the point that I have tried to make in this committee time and time again is that the climate is changing. We spend most of our time talking about CO_2, but if you look at the geological record, we know the climate is changing. We are going to have some major issues to have to deal with, whether it is storms, whether it is flooding, whether it is drought. And I think we really need to be preparing for that.

You know, I went back and I looked at some of the data on the intensity of storms. The deadliest storm in the history of the United States was in your area, 1900, the Galveston hurricane. If you adjusted the damages that were reported at that time—and I am not sure those estimates were accurate—in today's dollars, that would have been well over a billion dollars, I think, and somewhere between 6,000 and 12,000 people killed.

We try to attribute these storms to climate change. I think the International Panel on Climate Change report has indicated that there is no connection; at least, they haven't found a connection to that. The bottom line, though, is that the climate is changing, and we are going to have to deal with it.

And my perspective, Madam Chairman, is that when we get these studies, when we know what the design ought to be, we have got to have some ability to have some oversight to make sure that what needs to be done actually gets done and the money is spent where it needs to be spent.

Thank you for giving me an extra 15 seconds. I yield back.

Ms. CASTOR. Mr. Huffman, you are recognized for 5 minutes.

Mr. HUFFMAN. Well, thank you, Madam Chair.

And thanks to this terrific panel. I appreciate the opportunity here to examine the ways that existing resiliency policies are failing to meet the needs especially of the frontline communities, disadvantaged communities. So thank you for giving us a chance to focus on that as well.

As this committee develops its recommendations on how to increase resiliency, I think it is very important that the policies that we support have to work for all Americans. In addition to assuring that our policies work for all Americans, we have got to ensure that they are forward-looking. And I am really pleased that that was kind of a common theme we heard from all of our panelists here today.

I know climate change is not only happening, it is going to get worse in the years ahead. In my home state of California, we now have a year-round fire season, a fire season that visited my district pretty brutally just a few months ago.

And with warmer climates, more intense storms, atmospheric rivers that have made it a very wet December so far in northern California, more heavy and intense rainfall, all of this is going to contribute to more extreme and intense flooding as well as greater frequency of superstorms.

And so, as we rework our policies aiming for resiliency in rebuilding communities after disasters, I think it is not only important that we not rebuild to the last disaster, that we rebuild maybe even better than to the next disaster. Let's look ahead to the next decade's or the next generation's disasters while we are at it. And I appreciate that this seemed to be something that all of our panelists were interested in doing.

Mr. Gaffigan, I want to start with you. I was interested in your testimony that recommended—your GAO recommendation that the Federal Government achieve an organizing arrangement to identify and prioritize climate risk.

But that was pretty vague. And so I guess I want to ask you to——

Mr. GAFFIGAN. Yeah.

Mr. HUFFMAN [continuing]. Be a little more specific, sharpen that. What does it look like? Are you talking about a new Federal agency, or are you talking about new rules of the road for all Federal agencies so that we can identify and prioritize climate risk?

Mr. GAFFIGAN. Yeah, and it was worded intentionally vague, because we want to give you guys the wide option to make these policy decisions. But, in our report, we talk about some particular options. And I think it can look in different ways. It could look like a task force. It could look like a new agency. We could take advantage of some of the current working groups. I think there is a wide range of options there.

I think the most important thing is to designate who is in charge. And that can be a working group. That could be a lead Federal agency. It just needs to be done. We have tried in this work over climate change over the past 10 years to focus recommendations towards the Executive Office of the President, thinking that might be where it is at.

But Executive Orders don't last in the long term. So we think, in the long term, there needs to be some Congressional direction, you know, of course, in concert with the Executive branch, to decide on what is the best path forward. But identifying that authority and making sure it has the authority to lead, that is what is missing.

Mr. HUFFMAN. Do you have any thoughts on whether this would be a coordinating, like at the CEQ-like authority?

Mr. GAFFIGAN. It would totally have to be an integrating body, because there are so many ongoing programs, and you want to take advantage of the ongoing programs. And you can mainstream some of these thoughts into those existing programs. But what is missing is everything else that gets left.

For example, we have programs that focus on infrastructure like wastewater, drinking water, roads, but we don't have something that sort of tries to head off the kind of disaster relief that we have to provide for private homeowners. In the flooding arena, the Flood Insurance Program is not solvent.

So those are the areas that need to be covered. There needs to be some entity that focuses on climate resilience in those other areas.

Mr. HUFFMAN. Okay.

Ms. McFadden, you testified that you recommend developing a Federal framework for rating resilient infrastructures. I was interested in that.

And coming from fire-prone northern California, where our electricity transmission infrastructure seems to be sparking fires every time the wind blows, I wondered if you could envision electricity transmission infrastructure being part of a rating policy like that.

Ms. MCFADDEN. I would hope that it would be, but I can't offer a specific recommendation around that. I understand from my visits to northern California that sometimes it is as much as clearing brush can make a big difference in the safety——

Mr. HUFFMAN. Although that is not what happened this time.

Ms. MCFADDEN. No. And I would——

Mr. HUFFMAN. This time, it was a jumper in between a pole and a high-capacity line that failed and dropped to the ground. And I didn't realize that these devices are so energized that they can spark fires because of molten metal that can get spewed when these things fail.

Ms. MCFADDEN. I would defer to NIST to determine the appropriate people to bring to the table, but I would hope that there would be a solution there.

Mr. HUFFMAN. Thank you.

And thanks, Madam Chair. I yield back.

Ms. CASTOR. Mrs. Miller, you are recognized for 5 minutes.

Mrs. MILLER. Thank you, Chair Castor and Ranking Member Graves.

And thank you to all you all for being here today.

Given our discussions in this committee, all of us have experienced some kind of natural disaster in our states. When a disaster strikes, it is our state and local communities who are left to pick up the pieces and rebuild.

Ensuring that communities not only have financing but also have the knowledge on how to access the financing and the tools to cut through bureaucracy is crucial. The time after a natural disaster is so stressful for any community, and any time cutting through red tape should be minimized. Because you know what it is like when you are always waiting.

Mr. Wemple, how have communities within the Houston-Galveston Area Council utilized public-private partnerships?

Mr. WEMPLE. Thank you, Mrs. Miller.

I would say that public-private partnerships in our region traditionally have been more around economic development and commercial development, but there are some very recent examples, one that we are working on, that looks at resiliency.

There is a community in one of our counties that has a railroad that comes through it, and it is actually called the "candy cane" because it is shaped like a candy cane when it comes through. It causes a lot of delays, people trying to get around. It affects their evacuation going forward and actually has hampered their economic development activities because businesses don't want to relocate there because it is such an issue.

They are teaming with our state Department of Transportation and also the railroad companies and other private investors to look at rerouting that entire candy cane part to where it will be better for the community to help with their evacuation, to help with their economic development, and actually open up a part of that county to future economic development along the rail.

And, as a bonus, once that is done, the county will have a better idea of where they can install large, regional-scale detention facilities for future floods.

And so that would not happen without that private-sector investment from the railroads and others. So that is one example I would offer up.

Mrs. MILLER. A majority of communities within my district are very rural. What are some of the best practices you have seen in the HGAC to access financing after a disaster?

Mr. WEMPLE. One other thing that we work with through our regional council—I have communities that are highly urban, suburban, and rural. We place a lot of emphasis on helping our rural communities because they tend to lack capacity to be able to navigate some of these issues.

And one of the thing we first do at Houston-Galveston Area Council after a disaster or when funding becomes available is we put a big list, have an umbrella, here is all the funding that is available, and we actually provide technical assistance to those communities to help them navigate that structure.

That is something that could be considered. I mentioned an investment portfolio approach earlier to looking at resiliency. And having a body or at least an initiative that provided more flexibility across those funds would be very helpful.

What we oftentimes hear in our rural areas, “We have a great project that needs to be funded.” “Well, we can’t fund that because that is an Army Corps of Engineers project,” or, “We can’t fund that because it is a FEMA project.” Why can’t we just fund the project and find a way to help that community be more resilient?

So one thing that could be very helpful would be to work to increase the flexibility and look at the spectrum of funding that is supporting more resilient communities and great projects as opposed to falling within those silos. That would help a lot with rural communities.

But mostly our technical assistance efforts are one thing that we pride ourselves on.

Mrs. MILLER. What about pre-disaster mitigation?

Mr. WEMPLE. Pre-disaster mitigation. We also help our rural counties by conducting the FEMA-required hazard mitigation plans at the county level. For our rural counties, we just completed a recent cycle on that as well. So the Regional Planning Commission is very much a partner in helping provide that technical assistance and work for our rural communities.

Mrs. MILLER. Okay.

My next questions are for Mr. Burns and Mr. Wemple. Recovering from a disaster depletes capital from communities. How can communities rebuild capital for future events?

Mr. BURNS. I think the important thing to do is what we talked about earlier, which is encouraging private capital to come in. The capital just doesn’t exist on the public side, and it won’t exist without an economy to generate it.

So I think creating space for private capital to come in. Also, foundations have been more interested in public finance. It is really on all-hands-on-deck approach that I think needs to be taken by all levels of government.

Mrs. MILLER. Thank you.

Mr. WEMPLE. One thing that we saw after Hurricane Ike is our coastal communities in our NASA area, home to Mission Control, were heavily damaged. They all bonded together to try and help pursue disaster recovery funding and mitigation funding. Right after that happened, NASA announced that the human space flight program, shuttle program, would be shutting down, and that was a huge economic shock.

And so one thing that we are encouraging our communities to do is to diversify their economies so they can better withstand economic shocks. And, also, that will allow them to generate more sales tax revenue, more business revenue, property tax as well.

We have also had communities take a close look at their own vulnerability. One of our coastal communities found out real quickly that they were overly dependent on sales tax for their revenue to do their operations and general services. Because they were shut down for 2 months after the storm, and when you don't have any businesses coming in, any sales tax revenue, you see a reduction in your loss of ability to be able to fund those operations. So——

Mrs. MILLER. What did they do?

Mr. WEMPLE. What they have done is they have started to have the discussion of increasing property tax. That is not always a comfortable conversation, one of those hard conversations that is out there. And then also just making sure that they have the ability to pre-position contracts to take on debt if they need to, as well, to meet future needs.

Mrs. MILLER. Thank you.

Ms. CASTOR. Mr. Neguse, down there at the end, welcome. You are recognized for 5 minutes.

Mr. NEGUSE. Thank you, Madam Chair. And apologies for the delay in my arrival.

And I would be remiss if I didn't first say a note of gratitude for the leadership of our chair, who did an incredible job in assisting in leading a delegation to the U.N. COP25 conference just last week, and a number of the committee members who had an opportunity to attend, and to see the way in which the leader of this committee was received by so many of our international partners as we engaged in topics, including the one that is the subject of today's hearing——

Ms. CASTOR. Thank you. You can have 6 or 7 minutes.

Mr. NEGUSE. I appreciate that, Chairwoman.

This topic is incredibly important for me. My district, as some of you know, I represent northern Colorado—Boulder, Fort Collins, the Central Mountains—the most beautiful Congressional district in the United States, in my view. And, in 2013, our district experienced historic flooding, which some of you may be familiar with, along the Front Range of our state, which destroyed more than 1,800 buildings, mostly residential homes, and damaged at least 16,000 more, in addition to destroying 120 bridges and many miles of roads. And, unfortunately, we lost many people in those floods.

My district is still struggling to recover from those floods, as recovery guidelines outlined by FEMA currently require cities, counties, and homeowners to rebuild infrastructure in the exact way that it had been built previously in order to qualify for reimbursement, irrespective of the exigent circumstances presented by some of that rebuilding.

And I had a chance to tour some of the rebuilding earlier this year and to see the impracticality of this approach and, in my view, the shortsightedness of FEMA's approach in this regard firsthand.

There were new guidelines, as I know you all or some of you are probably aware, that were recently issued by FEMA, required as part of the Disaster Recovery Reform Act of 2018, which addresses some of these concerns but certainly not all of them. So I think this discussion is certainly a timely one and an important one.

So, with that, Ms. McFadden—and I apologize that I missed your oral testimony, but I did review your written testimony and found it particularly interesting, given that reference to the catastrophic flooding. In your written testimony, you state, quote, "Every year, flooding is the costliest type of disaster damage. We should stop investing taxpayer dollars in projects that don't plan for reasonably foreseeable risks."

And I agree with you. And I think we can all agree that identically rebuilding infrastructure that was destroyed in a flood 6 years ago isn't just incredibly dangerous but it ultimately is not an efficient use of those resources.

And so what would be your recommendations for making sure that our Federal agencies and our programs are able to help communities not just rebuild but improve their infrastructure to make sure it ultimately survives the next disaster?

And I should provide the added context that just getting FEMA to issue its guidance, which it did just last month, was a Herculean effort. And while I applaud, you know, the individuals in the agency who I know work incredibly hard, I will just tell you, there are a number of us here in the Congress deeply frustrated by the amount of time it took to even get to where we are now.

So, with that, if you could expound on that.

Ms. MCFADDEN. Thank you for the question.

I think that the 2013 flooding in Colorado is a painful example of the problem of having different standards across different Federal agencies. And I know that your Governor's office was particularly frustrated at the time, having to deal with multiple requirements across HUD and FEMA, for example, where HUD was requiring resilient rebuilding standards and the fight you mentioned with FEMA to put things back.

I think it is incumbent on the Federal Government to speak with one voice and to ensure that the rebuilding dollars are being used to address all foreseeable hazards and not being backward-looking and not just looking at the risks that the communities are facing right now but that they are going to face in the decades to come, as you think about the projected useful life of infrastructure and housing.

Mr. NEGUSE. Well, I appreciate that. And I would say, we welcome any particular statutory recommendations or regulatory ones that you might recommend, certainly from my part, to this committee as we consider the recommendations to make to the full Congress. Because I think this has to be a core component of the work for us moving ahead.

Ms. McFADDEN. Thank you. And I will take you up on that because I know you have been a stellar champion of low- and moderate-income people. Thank you.

Mr. NEGUSE. With that, I would yield back the balance of my time.

Ms. CASTOR. Thank you.

Mr. Carter, welcome. You are recognized for 5 minutes.

Mr. CARTER. Well, thank you very much, Madam Chair.

And thank all of you for being here. This is extremely important. Resiliency is extremely important to addressing climate change and addressing what we are doing in our communities.

Ladies and gentlemen, I have the honor and privilege of representing the First Congressional District of Georgia. And just for your benefit and the benefit of reminding my colleagues here on the dais that Georgia is the number-one forestry state in the nation. I just wanted to make sure you all knew that.

But I also represent 110 miles of coastline——

Mr. GRAVES. Football.

Mr. CARTER. I also represent 110 miles of pristine coastline, the entire coast of Georgia. Over the past 3 years, we have had three hurricanes, and we barely dodged one this year, with Dorian, and we were very fortunate to have dodged it. But this, as you can imagine, has caused us a lot of pain.

And one of the things that has really hindered us has been, some of the communities are still trying to get some of the funding from FEMA as a result of the 2017 hurricanes and trying to recoup some of the moneys that we spent in cleaning up after that. In 2017, we had Hurricane Irma, and even in Glynn County and Brunswick, Georgia, we are still having to recoup some of those costs and fight tooth and nail for them.

I just wanted to ask you, Mr. Wemple, if you have had any kind of similar issues in the Houston-Galveston area after a storm like we have experienced.

Mr. WEMPLE. Representative Carter, it is part of the way that the FEMA work goes, it seems, that our communities are given approval for a project, they conduct the work, and then they wait to see if they are going to be reimbursed. And that causes an incredible amount of stress because that money has been committed, they don't know if they are going to be reimbursed or not, and it might actually keep them from working on other projects that could increase the resiliency for their community.

It also becomes very frustrating and a long endurance test. One of our coastal communities had their wastewater treatment plant, which was located right along the coast—they are a small community kind of hemmed in by others around them—heavily damaged wastewater treatment plant. Got damaged again by Harvey, and FEMA said, yeah, we think it is great that you want to relocate that wastewater treatment plant, because they finally found an area where they could move it to.

So they were initially approved, but then not approved, because, as they talked about the project more, the discussion became, is it a relocation or is it a new facility? And the idea was, they would build a new facility, keep the old one on line, and then bring that one up and turn that one down——

Mr. CARTER. Which makes perfect sense, right?

Mr. WEMPLE. And it is like, no, that is not a relocation, that is a new facility, because you are not moving the facility to a new location.

Mr. CARTER. Yeah. Welcome to the Federal Government.

Mr. WEMPLE. So there was a lot of discussion back and forth, back and forth. We had help from our legislative delegation on those discussions, as well, and finally have come around to that project being approved. But it took incredible persistence and a lot of time and opportunity cost to focus on making that happen.

Mr. CARTER. Right.

And don't misunderstand me. We appreciate FEMA. And we appreciate them——

Mr. WEMPLE. We do too.

Mr. CARTER [continuing]. Being there. They are there when we need them, and thank goodness they are there. But it is situations just like what you have described and just like what I have described that—it just leads you to believe there has got to be a better way.

We can streamline this to make it to where, you know, instead of using this time trying to recoup moneys that have already been expended, we could be investing in projects that would make us more resilient, just like the one that you noted there.

Mr. WEMPLE. And I would say reducing the complexity that helps those conversations not happen, where we get caught up in a couple different words——

Mr. CARTER. Right. Right.

Mr. WEMPLE [continuing]. Would be very helpful.

Mr. CARTER. And I want to give you another example. You know, of course, we have barrier islands on the coast of Georgia and beautiful—the Golden islands and St. Simons. Jekyll Island is one of those examples. Jekyll Island is a State-owned island. And we have had a project going on there, that we have been working on the revetment structure that actually is intended for resiliency, is intended to make it that way. And, again, FEMA is partner in this project and in providing money for the project. And although we have gotten it resolved now, it took almost 7 months for us.

Another example of just, you know, bureaucracy and how we need to streamline this process. Any suggestions?

Mr. WEMPLE. You know, I think—and as I put some thought to this, it is interesting. I don't know if it is the massive amounts of funding that paralyze agencies and people. It is almost like, when the funding gets very large, all of us just kind of clench up a little bit, right? And you don't want to be the entity or the individual that approves some large, massive investment and didn't have it meet the eligibility criteria, for example.

And so I think, when we have programs that are able to quickly move and have strong trust and relationships in the communities, that then those projects tend to be better understood and more quickly approved than if it is a situation where you have people coming into a community who haven't been there before, don't quite know if this is really the right project or not. All of that requires a lot more vetting of those projects.

And so I think entities like the Economic Development Administration and the U.S. Department of Agriculture have very strong regional presence and strong connections to their communities and a certain level of autonomy to approve those funding projects.

Mr. CARTER. Right.

Well, thank you very much.

Thank all of you for being here. It is extremely important.

And I yield back.

Ms. CASTOR. Thank you.

Now I will recognize myself for 5 minutes for questions.

So a lot of local communities and regional areas are doing resiliency planning. They have done it without a direction from the Federal Government or many incentives at all, but it has grown out of necessity to plan ahead for the impacts of climate.

Where should this evolve to? How should the Federal Government encourage those communities to do that, to incentivize it? We have never really been in the—we are not a super-land-use-planning type of organization or structure.

But there has to be a way to encourage communities to do this resiliency planning, to provide the technical assistance of the Federal Government—I hear that loud and clear—and ensure that the communities that don't have the resources get the aid, assistance, grants to protect their areas. Are there some models now? Is one model the NPO structure? Please give us your ideas.

And let me start with Mr. Burns on this. What would work?

Mr. BURNS. Thank you, Chair Castor.

I would say that the first thing that needs to happen is all the Federal agencies need to get on the same page in terms of——

Ms. CASTOR. So that goes back to the overarching strategic vision.

Mr. BURNS. Yes. So the first thing is we need to get on the same page, understanding what climate resilience is, how it impacts us, what are all of the risks.

Ms. CASTOR. Educate communities, like you said.

Mr. BURNS. That is right. And then we can transfer that down to the communities and have common plans among communities.

Right now, you have cities adopting their plans, and everybody is coming up with something a little different. And it should be, because every community is different. But at the end of the day, we all need to be on the same page. And all of the programs need to be designed in a way that climate resilience is just a permanent box, and every agency understands what that box means, and that can be communicated to the communities.

And then streamlining access to capital, whether it be FEMA, whether it be through private markets. There just needs to be a streamlining of how we can access capital and the flexibility——

Ms. CASTOR. So that needs to be built into it.

Mr. BURNS. Absolutely—and the flexibility of that capital.

Ms. CASTOR. Uh-huh.

Mr. Wemple.

Mr. WEMPLE. I think what I would add to the testimony—I agree with the points that were just made.

A couple of models that have been successful in encouraging adherence to new ideas, like resiliency, hazard mitigation, when

FEMA announced that you had to have a FEMA-approved hazard mitigation plan to be able to receive hazard mitigation funds and pre-disaster mitigation funds, people made sure that it was included in their plans and did it. The grants to help make those plans possible were incredibly important, especially to our rural communities as well.

So that is one way to——

Ms. CASTOR. So that was in areas that had an overarching resiliency planning effort and those that did not——

Mr. WEMPLE. Yeah, it was basically you needed to have a plan that identified your risks and vulnerabilities and how you were going to mitigate those. Our plans for our region list those projects in the hundreds, for some of our rural counties. That effort probably wouldn't have happened without that requirement and the funding to help get that plan done. It was a small amount of funding, very critical, very good investment.

And then one that wasn't as required but more encouraged was the HUD Sustainable Communities effort from a few years back, where Housing and Urban Development, Department of Transportation, and EPA came together—HUD led the effort—and we were actually required to develop a plan that looked at all those things in concert as opposed to in their individual silos. Other agencies wanted to join on. USDA eventually joined on; Economic Development Administration.

So something, again, that informs all the agencies that resiliency is incredibly important, and here is what we mean by resiliency, and finding ways to link it to your planning efforts and to your funding are important.

Our NPO has started to make resiliency part of our scoring criteria for transportation investments in our region. We are not required to do that, but we decide to do it because it is important, because we keep hearing how we had to move the region forward.

Ms. CASTOR. So, Ms. McFadden, you were probably involved in that previous effort through CDBG and the other HUD initiatives.

Ms. MCFADDEN. Yes.

Ms. CASTOR. What do you recommend?

Ms. MCFADDEN. I think that it is very important for Congress to maintain some deference to the state or local governments to determine who the strongest local leaders are and not be overly prescriptive, because I have seen different parts of the country, different sectors, and different areas. So regionalism is strong and good in some places, and other places are a little more protective of their turf and stay within the boundaries of their own jurisdictions.

Ms. CASTOR. Yeah. Some folks don't want the—they know better on the regional level rather than the state oversight, but it is flipped in other areas. How do we structure that?

Ms. MCFADDEN. Well, my recommendation would be to use the vehicle of the Community Development Block Grant Program, which is already working successfully in providing funds to more than 1,200 jurisdictions across the country, allowing that local flexibility.

Ms. CASTOR. Do you have some thoughts on this, Mr. Gaffigan?

Mr. GAFFIGAN. So, just from the Federal perspective, I think Mr. Wemple made a couple comments that I wrote down about the need for an overarching coordinating event. And that is the role of the Federal Government can play, as an integrator.

He talks about all these entities chasing all these different streams, all with different requirements, and those requirements changing every time there is a new program. It is no wonder it takes so long to get these things out, because they come with all these strings. All these strings have to be figured out. The rules have to be written. The auditors are waiting to make sure that they get it done. And so that is why it is taking a long time.

So if we can focus on the integration role for the Federal Government in bringing all these partners together, that is where we are going to have success. And Mr. Wemple talked about how USDA has that regional presence. I think that is kind of the model we need to think about.

Ms. CASTOR. Okay.

All right. Mr. Graves, you are recognized for 5 minutes.

Mr. GRAVES. Thank you, Madam Chair.

Ms. McFadden, I appreciate you bringing up the issue about giving more discretion to local governments. I think it is an important lesson learned that we do need to apply to disaster planning, to resilience in the future.

Mr. Gaffigan, I want to ask you a question. You cited the Louisiana model that I am very familiar with and, actually, created in the previous life. What we chose to do, recognizing you have got HMGP, PDM, CDBG–DR, Corps of Engineers—you know, we could go on and on and on—we created the coordinating entity at the state level, and we blew up parts of five state agencies, we reconfigured and established the new agency and said, "You are in charge."

Now, recognizing the regulatory and expertise and other roles of agencies, we created a board of directors. We created a coastal board of directors, effectively, that included those various cabinet officials, including some state-wide electeds that run their own agencies with appropriate expertise. We also appointed regional representatives. So you had everybody at the table, and you could never be in a scenario where, you know, they say, oh, we are waiting on them, because "them" was at the table.

We ended up pulling together 42 funding streams, $26 billion, and made more progress in 6 years than I would put up against any 40-year period of time.

Now, politically, it took Hurricane Katrina to have people let go of those fiefdoms. And that is one thing that many other places around the country haven't experienced. Mr. Wemple, you all have, in the aftermath of Hurricane Harvey. But you know what? I said this in my opening, and I will say it again: I would never wish that upon anyone. And we have got to learn from those painful mistakes.

Do you think that this has to be at the Federal level, or do you think, recognizing you have a different scenario in Texas than you have in Louisiana, than you have in California, than you have in Florida, that possibly—and I don't have an answer; I am just curious—do you think that it has to be at the Federal level? Or do you think that the coordinating role could be done locally in an effort to allow them to tailor it to their particular issues and problems and priorities?

Mr. GAFFIGAN. Yeah, I think that coordination has to happen there. I mean, you know the old phrase about all politics are local? Well, all adaptation is local, because that is where you need to understand the needs and bring the things together. And those are the players, those are the people who know what is best.

What we are talking about is just the Federal Government needs to be a partner in that and to coordinate. They need to coordinate amongst themselves, firstly, but then also make sure that they are providing the incentives to these local communities so they have the support to do what they need to do. Because it is going to fall down to all those partners.

And that is why I talked, at the beginning, about the Federal Government is just one stakeholder here. In no way do I envision the Federal Government being an overall coordinating body for all the climate resilience. That won't work. They don't have the expertise; they don't have the money. But they can be a strong partner in that. And I think that is where the key lies.

Having the ability to integrate, to bring people together, that is a role the Federal Government can bring, to bring information that an entity might not on its own have, but bring the kind of information and science that is needed to make the decisions, and, finally, to incentivize, with what resources we have, those sorts of things that are complementary to ensuring resilience.

I think that is a model that will work. We thought the Louisiana model was a good example, and that is why we used it in our report.

Mr. GRAVES. Well, thank you.

You know, we found, as we put that model together, there were numerous funding streams that previously were being spent, in some cases, actually contrary to the objectives of our resiliency. In other cases, we found opportunities where dollars were being managed just separately, and we were missing the opportunity to establish those symbiotic relationships or commingling funds.

In fact, we built one project, as I recall, six different funding streams, and all the different rules and regulations. And it was like a puzzle, putting it together. We eventually did it and got it done.

But I think there is a lot of opportunity there, and I want to thank you for your in-depth report and testimony.

Mr. Burns, other than your bloodline, which we have issues with, I do want to thank you for being very thoughtful about the role that finance plays in this. Because finance incentivizes the right actions, the wrong actions. And you talked about how, effectively, financial markets aren't designed to achieve the right type of outcomes and that we need to be more thoughtful about how to design the financing mechanisms that achieves these outcomes where we have more resilient communities, including access in low-income communities to housing.

What does that look like for you, in terms of you being a practitioner? What does that look like? What role does the Federal Government need to play, what steps, in order to make that happen?

Mr. BURNS. Well, the first thing is, we get most of our funding from the tax-exempt bond market. And most cities do. And as I mentioned in my testimony, there is no difference between the green bonds——

Mr. GRAVES. The green bonds and the municipals.

Mr. BURNS [continuing]. And the regular bonds. So I think the first thing that needs to happen is we need to create separation between the two. And that could be through a discount or a premium or one or the other.

Also, there is a need for tax credits for projects that don't generate capital, necessarily. For example, a green infrastructure project that is built behind a neighborhood. Maybe the water district wants to build a project that doesn't generate revenue itself but provides a lot of savings, a lot of benefit. We need to find a way to bring capital, private capital, into those types of projects.

And, again, the insurance component. There are savings that come from having the right kind of insurance. There are savings that come from having preventative insurance. And most of our programs right now run on insurance from the Federal Government. If you are talking about——

Mr. GRAVES. Figuring out how to monetize or capture those savings and invest it in proactive resilience-type measures, recognizing——

Mr. BURNS. I think that is part of it. It is capturing savings, but also proactively encouraging capital to come in on the front end so that we can have that flexibility to make those investments to create the savings. Because that is the problem.

Mr. GRAVES. Yep. You can monetize the savings by creating the right financial mechanism to allow it to be invested on the front end and then paid back, effectively.

Mr. BURNS. We need the capital on the front end to do it.

Ms. CASTOR. I want to continue with that thought. And then how do we really ensure that there aren't communities that are left behind, that we do not replicate the inequities of the past?

Because so many communities are going to bear the brunt of the climate crisis, and it is going to be very expensive to them. So what are the criteria, what are the checks all along the way to ensure that we are lifting people up at the same time and it is not just the wealthy communities with a lot of resources that get all the grease and the extras?

Mr. BURNS. Right. So, a lot of times when you have these programs, like the tax credit programs, they mostly go to benefit the developer or the corporation that is sponsoring the project, and the community gets some ancillary benefits, but the community is never really put to work. And I think you have to start putting the communities to work.

So it is hard for the Federal Government to tell the City of New Orleans what its disadvantaged-business requirements should be. We already have those, and each community is responsible for adopting those. So, in New Orleans, ours is 35 percent. We try as much as we can to go above and beyond that at the Finance Authority.

But I think what the Federal Government can do, as it creates these incentives and these programs based on resiliency, incentivize these local cities and governments to create space for disadvantaged businesses, for Black businesses, Hispanic businesses, women-owned businesses. Create the space and the incentives for them to do it. And make it dependent upon—make the funding, make the access dependent upon how equitable they are being with those investments on the ground.

And I think that is the best way to communicate it, from the top to the bottom. But, at the end of the day, each community is going to be responsible for making sure that the investments are going into the right places.

Ms. CASTOR. And then, Ms. McFadden, do you have some thoughts on that?

Ms. MCFADDEN. Sure. I agree with all of that. And I would add that it is really important to strengthen community engagement at every phase of large infrastructure projects. So, even with HUD funding, which is intended to primarily benefit people of modest means, historically there has only been one time that the public gets to weigh in on what a community plans to do. I was very pleased that we saw the Trump administration accept a recommendation to have a continuous feedback loop for the mitigation money, where the community forms a community advisory board to let the government know how things are going. Because it is really important to ensure that these projects are done for communities and not to them.

Ms. CASTOR. I have one other question, and then I will recognize you for another 5 minutes, if you would like.

Mr. Gaffigan, does GAO have any recommendations on the budget picture for climate?

You know, we don't have a rainy day fund or a disaster fund. Instead, if we have a natural disaster, there is a disaster funding bill, maybe a few. It leaves people in the lurch, the communities that need it. Yes, there is some money that can go out, but it is so bureaucratic, oftentimes, that people don't get the assistance that they need.

Does GAO have some recommendations on how we can be smarter about planning ahead for the increasing extreme weather events and Federal disaster aid?

Mr. GAFFIGAN. Yeah. So, at least with the last act, there is sort of a carveout, 6 percent of funding that can go towards mitigation. And I know FEMA is working on rules around that.

But I think Congress needs to decide where they want to target this funding. And they can do that. Particularly if you are wanting to target vulnerable populations, you could be explicit in that and have dedicated funding. That is one of the options. You could also mainstream some of those requirements in existing programs. But it starts with making that a goal, an explicit goal.

And it is interesting how—you mentioned being at the U.N. You are probably familiar with the U.N. Sustainable Development Goals. And they have a goal around serving these populations. It is to build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events.

So they have set up a goal. We could do that. Congress could do that. Congress could explicitly target a program to serve those communities with some dedicated funding. That is an option.

Ms. CASTOR. Terrific. Thank you very much.

Mr. Graves, you can have another 5 minutes.

Mr. GRAVES. Thank you, Madam Chair. I just—I wanted to hit a few things very quickly.

Mr. Gaffigan, again, in regard to your recommendations, I agree with virtually all of the recommendations you all have made. But I do think that we need to recognize—and I think you affirmed this—that the states need to step up as well. They need to create some type of coordinating entity, decide what it is that they want a resilient Indiana, a resilient Texas, a resilient Iowa to look like, and need to then take all the tools in the tool chest—and it is going to be everything from building standards and zoning requirements to how you use your CDBG funds and HMGP and PDM, as you just mentioned—use all those dollars to achieve that goal. Everything funnels into that objective.

Also, I have been incredibly frustrated—I believe Mr. Wemple discussed this a little bit—at the Federal Government actually prohibiting the integration. The Corps of Engineers saying, well, wait a minute, this is our authorized project, therefore you can't use your Pre-Disaster Mitigation, your Hazard Mitigation Grant Program, your Community Block Grant Disaster Recovery funds to advance this project that has been authorized for 30 years and hasn't been funded.

And what Mr. Palmer made mention of—I won't get into the full history, but there was an environmental group that sued the Corps of Engineers, made them pivot from the 1960s project to build the barrier at the lake to build multibillion-dollar rings around the entire length of the lake that was not completed in time for Katrina. The project dated back to the early 1970s. Today, the Corps of Engineers has a $100 billion backlog, and we are appropriating a couple billion a year.

Why in the world we would not not just allow but incentivize—incentivize—the use of the FEMA dollars and CDBG-DR and others for that purpose? If you have got the most important resilience project in your community, Mr. Burns, by God, let's incentivize the money to go there, not prohibit it. It is crazy what we are doing, and it is really inappropriate.

Now, similarly, in regard to coordinating roles, look, I have said this twice or three times now. As awful as disasters are, they are an opportunity to rebuild differently.

You are going through it, you have done it.

You have done it, Ms. McFadden, as well.

We have got to make sure that we take full advantage and we facilitate and incentivize the right type of behavior. And I am happy with what happened last year in the Disaster Recovery Reform Act, where we established the new resilience standard within FEMA and provided more funds and flexibility in how to achieve it.

But it is infuriating to watch FEMA come in and do immediate recovery, and then HUD is somewhere out here years later, and you have got this gap. And the people that you work with and the people that I represent, the people that you are currently—they are just stuck. They have a gap here. Their home flooded. They were paid for for a hotel for a couple months. HUD is 2 years out with the money. What are they supposed to do?

And so then they say, “Oh, well, we are going to rebuild resiliently.” No, my “resiliently” is trying to find a tent to live in right now. This isn’t okay, and we have got to do a better job with this.

And I cringe when I hear you recommend CDBG as the solution. I don’t think HUD is capable. And I know you work there, and I just—I don’t think they are capable, based on our experience. It took them 18 months to get the rules out for flood mitigation. I mean, this is inexcusable.

We have hundreds of millions of dollars sitting in the bank right now for recovery in Louisiana from a disaster over 3 years ago, and people are still homeless. And they can’t seem to connect the dots. This is crazy, that it is happening in the United States.

And I know I just ranted, but respond, somebody.

Mr. GAFFIGAN. No, but I think it is consistent with what we have seen, in that there is not that overall vision and that coordinating event that can be brought together. And so that is what is missing, that strategic look. And so you have all these little streams and all these pieces that can’t work together.

Mr. GRAVES. I just would love to see better coordination at the Federal level and then those entities at the state level with their clear objectives on what it is they are trying to achieve and then having the Federal dollars sort of help facilitate that.

We have got 30 seconds left. Just tell us about your family. No. Come on, anybody.

Mr. WEMPLE. I would just echo the comments here and say that the citizens that are impacted, they don’t distinguish between FEMA and HUD. They just know that the Federal Government is not providing them the assistance that they believe that they are entitled to or need at this time.

And so whatever we can do to, kind of, not have so many divisions on all the funding—I hate to keep harping on it, but that is key to all of this. If we start to think that way, then we will start to act that way, as well, too.

And people say, what do we need the most? I think we need resilient people. Resilient people means investment in infrastructure, investment in economy, and investment in education for those individuals.

One thing we are looking at is working with private lenders to help them look at their Community Reinvestment Act requirements to help people become more fiscally strong, credit-worthy, access to capital, just how to manage their finances, so when disaster does come—an economic layoff, something that puts you out of work because your apartment is out of commission and your business is closed for 2 weeks and now you are evicted from your apartment—we don’t want to have that type of thing happening. So we are doing what we can to try and use what is available.

Mr. GRAVES. Great. Thank you.

Ms. CASTOR. Do you have a unanimous consent request?

Mr. GRAVES. Oh, yes, I do. Yes, ma’am.

Madam Chair, I ask unanimous consent to include in the record testimony of Mr. Burns’ adjacent parish, St. Bernard Parish, the chief strategy and resilience officer testimony, expressing some of their experiences recovering from Hurricane Katrina and other disasters.

And I ask that be included in the record.

Ms. CASTOR. All right. And without objection.

[The information follows:]

Submission for the Record

Representative Garret Graves
Select Committee on the Climate Crisis

December 11, 2019

Written Submission for the Record From Reese C. May, Chief Strategy and Innovation Officer, SBP

"Creating a Climate Resilient America: Smart Finance for Strong Communities"

Select Committee on the Climate Crisis

December 11, 2019

Chairwoman Castor, Ranking Member Graves, and Members of the Committee,

My name is Reese May and I am the Chief Strategy and Innovation Officer for SBP—a nonprofit disaster preparedness and recovery organization committed to shrinking the time between disaster and full recovery. Since our founding in 2006 we've rebuilt homes for thousands of survivors, shared our best practices with hundreds of other organizations, and we've helped lead recovery efforts in disaster impacted communities all over the country from Louisiana to South Carolina to New York City, Puerto Rico, Texas and many places in between.

America's system for disaster recovery is slow and unpredictable and routinely fails to meet the challenges of devastated communities and survivors short on hope. Indeed, disaster survivors have perished on backlogged lists, awaiting recovery assistance that simply failed to reach them in time. After more than eight years with SBP, I've spent as much time working in disaster recovery as I spent as a US Marine. I am often thanked for my military service, but I am certain that the reform of our disaster recovery policy and regulation is more important to America and to Americans than either of my tours in Iraq. I appreciate this opportunity to share SBP's experiences on behalf of survivors waiting around the country and to offer suggestions on how we might improve.

SBP History and Background

SBP began six months after Hurricane Katrina when our founders, Zack Rosenburg and Liz McCartney, a DC-based criminal defense lawyer and educator, visited New Orleans to volunteer and were shocked by the lack of recovery progress. Homes were not yet being rebuilt at scale and families were losing hope. There were few resources and almost no organization and, as a result, disaster survivors were experiencing unnecessary suffering and being pushed beyond their breaking point.

Survivors like Mr. Andre, a proud American WWII veteran who owned his home before Katrina. For months he lived out of the back of his Ford Ranger pickup truck, eating community meals served from a tent in St. Bernard Parish.

He applied repeatedly for assistance, quietly driving each morning and night to a remote government lot to ask for a FEMA trailer. He repeated the process every day for months and was denied assistance. One night, he broke down to his fellow survivors over dinner at the food tent—ashamed that he needed help, that he could not continue on his own. Eventually, eight months after the storm, Mr. Andre got a FEMA trailer which was delivered to his property without a key. He still had no truly secure place to lay his head or keep his belongings. Nightmares like this one play out in disaster-impacted communities all over the country causing needless human suffering and pushing survivors beyond their breaking point.

This notion of the breaking point is central to SBP's work. While different for every individual, we all have one. After disasters, an individual's breaking point is determined by three critical factors:

1. Time—the amount of time it takes to make a full recovery.
2. Predictability—does a survivor have a clear path to recovery or are they staring into an abyss of uncertainty?
3. Access to Resources—Are survivors able to access the resources they need to fully recover and to survive while they do so?

Imagine for a moment constituents in your district: hardworking families who achieved the American dream of home ownership until a tornado, flood, or hurricane erase it all in an instant. How many of your vulnerable neighbors could survive a two year wait for hope repair funds? How many could handle the administrative redundancy of applying separately to three different federal agencies for assistance, only to apply again to state and local programs years later? How many families, who pay their taxes, who are current on their mortgage, could self-fund a $35,000+ flood repair because they didn't live in a mandatory flood zone and so were not required to have flood insurance? These are the families SBP serves. When disaster recovery is protracted and unpredictable, and when families are unable to access resources, they are at increased risk of being pushed beyond their breaking point.

Beyond the breaking point we lose hope. We lose our ability to be productive members of our community. We lose the ability to focus on our work and care for our families. In communities across the country I have seen this hopelessness manifest in the form of domestic violence, drug and alcohol abuse, and worse. SBP's mission is to reduce the time between disaster and recovery because by doing so we will prevent needless human suffering and fortify our fellow Americans against their breaking point.

In New Orleans in 2006 SBP began rebuilding homes one or two at a time. We partnered with local and national businesses, schools and churches to bring additional resources and volunteers. We later partnered with Toyota to improve our organizational efficiency and reduced our construction time by 48%, cutting in half the amount of time it took us to return families to their homes. To keep costs low and reach even more families we partnered with AmeriCorps to enlist service-minded individuals to help recruit and lead volunteers on construction sites conducting high-quality, low cost home repairs for families unable to afford market rate contractors. I began with SBP as an AmeriCorps member in New Orleans. After completing two tours in Iraq as a U.S. Marine, disaster recovery became my new mission.

Part II—Expansion and Interventions

In 2011, after an EF–5 tornado devastated Joplin MO, community leaders contacted SBP to ask if we could share what we had learned. A partnership was formed and SBP began work in Joplin. In late 2012, Hurricane Sandy impacted New York and New Jersey and SBP began partnership and direct service operations in New York City and along the New Jersey shore. We continued our expansion to South Carolina, Texas, Florida, Puerto Rico and other impacted communities to help begin rebuilding more quickly and to mitigate human suffering however possible.

Our expansion was not only geographic but also operational. It did not take long to recognize that while each disaster and community are unique; the ways that disasters affect communities are often the same. If we really wanted to shrink the time between disaster and recovery, and fortify humanity against the breaking point, we would need to do more than rebuild homes after they'd been destroyed. So we crafted our five strategic interventions aimed at increasing the efficacy of the disaster recovery "industry".

Today we **build** homes quickly, efficiently, and affordably using volunteer labor and Toyota Production System-inspired workflows and processes. We **share** our model and our resources with other organizations to increase the capacity of partners and raise the capacity of other groups. We help communities and individuals **prepare** for disasters through a variety of trainings and guides. We **advise** state and local disaster leaders on the most effective tactics, techniques, and procedures for administering federally funded long-term recovery programs. Finally we **advocate** for changes to federal policy and regulation that will positively impact the lived experience of millions of disaster impacted Americans each year. These strategic interventions are aimed at reducing time, increasing predictability, and making resources more widely and easily accessible thereby ensuring fewer Americans are pushed beyond their breaking point.

Part III—Successes and Challenges

My first person experience in more than a dozen communities has given me a clear look at long-term recovery efforts around the country. I have had the great privilege to meet some of the most thoughtful and deeply dedicated government employees from FEMA, HUD, SBA, and others as well as hundreds of servant-leaders in state and local governments who rise to the needs of their community.

I have met thousands of volunteers who cannot be categorized in any way other than profoundly American. They do not seek to help survivors of any specific political party, race, or religion. They simply give freely of themselves, their time, their energy, their expertise, and their dollars to help their fellow citizens in need. I say the following in the spirit of continuous improvement: America's system for disaster recovery does not currently match the empathy or the will of our citizen volunteers.

For an example of typical delay and lack of predictability consider long-term recovery CDBG–DR funds that flow from HUD to impacted communities. When disasters occur, Congress must first appropriate funds, then HUD must issue a federal register outlining the regulations for the use of those funds, then state and local governments must produce action plans, then HUD must approve these plans, and only then are disbursements made to state and local governments. The state and local governments then begin long and complicated procurement and contracting procedures to hire contract teams that take still more time to scale up and reach capacity.

The result is that it routinely takes **two years** for long-term recovery assistance to reach the first eligible families. It can take six years or more to reach the majority of eligible applicants and, all too often, not all eligible applicants are served. Many fall through the cracks of local programs while others self select out before receiving assistance, unable to deal with the uncertainty and delay. America built the transatlantic railroad in six years but somehow we struggle to deliver long term housing assistance to our most vulnerable citizens affected by natural disasters.

Another significant challenge is access to capital markets funds for quick and immediate repairs. There is a bit of a donut hole when it comes to financing for long term recovery efforts. Those with the most resources are the top half of the donut. These folks are self-insured. However, not all is doom and gloom. change is not impossible. There are also bright spots at the state and local levels worth celebrating and highlighting:

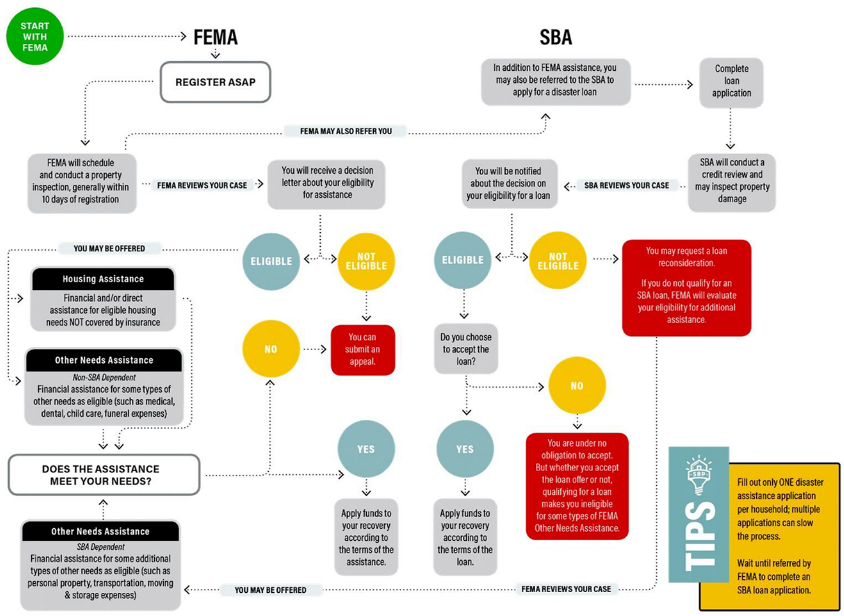
- FEMA and Puerto Rico's forward thinking and creative approach to STEP programs and difficult ownership verification are bright spots that show how innovation can drive better outcomes and results for survivors, taxpayers, and government at every level.
- South Carolina's Disaster Recovery Office has led one of the most efficient and productive federally funded housing recoveries in memory. CDBG–DR funds made it to citizens in month thirteen and services have been provided effectively, efficiently, and predictably throughout. It is rightly held up as a model for other state and local governments to emulate.

But innovation will be necessary to keep pace as more Americans in more disparate regions are affected by more frequent and intense natural disasters. The Disaster Recovery Reform Act has made a good start but more can and should be accomplished. Below, I offer four recommendations that could further improve disaster recovery and prevent more Americans from being pushed past their breaking point.

Create Single Application for Disaster Assistance

Disaster survivors are often required to complete duplicative applications with multiple federal, state, and local agencies, many of which require identical information that is often already in the hands of other government agencies. A survivor is expected to know that they must apply to FEMA and that they can appeal FEMA's initial decision if they disagree. Survivors are expected to know that if FEMA refers them to SBA the attendant loan application is something they need to fill out regardless of their ability to repay—because denial from SBA may make them eligible for additional assistance from FEMA and is an important factor in determining an individual's eligibility for long term assistance from HUD. They'll also need to apply again to a state or local program years later when HUD funds arrive. I've been looking at this process for years and I still don't understand the logic.

Think of the proud, hard working citizens, in your district. Folks who identify as givers and are loath to ask for help. How can we expect them to navigate this labyrinth in their most difficult days? A single application for assistance can simplify this process help reduce the burden of application for those most in need.



Improve FEMA's Capabilities for Damage Assessment and Analysis

Following large-scale disasters FEMA currently deploys teams of individual inspectors to assess damage to homes one at a time using paper and pen or tablet devices. After Hurricane Michael in Florida, SBP worked with FEMA Individual Assistance Data and aerial imagery provided by the National Insurance Crime Bureau to compare individual assistance awards amounts to visible destruction in the images. Based on a very small sample of that data in one community, local officials asked and FEMA reinspected seven properties where five received additional assistance and one award went from $1100 to $34,000. Imagine the impact of this at scale.

When actual damages are underestimated, families are deprived of much needed assistance and are required to navigate the complicated appeals processes I've described and visualized above. Meanwhile, private sector insurance and financial companies are deploying modern drone, AI and other technologies to develop more accurate and timely damage assessments. FEMA should pilot the use of this technology and analysis via a Private-Public-Partnership with technology and insurance industry actors, NGOs, and state and local governments. The pilot will identify ways to quickly improve the speed, accuracy, and consistency of FEMA's damage assessment capabilities.

Recovery Acceleration Fund

Across the Hurricane Harvey impacted areas in Texas, thousands of homes have already been rebuilt by nongovernmental organizations and volunteers while HUD funds are just beginning to reach survivors through state and local government programs. According to the Texas General Land Office's October report construction had been completed on fewer than 200 homes more than two full years after Hurricane Harvey made landfall. More than 13,000 have applied for assistance. The real limiting factor here is available, usable funding.

Under today's post-disaster federal funding model, non-FEMA federally authorized funds take at least 24 months to reach affected communities. However, eligibility for these funds is knowable as soon as HUD publishes the federal register. HUD and state governments should work together with NGOs and investors to create a marketplace where private and social impact capital can be deployed to quickly repair homes for qualified low to moderate-income survivors. Private funds can be reimbursed with CDBG–DR funds when they ultimately reach the affected community. This 'reimbursement' pathway is common in state and local action plans for survivors who can self-fund repairs, but no such mechanism exists for low to moderate-income families using private or charitable assistance.

Such a mechanism would effectively transfer delay and suffering from vulnerable families to investors' balance sheets. Families like Ms. Benjamin in Houston, TX who is 81 years young and disabled. Her daughter and granddaughter live with her in the family house. Before Harvey, with a household income just under 80% of the area median income, they had enough income to get them by and they were living a happy, normal life. After Harvey, they have struggled to recover. She used FEMA funds and savings to make repairs but there is still more than $6,000 worth of work left to do. Though she is eligible for CDBG–DR assistance, her family—like so many others—cannot afford to wait any longer on local programs to deliver assistance.

If the Recovery Acceleration Fund were implemented today nonprofit organizations could scale up their assistance efforts since funding would be available immediately. Overall repair costs would be reduced because houses wouldn't sit untouched falling into further disrepair. Most importantly thousands fewer disaster survivors would be pushed beyond their breaking point by protracted and unpredictable recovery.

State and local governments must attract more sustainable private investment

Federal resources are but one stream of the assistance needed for a full recovery. Many state and local governments may need access to capital markets to launch recovery efforts more quickly, often at a time when some lenders may look skeptically at recovery prospects. State and local governments can and must create better conditions for private and social impact investment to hasten recovery efforts as well.

Creative, public-private partnerships that make productive use of tax credit incentives and development programs, Opportunity Zone investment vehicles, paired with the potential for Community Reinvestment Act credit offer creative ways to attract institutional investment, grants, and other social impact capital. These funds can power programs like the Recovery Acceleration Fund and other innovations. State and local leaders must experiment and develop programs that attract this investment in long term recovery and in projects that better protect their communities from future disasters.

Support and follow up

SBP is committed to shrinking the time between disaster and recovery and preventing unnecessary suffering in the process. We must bring disaster recovery outcomes back in line with American values. Timely and predictable disaster assistance preserves the dignity of survivors and reaffirms the value of citizenship—in uncertain times, for those who need it the most. Needlessly complex, delayed, and unpredictable disaster assistance does the opposite.

SBP is a willing partner to Members of this Committee, relevant federal agencies, state and local governments, and other organizations interested in piloting and testing the approaches we recommend above.Thank you for this opportunity to submit comments and please call on us if we can assist in any way as you proceed.

Very Sincerely,

Reese C. May
Chief Strategy and Innovation Officer, SBP

Ms. CASTOR. Well, I would like to thank our witnesses for being with us today.

Without objection, all members have 10 business days within which to submit additional written questions for the witnesses. I ask our witnesses to please comply as promptly as you are able.

[The information follows:]

United States House of Representatives
Select Committee on the Climate Crisis

Hearing on December 11, 2019

"Creating a Climate Resilient America: Smart Finance for Strong Communities"

Questions for the Record

Mark Gaffigan

Managing Director,
Natural Resources and Environment
Government Accountability Office

THE HONORABLE KATHY CASTOR

GAO has reported that the federal government's fragmented and reactive approach to funding disaster resilience presented challenges to effective reduction of climate-related risks.

1. GAO reported that Congress could consider establishing a federal organizational arrangement to identify and prioritize climate resilience projects for federal investment. You testified that strategic goals for climate resilience need to be established and a federal structure is needed with the authority to lead, identify and integrate all stakeholders, define responsibilities, and address how the effort will be funded. As Congress considers establishment of such an approach, what lessons can we apply regarding the current approaches to federal investment in order to increase efficiency and effectiveness and speed delivery of those investments?

Currently, the federal government does not have a strategic approach for investing in climate resilience projects—that is, an intentional, cross-cutting approach in which the federal government identifies and prioritizes projects for the purpose of enhancing climate resilience. Federal agencies may take actions to invest in projects with potential climate resilience benefits related to their own mission areas using funds from federal programs designed for other purposes. However, no federal entity looks holistically at the federal government's investments to strategically prioritize projects to ensure they address the nation's most significant climate risks and provide the highest net benefits relative to other potential projects. As we reported in 2019, a strategic and iterative risk-informed approach for identifying and prioritizing climate resilience projects presents an opportunity to enhance the nation's resilience to climate change and reduce federal fiscal exposure. In particular, such an approach could help target federal resources toward high-priority projects—namely, those that address the nation's most significant climate risks and provide the greatest expected net benefits relative to other potential projects—that are not already addressed through existing federal programs.

Congress could apply several lessons from current programs, and several opportunities exist to increase the impact of federal investment in high-priority climate resilience projects. These include:

- ensuring that there is adequate and consistent funding for climate resilience investment,
- encouraging investment by nonfederal players and complementary resilience activities (e.g., climate-resilient building codes and zoning regulations that limit development in high-risk areas), and
- allowing investment funds to be used at various stages of project development such as project design, implementation and monitoring.

2. As part of a broad-based federal strategic arrangement for evaluating federal exposure to climate risks, how important would it be to require that agencies evaluate the impacts of climate change on their missions, budgets, and operations, and report to Congress on any additional authorities they may need to address those impacts?

We and others have reported that understanding the federal government's fiscal exposure to climate change risks is increasingly critical for policymakers charged with making sound investment decisions and acting as stewards of the federal budget over the long term. According to the U.S. Global Change Research Program's Fourth National Climate Assessment, a significant portion of climate risk can be addressed by mainstreaming—integrating climate adaptation into existing investments, policies, and practices such as planning, budgeting, policy development and operations and maintenance. However, as we reported in our 2019 high-risk list update, beginning in 2017, the administration revoked policies that had identified addressing climate change as a priority and demonstrated top leadership support for executive branch action. For example, a 2013 executive order that required agencies to develop adaptation plans—plans to evaluate the most significant climate change related risks to, and vulnerabilities in, agency operations and missions and outline actions to manage these risks and vulnerabilities—was rescinded in 2017. As such, limiting the federal government's fiscal exposure by better managing climate change risks remains on our list of high-risk areas needing attention by the executive branch and Congress.

Nevertheless, according to the Fourth National Climate Assessment, mainstreaming may prove insufficient to address the full range of climate risks. Additional, strategic federal investments in large-scale projects—such as those discussed in our October 2019 report—may also be needed to manage some of the nation's most significant climate risks, since climate change cuts across agency missions and poses fiscal exposures larger than any one agency can manage.

3. Your testimony reports that of the 17 recommendations GAO has made to agencies to improve federal climate change strategic planning, 14 remain unmet. GAO had made 62 recommendations related to the *Limiting the Federal Government's Fiscal Exposure by Better Managing Climate Change Risks* high-risk area. Twenty-five of those recommendations remain open. What should Congress do to help implement GAO's recommendations to limit federal fiscal exposure and improve federal climate change strategic planning?

Congress can continue to conduct oversight of these issues. These recommendations can be found in the "*What Remains to be Done*" section of the 2019 high-risk report. Limiting the federal government's fiscal exposure to climate change requires significant attention because the federal government has revoked prior policies that had partially addressed this high-risk area and has not implemented several of our recommendations that could help reduce federal fiscal exposure. We are ready to provide briefings on the status and importance of these unmet recommendations and the strengths and limitations of various paths forward laid out in our work.

When disasters occur, the destruction they cause must be addressed immediately, and disaster relief funding must be delivered expeditiously.

4. GAO research has identified challenges faced by states and local governments in navigating complex disaster recovery programs. What progress can you report from HUD and FEMA in implementing program changes to reduce program complexity and accelerate disbursement of recovery funds?

The Federal Emergency Management Agency (FEMA) has acknowledged that the complexity of disaster assistance programs can present challenges. FEMA's *2018–2022 Strategic Plan*, which is organized around three high-level strategic goals, entirely dedicates 1 of the 3 goals to simplifying and streamlining processes. In the course of conducting over 50 engagements related to the 2017 and 2018 disasters, we have not encountered an overarching effort or mechanism at FEMA that is specifically dedicated to achieving this strategic goal. However, we have observed examples of efforts to streamline and simplify within the policies, procedures, and guidance of individual programs. The most sweeping of these was a recent end-to-end review and redesign of the Public Assistance program's delivery model. In 2015, FEMA began working with a contractor to help implement a redesigned Public Assistance program. In the redesign, FEMA developed a new, web-based project tracking and case management system to address past challenges, such as difficulties in sharing grant documentation among FEMA, state, and local officials and tracking the status of Public Assistance projects. Both FEMA and state officials involved in testing the redesigned delivery model stated that the new case management system's capabilities could lead to greater transparency and efficiencies in the program. Similarly, in a memo to all FEMA staff about the 2020 Planning Guidance, the Administrator laid out several expectations for FEMA's Mission Support, Grants Program Directorate, and Office of Response and Recovery in reducing complexity.

Nevertheless, in the course of conducting recent work, we have continued to encounter examples of difficulties that delay or limit recovery efforts and frustrate officials at different levels of government as they attempt to navigate disaster recovery programs. For example, in October 2019 we reported that both the complexity of the

Public Assistance application and the relative lack of experience at different levels of government, including within FEMA, with wildfire damage of the magnitude experienced, created challenges and frustrations for local governments dealing with wildfire devastation. In that report, we recommended a comprehensive assessment of operations including policies, procedures, and training to enhance future wildfire response and recovery. In October 2019, we also reported on challenges with the grid recovery in in Puerto Rico, including uncertainty about FEMA funding eligibility, capacity constraints, uncertainty about the timing and amount of federal funding available, and the need for coordination. For example, according to local officials, FEMA had not provided sufficient guidance on how it would implement new authorities and determine eligible uses of FEMA funding to guide grid recovery efforts. Further, while multiple sources of federal funding were available, each funding source had different eligibility criteria, requirements, and time frames.

Challenges navigating across multiple programs administered by different federal departments and agencies is not unique to the recovery in Puerto Rico. For example, we found similar problems in 2015 when we examined the efforts to enhance disaster resilience during the recovery from Hurricane Sandy. In our analysis of the frameworks that guide the nation's efforts to prepare for, respond to, recover from, and mitigate the risk for disasters, we found 17 separate departments and agencies that have a role to play. Particularly, but not exclusively, for our nation's largest and most costly disasters, when recovery funds have been appropriated through a supplemental appropriation, state and local governments are left to work out how to use a patchwork of programs designed for different purposes and initiated at different points toward a comprehensive recovery and hazard mitigation approach. It will be important for FEMA to continue to make progress toward its strategic goal of reducing complexity and for all relevant federal departments and agencies to pay attention to opportunities to help disaster assistance recipients pursue more comprehensive recovery and hazard mitigation approaches.

With regards to the progress with HUD programs, we noted in March 2019 that the ad hoc nature of the Community Development Block Grant-Disaster Recovery (CDBG–DR) had created challenges for CDBG–DR grantees, such as lags in accessing funding and requirements that may vary for each disaster. We also found that grantees had difficulty coordinating with multiple federal agencies. We reported that because HUD lacks permanent statutory authority, CDBG–DR appropriations require HUD to customize grantee requirements for each disaster. We concluded that establishing permanent statutory authority for a disaster assistance program that meets verified unmet needs would provide a consistent framework for administering funds going forward. Therefore, we recommended that Congress consider legislation establishing permanent statutory authority for a disaster assistance program administered by HUD or another agency that responds to unmet needs in a timely manner and directing the applicable agency to issue implementing regulations. Since that report, legislation that would permanently authorize CDBG–DR has been passed by the House and referred to the Senate. It is important to note, however, that while a permanent authorization—no matter to which agency—may provide more stability and predictability in the functions that the CDBG–DR program serves, it will not reduce all of the complexity officials at different levels of government encounter when they must work across federal programs.

5. GAO has reported that, due to an artificially low indicator for determining a jurisdiction's ability to respond to disasters that was set in 1986, the Federal Emergency Management Agency risks recommending federal assistance for jurisdictions that could recover on their own. GAO has recommended that FEMA adjust its methodology for determining local capacity to ensure that the agency is focused on disasters that exceed local capacity. In the DRRA, Congress directed the FEMA Administrator to update the factors considered when evaluating requests for major disaster declarations. What progress has the agency made in implementing this provision?

The Disaster Recovery Reform Act of 2018 (DRRA) requires FEMA to initiate rulemaking to update the factors considered when evaluating governors' requests for major disaster declarations, including reviewing how FEMA estimates the cost of major disaster assistance, and consider other impacts on the capacity of a jurisdiction to respond to disasters. DRRA requires the FEMA Administrator to initiate the rulemaking by October 2020. As of January 2020, FEMA reported that it is currently reviewing the six regulatory factors used to determine whether to recommend that the President declare a major disaster and has begun the process of developing a Notice of Proposed Rulemaking, which it anticipates publishing in 2020. Until FEMA implements a new methodology, FEMA will not have an accurate assessment of a jurisdiction's capabilities to respond to and recover from a disaster without federal assistance and runs the risk of recommending that the President award Public Assistance to jurisdictions that have the capability to respond and recover on their own.

6. GAO has reported that the risk for improper payments increases when billions of dollars are being spent quickly. For many years, GAO and the Inspector General community have identified internal control weaknesses in the federal government related to agencies receiving supplemental funds for disaster assistance. Have payment integrity provisions helped assure that all federal disaster recovery funds are being spent as efficiently and effectively as possible? Has implementation of those provisions had any effect on the pace of funds disbursement, either to accelerate or delay communities receiving disaster recovery funds?

We have not conducted the work necessary to fully answer this question. However, the payment integrity provisions in the disaster supplemental appropriation acts can serve as a critical transparency tool for controls over disaster funds. Nevertheless, implementation of these provisions has varied. In June 2019, we reported that, of six selected agencies, one agency did not submit required internal control plans to Congress for funds appropriated following the 2017 disasters. Of the five agencies that did submit the required plans, four were not timely and all lacked necessary information, such as how they met OMB guidance and federal internal control standards. These issues were caused, in part, because OMB lacked an effective strategy for helping agencies develop internal control plans for the needed oversight of these funds. Because OMB did not establish an effective strategy for timely communicating requirements for agency reporting in internal control plans, federal agencies lacked the information needed to meet the statutory deadline. As a result, Congress and others did not timely receive agency internal control plans. We recommended that the Director of OMB develop a strategy for ensuring that agencies communicate sufficient and timely internal control plans for effective oversight of disaster relief funds. OMB disagreed with this recommendation and stated that they do not believe timeliness and sufficiency of internal control plans present material issues that warranted OMB action. We continue to believe that future internal control plans could serve as a critical transparency tool for controls over disaster funds.

Regarding the pace of funds disbursement, we have not conducted the work necessary to answer this question. Nevertheless, our *Framework for Managing Fraud Risk in Federal Programs* acknowledges that managers' defined risk tolerance may depend on the circumstances of individual programs and other objectives beyond mitigation of fraud risks. For example, in the context of disaster assistance, managers may weigh the program's objective of expeditiously providing assistance against the objective of lowering the likelihood of fraud, because activities to lower the risk related to fraudulent applications, such as conducting inspections, may cause delays in service. Alternatively, managers may define their risk tolerance as "very low" with regard to providing certain disaster assistance in order to provide a high level of certainty that the assistance is actually going to those in need as opposed to fraudulent applicants. Accordingly, when developing an antifraud strategy, managers should consider benefits and costs of control activities, such as the benefit to the program of reducing the likelihood or impact of a fraud risk.

7. The National Flood Insurance Program (NFIP) and the Federal Crop Insurance Corporation are sources of federal fiscal exposure due, in part, to the vulnerability of insured property and crops to climate change. Federal flood and crop insurance programs were not designed to generate sufficient funds to fully cover all losses and expenses, which means the programs need budget authority from Congress to operate. GAO has described these programs as providing coverage where private markets for insurance do not exist, typically because the risk associated with the property or crops is too great to privately insure at a cost that buyers are willing to accept. Has GAO studied the current state of the market for private insurance to assess whether private insurers are able to compete with discounted NFIP and crop insurance rates, or to provide insurance products that may complement federal programs to bring more affordable insurance solutions to market?

Yes, we have conducted work on private insurance and the National Flood Insurance Program (NFIP). Specifically, in July 2016, we reported on barriers to the increased use of private flood insurance. Stakeholders we spoke with for that report—private flood insurance companies and organizations in the insurance and lending industries—told us that a primary barrier to private participation in the flood insurance market was the ability of the private sector to compete with the NFIP's discounted rates. Stakeholders said insurers needed to charge premium rates that reflect the full risk of potential flood losses, but with NFIP charging discounted rates that were not actuarially sound, private companies found it difficult to compete in the market. Other barriers cited in our report included an uncertain regulatory environment for private flood insurance and some recent (at that time) changes to NFIP by FEMA. Specifically, we found that a 2015 NFIP policy change could discourage consumers' use of private insurance. FEMA had stopped allowing policyholders to obtain a refund of their unused NFIP premium if they obtained a non-NFIP policy. Since we issued our report, in March 2018 FEMA reinstated the ability of policyholders to cancel their NFIP policy and be eligible for premium refunds, on a prorated basis, if they obtained a duplicate non-NFIP policy effective October 1, 2018.

With respect to crop insurance, we have not assessed the current state of the market for private crop insurance, but we plan to initiate work in the future that addresses climate change and agricultural issues, potentially including the crop insurance program. However, we have issued several reports addressing crop insurance more generally, and in our 2019 High Risk List, we identified the federal government's role as the insurer of property and crops as an area where government-wide action is needed to reduce federal fiscal exposure.

8. Has GAO analyzed trends in economic versus insured disaster loss and default rates for uninsured disaster survivors with federally-insured loans, and what have those studies found with regard to actions Congress can take to mitigate uninsured economic loss?

We have not conducted work analyzing trends in economic versus insured disaster loss and default rates for uninsured disaster survivors with federally-insured loans.

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Questions for the Record

Damon Burns
President & Chief Executive Officer
The Finance Authority of New Orleans

THE HONORABLE KATHY CASTOR

1. In your testimony, you recommended that Congress work to ensure a market for affordable insurance. In your experience, how are retrofits to homes currently accounted for in the National Flood Insurance Program? As FEMA works to adjust its flood insurance rating methods, what are the sorts of flood and storm mitigation measures that should be accounted for to reduce risk and insurance rates? How important is it to your strategic program for community resilience finance for federal insurance to discount insurance costs based on those resilience characteristics of homes for your borrowers?

The National Flood Insurance Program as currently structured does not adequately account for climate resilience retrofits. The majority of homes across America lack the proper protection against catastrophic climate events. Financial markets have not fully adjusted to the realities of climate change and the risks placed upon cities. Prior to Hurricane Katrina, The Finance Authority of New Orleans had an approximately $395 million balance sheet mostly composed of residential mortgage backed securities. Today that portfolio is valued at around $20 million as a direct result of homes and infrastructure not being resilient enough to withstand a major climate and financial disaster.

FANO's story is a cautionary tale of the wide-ranging effects climate events can have on a community. Moving forward, we must ensure that every home and the public infrastructure supporting those homes is protected from climate events. This can be accomplished by the Federal Government using its financial resources to create a market for climate disaster insurance tied to the existing mortgage market.

The tandem of a climate resilience mortgage and insurance product would provide upfront capital to allow the homeowner to invest in climate mitigation measures such as roof fortification, stormwater management systems, solar panels, permeable pavement, energy efficient equipment and other measures specific to certain geographies. Many communities do not have adequate resources to fix these problems on their own. Innovation is needed and it must begin with the public sector. FANO is actively recruiting private financial institutions and corporations to play a role in addressing our climate challenges but more support is needed from the Federal Government to make American cities first-class.

2. What do communities most need in terms of technical assistance to ensure that planning is inclusive and that investments drive resilient outcomes for everyone in the community?

Community education regarding the realities of climate change is a critical need on all levels of society. Municipalities, private companies and non-profit organizations must cooperate to fully understand the severity of this issue. In my estimation, the issue of climate change is not fully understood and accepted by all community stakeholders.

Congress should provide direct financial support for cities to lead the effort to educate America about the opportunities and risks of climate change. Community design sessions focused on green and smart infrastructure is an example of how cities can utilize technical assistance funding. All cities should be required to deliver a climate resilience plan built by their respective communities. This is also an opportunity for cities to collaborate by sharing knowledge and solutions with an eye toward innovation. America should have the most innovative cities in the world.

3. How can Congress help ensure that minority- and women-owned local businesses can take advantage of redevelopment and climate resilience investments, which would provide additional economic benefits to localities?

Congress should provide financial incentives and support to cities that actively invest in minority and women owned businesses focused on climate resilience. I recommend the following solutions:

1. Technical assistance funding for educating and training minority and women owned businesses to capture the opportunities provided by a city investing in climate resilience.
2. Federal tax credit program for minority and women owned small businesses that start climate resilience-based companies and/or projects.

3. Financial incentives for cities that prioritize operating and capital budget spending on minority and women owned businesses.
4. Below-market or tax-exempt funding for minority owned financial institutions to invest in climate resilience businesses and community development projects.
5. Funding for minority developers and homebuilders to encourage housing innovation in distressed communities.

THE HONORABLE GARRET GRAVES

1. Being from coastal Louisiana, you and I both know that people are always going to live by water. With that reality, it's necessary that communities have the tools they need to adapt to safely live by water.

a. How do you suggest we monetize certain gov. functions and infrastructure that will be necessary to build resilience?

Climate resilience based financial products are limited in today's market. Property Assessed Clean Energy ("PACE") financing is gaining momentum but less than half of U.S. states have passed legislation to activate this method of financing climate resilience. PACE financing allows a property owner to finance climate resilience and green measures on its annual property tax bill. The cost of resilience to the property owner is spread over a 20-year period and can be passed on to future property owners until all improvements are paid for.

PACE financing is becoming popular because it is otherwise difficult to fully finance climate resilience improvements with conventional bank financing. Commercial banks limit the amount of improvements that can be made and require a more aggressive payback term. Alternatively, PACE financing allows a property owner to use their tax bill as a financing tool. As a result, PACE lenders or investors have seniority over the mortgage lender for the underlying property. This has made commercial banks uncomfortable and led to many states rejecting PACE based financing for their cities.

Existing mortgage and insurance products do not allow a property owner to maximize climate mitigation. However, a combination of PACE financing with a climate resilience-based mortgage and insurance product would stimulate climate mitigation investing. The Federal Government should require states to allow PACE financing or develop alternative plans for financing climate resilience. It is unacceptable that states are exposing its citizens to danger by ignoring the realities of climate resilience. Every state should be held accountable for a solution to mitigate climate risks.

b. How do you see green infrastructure playing a role as we adapt for the changing climate?

Green infrastructure is the foundation of climate resilience investing for cities. Cities must lead the way by transforming our public spaces into climate resilience projects that protect and beautify our communities. Prioritizing and incentivizing investment in green infrastructure will fuel capital markets, increase innovation and give disadvantaged minority communities a chance to rebuild. A coordinated green infrastructure strategy for all levels of government is needed to make green infrastructure a reality.

2. For some communities, federal disaster insurance is not an option. The National Flood Insurance Program (NFIP) exists for those in a 100 year floodplain, where communities often see reoccurring floods. However, when disaster strikes areas where flood insurance is not required or when communities are devastated by exceptional disasters other than floods, the taxpayer steps in to help anyway. In these cases, homeowners receive payments from taxpayer-funded disaster assistance programs without ever having to pay premiums.

a. Given your financial and public service background, how can the federal government reconceptualize its approach to comprehensive disaster coverage to ensure that homeowners are able to afford the insurance coverage they need, without leaving the taxpayer on the hook again and again?

A missing link in the U.S. mortgage market is a connection to climate resilience. FHA has taken a step forward by creating an Energy Efficient Mortgage ("EEM") product that allows homeowners to upgrade their homes with green or climate resilient features. However, more support is needed to ensure a climate resilient housing stock in all cities. FHA's EEM provides the homeowner with some assistance but it is typically short of what is needed to completely mitigate climate risks.

A new form of comprehensive homeowner's disaster insurance should be considered to increase the amount of upfront funding and long-term protection available to homeowners. The U.S. government has the balance sheet to create a market for this type of insurance product. This new climate resilience insurance product can be delivered through the nation's housing finance agencies and green banks alongside their existing single-family mortgage programs. Housing finance agencies issue over $20 billion in mortgage revenue bonds annually with a minimal amount of those funds dedicated to making homes more climate resilient.

Creating a climate resilience product will incentivize housing finance agencies to form partnerships with insurance companies and commercial banks. The desired end result of this collaboration is a more climate resilient America and increased economic opportunity. Cities will be able to physically transform their housing stocks with a U.S. government supported climate insurance product.

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Questions for the Record

Chuck Wemple
Executive Director
Houston-Galveston Area Council

THE HONORABLE GARRET GRAVES

1. It is extremely important to begin the recovery process as quickly as possible after a disaster, and you know this well having recently suffered from Hurricane Harvey. In your opinion, what are the *top two roadblocks* that have kept your response to Harvey from being the most efficient and successful way to expedite disaster recovery at the lowest possible cost?

Many recovery activities are locally initiated immediately after the first stage of response; long term recovery committees are established, chambers of commerce reach out to returning businesses, schools coordinate openings with returning residents, and volunteers and advocacy groups begin working with homeowners to begin repairs and bring stability and hope. Local governments assess their emergency reserves and options for debris pick up and ensuring basic services are working and their communities are safe. The role of federal assistance in recovery should not be overlooked. It is a critical part of helping communities bounce back after a disaster and to successful recovery of local economies.

After working through several disasters over the past 15 years, there are two consistent phenomena that get in the way of rapid recovery. It is important to understand that I am referring to recovery and not the initial response immediately after a disaster. (1) The hope of quickly delivered federal funds coupled with caution that only certain things will be covered by the federal assistance. Help is on the way, but only for certain things, and the funding has a lot of requirements that don't necessarily line up with the most effective projects, and the rules are somewhat different each time so how do we proceed with recovery? Substantial time and effort is spent considering what do we fund locally and what is too large to fund locally or is a better fit for federal funds? With housing the effect is amplified due to extensive qualification and eligibility criteria that result in approximately 1 in 4 applicants receiving assistance. And when we add on the complexity of numerous federal agencies all offering individualized types of recovery funding, communities end up chasing possible aid and can encounter rerouting ("We can't fund that, that is a USACOE project") and become discouraged and fatigued while waiting for approvals. Which takes me to the second major roadblock. (2) The long delays in moving funds from the federal government to communities and citizens in need of help. It's a strange limbo or purgatory. An announcement comes that Congress has approved recovery funds and help is on the way. Then there is a wait for federal register announcements and guidance—which is an important and critical step to make sure funds are appropriately programmed and spent—but takes too long. Homes that could have been quick and efficient repairs deteriorate and become more costly teardown and replacement projects. And households remain fragile longer and have an effect on local economies and the social fabric of a community. It is often the case that communities wait more than a year after a disaster to receive the first disbursements of recovery aid. Housing and infrastructure damage advances during this time and becomes more costly to address and recovery is slower than it could be.

2. I appreciate your comment that economic resiliency and financial strength rarely get the attention and consideration it merits because it is often overshadowed by infrastructure and housing needs after natural disasters.

a. How can we do better up front with pre-disaster mitigation?

First launch a national campaign, an aspirational message, that we all have a role in preparing our communities, businesses and homes to withstand disasters and to strengthen our ability to bounce back after adversity. That individuals, community organizations, employers, cities, counties, states, and our federal government are all in this together to support and hold each other accountable. That we should not shy away from the need to understand our individual and community vulnerabilities and the risks they bring in a period of more active weather and more frequent storms. To raise awareness that mitigation is much less costly than recovery. And then to invest (individual, private sector, and government) in real projects and initiatives that have noticeable impact on improving our economies and communities. Tie federal aid to a demonstrated understanding of mitigation needs and actions. An example for communities could be fire-wise programs or the community rating system, comprehensive mitigation plans that also address economic resiliency, and financial literacy training for individuals. Its important to understand that mitigation is not just physical infrastructure but also includes local economies.

b. What are some examples of projects in your region that could be financed now to achieve best use federal funds and achieve cost savings?

I'll offer three very different projects that could have a high return on investment.

(1) Relocating a severe bend in a section of railroad that cuts through the heart of one of our small cities in a growing county. Locally referred to as the Dayton candy-cane due to its location and hook-like configuration, the rail and roadway configurations result in frequent and substantial delays in the movement of goods and people, hampers evacuation and emergency services and limits economic development and resiliency in one of our rural counties on the edge of urban growth. The County has worked with our regional council to develop an alliance with local governments, the private sector, and State and Federal funding agencies to reconfigure the rail and roadways, establish proper overpass options, and open up a portion of the County that has been cut off from economic development. This project will also create flood mitigation opportunities within the city, create a more vibrant downtown and commercial district, and increase the options of freight movement out of our major seaport, improving local and regional economic resilience. Despite commitments of local, private and government transportation funding, the project has a substantial funding gap that could be met with federal mitigation funds. The link is improved evacuation routes, better drainage, and a stronger economy. This project illustrates the new perspectives that need to be adopted as we look to increase economic resiliency by preparing or natural disasters while also looking to strengthen local economies and increase public safety. Traditional thinking tends to focus on very specific pieces of infrastructure like culverts, floodway improvements and shoreline protection which are important—but often don't have well-developed links to their impact on a community's economic resilience and accelerating economic development.

(2) Upgrades to the water supply system in one of our rural cities. Damaged by Hurricane Ike and further impacted by soil contraction during a recent historic drought, the city water system experienced decreases in water pressure in portions of its water supply system and portions of the community did not have adequate hydrant pressure to support fire fighting trucks. One of the affected areas included a business park and several businesses were prepared to leave the community because their enterprises could not be served in the event of fire. The city purchased a pumper-style fire truck (which transports its own water) to meet fire suppression needs and businesses remained in the community—but growth and resiliency are not at levels that could be achieved with a proper functioning system. It is important to note that the fire truck was purchased using a federally-funded recovery loan through the Economic Development Administration and administered by our regional council. Mitigation funds that are not tied back to specific disasters—but are designed to better prepare and strengthen communities against disasters would be a good fit for the water supply project. The community is working hard to serve the needs of its residents and businesses. Additional investment of federal funds would help cure a chronic problem and accelerate their ability to withstand future disasters.

(3) Relocation of a wastewater treatment plant in one of our coastal communities. One of our cities has completed the appropriate planning and land acquisition to

relocate its sewer facility from a highly vulnerable location along the coast of Galveston Bay. Local officials have worked diligently to secure local funding and work through federal recovery funding requirements. The project has been a priority for several years. An additional investment of mitigation funds (on top of recovery funds) would further strengthen the proposed new facility and increase the community's ability to maintain essential services and speed up the return of its residents after future storms. I provide this example as a situation where persistence in a local and federal partnership has paid off and a small additional investment could increase the return on investment.

c. Can you provide your thoughts about how communities can obtain a healthy tax base in order to have that economic resiliency and be better prepared for when disaster strikes?

Resist the temptation to grandfather structures from compliance with new flood elevation codes. Invest in code enforcement and assistance programs that result in durable housing. Consider tax incentives for homeowners and businesses that implement improvements that strengthen their ability to endure less damage and disruption from disasters (go above and beyond minimum requirements). Work with banks and financial institutions to leverage community reinvestment act funds to increase the fiscal literacy and financial security of their residents. Understand where their residents work (often outside the immediate community) and partner with other communities to ensure jobs and employers are stable and diverse (be aware of the adverse effects of being a bedroom community for an employer outside the community).

3. You make an important point that the solution is not as simple as increasing funding, that we can spend the money already available better and more efficiently. Where and how can we do that? Which federal agencies or programs have you encountered where this inefficiency is happening?

Consider designating an agency to coordinate various recovery and resiliency funding streams to reduce rerouting of funding requests ("can't fund that here, try another agency"). FEMA's ESF–14 function could be a framework worth revisiting. The Department of Commerce Economic Development Administration's funding integration effort in Region VI (bringing a full suite of funding partners out to regions to consider projects in a workshop setting) is an excellent example of reducing the silos of funding agencies and focusing on a more efficient approach to federal investment.

Agencies who are tasked to undertake massive amounts of recovery funding can become semiparalyzed with the intense scrutiny and responsibility of programming billions of dollars. This results in delays (see comment 1 above), frustration, reduced efficiency, and investment in eligible projects that maybe important but not necessarily the highest priorities of local communities. Increasing flexibility by focusing on projects and investments that make a community stronger (not just build back) and reducing restrictions on which agency can fund which projects would substantially increase efficiency and speed up the delivery of federal assistance to communities in need.

4. From your experience in emergency management, do you think the public adequately knows what resiliency means and what role they have in preventing it?

Terms like resiliency and mitigation are somewhat abstract and can be hard for the public to nail down—and as a result can mean very different things to different people and also sound like something someone else or an organization needs to do (like a corporation or government). Terms like prepared, durable, strong, and bounce-back are aspirational and can be easily tacked to individual and community goals and actions. "How can I help my neighborhood bounce back after a flood? How can I be better prepared if the factory shuts down and I don't get paid for a month? Voting for the bond will help prepare and protect my neighborhood." These simple shifts to less bureaucratic words can help.

a. Do community leaders?

The considerations regarding word choice and messaging mentioned above can become even more important when considered at the level of community leaders. Are we seeking to make our schools more resilient or is better prepared and safer the message/goal? Are we investing in more resilient roads, housing, and drainage or more durable roads and higher quality housing (via codes and ordinances)? Another consideration is that mitigation and resiliency projects can take longer than office terms and be less of a priority than immediate short-term needs expressed by the constituents of elected officials. Lastly, economic development traditionally focuses on large-prize ventures and can result in communities being overly reliant on a single employer or a single type of business. There is a natural appeal in attracting a large employer—say one that brings 500 jobs. But a local economy can better weather down turns and disruption with a diversity of 10 employers each providing 50 jobs. Conventional thinking tends to focus on the immediate short-term result and will require a shift in thinking that considers how economic development decisions affect resiliency.

b. What about leaders in small and rural communities? How do we educate them to be ready for extreme weather events?

Work with networks and national organizations that support small and rural counties like the National Association of Counties and the National League of Cities. Leverage the strong relationship with federal agencies that have high levels of knowledge about small and rural communities and a proven track record in improving communities—specifically USDA and the Economic Development Administration. Allow flexibility in existing funding streams to help build capacity since local government staff and community leaders in these areas often wear many hats and can benefit from targeted technical assistance. The earlier comments regarding clarity of language and word choices in messaging are universal and apply here, too.

c. What role should the federal and local governments have to further education of risk and resiliency in their communities?

A critically important role to show that we are all in this together and need to work together to be better prepared and adapt to future threats. See earlier responses regarding launching a "We are stronger together" aspirational campaign, items 2.a., 2.c., and 4.a.

Questions for the Record

Marion Mollegen McFadden

Senior Vice President, Public Policy
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THE HONORABLE KATHY CASTOR

1. You testified regarding the extensive disaster resilience and recovery work that your organization has conducted in all 50 states, and currently in Puerto Rico, the United States Virgin Islands, Florida, Georgia, Texas, Louisiana, North Carolina, Washington, D.C., New York, Michigan, Illinois, and California. With this experience and your 15 years of experience in disaster recovery with HUD, what are the top three greatest barriers to the efficient and resilient recovery from disasters that communities face?

Thank you again for the opportunity to share my thoughts with the Committee. The first major barrier is the lack of codification of CDBG–DR, which leads to confusion on the ground and perpetuates a lack of interagency communication.

Second, investments in communities are being made in an inequitable manner, because the Federal Government does not prioritize serving low- and moderate-income communities. Data show that homeowners receive disproportionate assistance compared to renters, and white applicants receive a disproportionate share of available benefits. Damage assessments frequently underestimate the need of low-income survivors, leading to fewer resources in communities where they are needed most.

Finally, the lack of a federal framework and incentives for resilient infrastructure are a real barrier. Communities need guidance on how to implement best practices. State and local capacity challenges with regard to planning and implementation are real and only the Federal Government is in the position to share the best available data in a way that can be absorbed locally.

2. What can Congress do to reduce risk and costs before disasters?

Congress can task Federal agencies with working together to provide the best available risk data to communities in a manner that is easily useable at the address or block level. Congress can promote adoption of modern codes and ensure that all federally-funded infrastructure projects—not just disaster recovery projects—are built to resilience standards. Finally Congress can increase annual Housing and Urban Development Community Development Block Grant (CDBG) program funding and mandate that a portion of the funds be used to identify and address local risks, so that all communities have access to resources to prepare for the changing climate.

3. How can we help accelerate the pace of disaster recovery and reduce disaster recovery costs?

CDBG–DR has become an indispensable tool in the federal government's disaster recovery arsenal, but exists only when created by appropriation. Congress must fund a recovery package after each disaster on a one-off basis. Grantees need to then study the rules, make policy choices, and build up their own disaster programs. This leads to a delay of as much as nine to 12 months from when the disaster hits to when CDBG–DR funds start reaching communities on the ground. First, Congress can permanently authorize the CDBG–DR Program to enable a formal rule-making process. Grantees and stakeholders will have an opportunity to weigh in through comments and advisory panels to ensure that the new regulations reflect best practices and lessons learned from past disasters.

I. Direct HUD to promulgate formal regulations with a public comment period. Provide deadlines for when this process needs to begin and end. Both H.R. 3702 and S. 2301 direct HUD to issue a proposed rule within 6 months of enactment, provide a 90-day period for public comment and publish the final rule within one year of enactment.

II. Codify the LMI benefit standard.
The CDBG–DR Program is based on the annual CDBG Program, in which no less than 70 percent of funds must benefit LMI persons. Lawmakers should include this 70 percent LMI benefit standard in CDBG–DR authorizing legislation. Both H.R. 3702 and S. 2301 include the codification of the LMI benefit. To complement this, legislation should also direct HUD to step up enforcement of the LMI benefit and fair housing laws and regulations.

III. Authorize more disaster recovery staff and direct hire authority.
Authorize and appropriate additional funding for more permanent full-time employees in the Office of Disaster Recovery and Special Initiatives (DRSI) at HUD. Additionally, Congress should authorize DRSI with direct hire authority so that the office can rapidly hire and reprogram staff as needed following a major disaster, as is done at FEMA. The current staffing level at DRSI is woefully insufficient. New disasters add pressure quickly, while current hiring processes are slow. Introduced legislation does not authorize direct hire authority.

IV. Direct agencies administering disaster recovery funds to families (HUD, FEMA, SBA) to develop a common application for disaster assistance applicants.
Direct agencies to create a common application through which applicants can input their personal information, see the full menu of federal disaster assistance options, and learn their eligibility for different programs. A common application will place burden of determining eligibility with the agencies providing the disaster assistance. The common application will save time for survivors and agencies by centralizing data on applicant eligibility and unmet needs and reduce opportunities for duplication of benefits. On the backend, the common application will also standardize and streamline data collection in a single portal for data on damage assessment, unmet needs and aid disbursement. This data can then be shared with grantees, so they have full information and prevent duplication of benefits. The portal should include information from FEMA's disaster relief programs, the National Flood Insurance Program, SBA's Disaster Loan Program, and CDBG–DR.

V. Authorize a CDBG–DR Reserve Fund.
Authorize a CDBG–DR reserve fund that can be used for immediate post-disaster costs and capacity building in advance of a congressional appropriation of CDBG–DR. If a grantee knows that it is going to get a larger grant, then it should begin its post-disaster planning process and building the capacity to administer recovery funds as soon as possible. Both H.R. 3702 and S. 2301 authorize this fund to be used for providing technical assistance and capacity building immediately following a disaster. The Senate bill also authorizes HUD to allocate funds to grantees for disaster homelessness assistance within 14 days of a disaster declaration, provided that such funds serve families experiencing or at risk of homelessness that are not receiving rental assistance from FEMA. Lawmakers should strongly consider broadening authorized uses for the Reserve Fund and specifically authorize pre-disaster planning and community engagement grants and rapid response bridge grants for small businesses.

VI. Institutionalize mitigation and resilience as part of CDBG–DR.

Congress should include a set aside for mitigation in future CDBG–DR appropriations and direct HUD to incorporate mitigation activities into the CDBG–DR Program's core set of eligible uses, like housing, infrastructure and economic development. According to a study by the National Institute of Building Science, each dollar the federal government invests in mitigation saves $6 in future disaster recovery costs.[1] H.R. 3702 and S. 2301 include this provision by requiring HUD to allocate no less than 45 percent of the amount allocated to a grantee for unmet needs.

4. How can we help low-income communities and communities of color be more resilient to extreme weather and other effects of climate change?

While it is often said that natural disasters do not discriminate, we have seen repeatedly that low-income people are hit hardest; are the least prepared; and are the least able to recover on their own. This is generally not a surprise, given that socially vulnerable groups are more likely to live in areas prone to experience disasters and suffer their after-effects. These homes tend to be less stable in the high winds of hurricanes and tornados, posing additional risk to individuals and families who cannot afford to upgrade or pay for housing in a different location that may be safer. And with small businesses, we have found that getting them to re-open their doors may require technical assistance, grants, and access to highly-risk-tolerant capital.

The Federal Government should provide equitable infrastructure and mitigation investments in all neighborhoods and require building to modern codes so that projects and homes can withstand more damage. Disaster recovery planning must take into account fair housing planning, specifically looking language barriers and the needs of people with disabilities, including seniors and people without access to private transportation. Communities must be more cognizant of flood plains and building in vulnerable areas, which is most likely to occur under stronger leadership from the Congress and Federal agencies.

5. You've recommended that we develop a framework for rating infrastructure resilience that prioritizes community needs to ensure that investments made in infrastructure systems are both efficient and equitable? Are there metrics for social equity that we should be looking at that can help us get beyond property values so that our investments focus on protecting people?

Federal agencies should develop a framework for rating and evaluating resilient infrastructure design. The framework should serve as a best practice guide to help cities design, build and operate infrastructure to ensure its long-term viability and to deliver other environmental, economic, and social benefits, where feasible. Once a rating system is designed, federal agencies should then condition the receipt of federal funds on projects meeting a required resilience rating.

The rating framework would help agencies ensure that federally funded projects are evaluated consistently and that federal investments are yielding resilient infrastructure systems. This consistency could, over the long term, create more efficiency and reduce operating and insurance costs, as well as mitigate risk. And predictability would remove a current obstacle to private investment. While no such framework exists, we would be happy to explore how our free Opportunity360 tool[2] might be useful for identifying vulnerable communities.

Ms. CASTOR. This is our last hearing of the year. I am really proud of what the committee has done, but the big work lies ahead. We need everyone's help and support. If you have additional recommendations for the committee, please pass them along.

I want to thank our professional staff and all of the members for all their terrific work this year.

And to everyone, have a lovely holiday season.

Thank you. We are adjourned.

[Whereupon, at 4:13 p.m., the committee was adjourned.]

[1] https://www.nibs.org/page/mitigationsaves

[2] https://www.enterprisecommunity.org/opportunity360