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November 22, 2019

The Honorable Kathy Castor
Chair
House Select Committee on the Climate Crisis
H2-359 Ford Building
Washington, DC 20515

The Honorable Garrett Graves
Ranking Member
House Select Committee on the Climate Crisis
H2-359 Ford Building
Washington, DC 20515

Re: Select Committee on the Climate Crisis Request for Information

Chair Castor and Ranking Member Graves:

Thank you for the opportunity to submit comments to the Select Committee on the Climate Crisis on the policies Congress should adopt in order to adapt to the impacts of climate change.

The Pew Charitable Trusts' flood-prepared communities initiative aims to reduce the impact of flood-related disasters on the U.S. taxpayer, communities, and the environment. To achieve this, Pew applies a rigorous, analytical approach to improving public policy in ways that prioritize investments in flood-ready infrastructure, mitigate the impact of disasters, modernize the National Flood Insurance Program, and promote nature-based solutions.

Flooding is our nation's most common and costly natural disaster, affecting all 50 states in areas both inland and coastal. According to the National Oceanic and Atmospheric Administration flood and coastal storm events since 2000 have caused over \$845 billion in overall losses when accounting for impacts such as business interruptions, physical damage to buildings, agricultural losses, and damage to public infrastructure.¹

Understanding the need to address these unsustainable damages and growing risks, the Pew Charitable Trusts submits the following comments on questions posed by the Committee related to **Resilience and Adaptation**:

What adjustments to federal disaster policies should Congress consider to reduce the risks and costs of extreme weather and other effects of climate change that can no longer be avoided?

Support Increased Investment in Mitigation

¹ National Oceanic and Atmospheric Administration, *Billion-Dollar Weather and Climate Disasters: Summary Stats*, National Centers for Environmental Information, (accessed October 1, 2019), <https://www.ncdc.noaa.gov/billions/summary-stats>.

It is essential that the federal government alter the long-existing bias that favors post-disaster assistance over federal support for adaptation and pre-disaster mitigation. We urge the Committee to prioritize pre-disaster mitigation investments and strategies to better protect communities, their residents, and infrastructure from natural disasters. Research has shown that, on average, mitigation saves society \$6 for each \$1 invested,² and that these investments make communities more resilient.

Mitigation needs vary from community to community, but a lack of funding for these activities is near universal. Increased investment in mitigation through existing programs is important, but creating new funding opportunities for states and localities to invest in mitigation before disaster strikes will be critical in breaking the costly cycle of flood, damage, and repair.

One proposal to create new funding opportunities has been introduced by Congressmen Charlie Crist (FL-13) and Roger Williams (TX-25) as H.R. 1610, the State Flood Mitigation Revolving Loan Fund Act of 2019, along with a Senate companion bill. This proposal would establish a program to provide low-interest loans and selected grants to help communities, businesses, schools, and families prepare for floods and sea level rise. Adopting concepts like this can provide flexible and sustainable funding mechanisms for states and localities to better plan for and address growing risk to increasingly extreme weather. Pew also believes that the revolving loan fund structure will allow for participating states, territories, and tribal governments to develop and sustain their own institutional expertise and capacity around adaptation and flood-preparedness. This proposal was included in House Financial Services Chairwoman Maxine Waters' National Flood Insurance Program Reauthorization Act of 2019, H.R. 3167.

Second, in order to realize the benefits of mitigation throughout the transportation system, Pew recommends that this committee look at ways to incorporate risk reduction and resilience into the Federal Highway Administration's (FHWA) Emergency Relief (ER) Program. Currently, ER grant recipients are constrained in their ability to account for future risk in repair efforts, and establishing a pre-disaster mitigation program within FHWA could help minimize disaster costs to the Department of Transportation (DOT) by allowing states and communities to improve the resiliency of vulnerable and repeatedly damaged assets. This could be done by allocating a percentage of future Emergency Relief dollars towards such a program, correlating the dollars available with the magnitude and frequency of disasters.

Reexamine Methods Used for Benefit-Cost Analysis

The Select Committee should consider how cost saving measures, such as disaster mitigation, is accounted for in cost and benefit analyses. As Select Committee members know well, projects that will help communities adapt to changing weather patterns and better prepare for extreme events often entail substantial expenses. While it is completely reasonable for any level of government to evaluate both the costs and the benefits of such projects or actions, we have concerns that some of our current analytical

² National Institute of Building Sciences, "Natural Hazard Mitigation Saves: 2017 Interim Report," December 2017, http://www.wbdg.org/files/pdfs/MS2_2017Interim%20Report.pdf.

approaches may disregard or discount future benefits of adaptation and pre-disaster mitigation. In addition, some accounting methods may also exclude consideration of important co-benefits, such as improvements in water quality or wildlife habitat, that can be achieved by preparedness actions.

A case in point may be the Congressional Budget Office's (CBO) cost calculations for pre-disaster mitigation investments. While fortifying a given structure against flood damage may yield benefits for many decades—essentially until a home or business is removed and replaced—the CBO cost models look at costs in a shorter time-frame with discount rates that can dramatically “shrink” the value of avoiding future disaster damages.

In addition, while the responsibility and costs of responding to and recovering from disasters is spread across dozens of federal agencies and multiple programs, the benefit cost analyses employed frequently limit the frame of reference to the specific program involved. Again, in the case of CBO analysis of possible legislative changes to the National Flood Insurance Program, the perspective is specifically limited to the federal flood insurance fund. So, while buyouts of a neighborhood, elevation of utilities, or other sorts of pre-disaster investment may, not only prevent future flood damage, but also lower the costs of services, lessen non-point water pollution, allow for energy savings, or otherwise yield important societal benefits, those benefits will accrue outside of the program being evaluated and fall out of the calculus.

Pew is concerned that, to the extent that economic models used by CBO, the Federal Emergency Management Agency (FEMA), the Corps of Engineers, or other federal agencies do not incorporate the overall societal benefit of pre-disaster mitigation investments into their analyses, disaster preparedness will continue to be underfunded. We are hopeful, however, that the Select Committee, which has the ability to look at extreme weather challenges in a frame that is broader than the traditional jurisdictional purview of a single Congressional Committee, will examine this challenge and make recommendations to improve our current analytical tools.

Prioritize Natural and Non-Structural Solutions

Nature-based solutions can provide flexible options for reducing flooding and unlike conventional gray infrastructure that typically deteriorates with age and can aggravate flooding, green infrastructure, such as wetlands and parks, can provide self-sustaining flood defenses that support ecosystem restoration while providing recreational space for communities.

While each community is unique in its flood mitigation needs, natural solutions have proven particularly effective in reducing these risks. Wetlands, salt marshes, vegetated dunes, and unconstrained rivers can retain floodwaters and decrease the effects of flooding on those in adjacent communities. Along the coast, these natural areas act as the first line of defense in reducing the effects of storm surge.

In a recent study, which analyzed the effectiveness of various methods of flood mitigation along the United States Gulf of Mexico, natural options—including restoration of wetlands and oyster reefs—were found to be economically viable for preventing storm damage in coastal communities. In fact,

these natural solutions were often more cost-effective than man-made, or “gray,” options.³ Other research shows that nature-based solutions can be used to mitigate threats posed by severe weather, and that these approaches can be both economical and long-lasting:

- Coastal ecosystems mitigate an estimated \$23 billion each year in storm damages along the Atlantic and Gulf coastlines alone.⁴
- According to researchers at the Gund Institute for Environment, wetlands and floodplains protected Middlebury, Vermont from as much as \$1.8 million in flood damages during Tropical Storm Irene in 2011 and potentially save the town as much as \$450,000 each year through flood mitigation.⁵
- Resources for the Future found that by not developing roughly 9,000 acres of land but instead preserving the area as state and local parks, the Meramec Greenway in St. Louis County, Missouri benefits from \$7.7 million in avoided flood damages on average each year.⁶
- The U.S. Army Corps of Engineers itself found that a project within the Charles River watershed in Massachusetts that protected over 8,000 acres of wetlands over a number of years prevented an estimated \$12 million in flood damages at a cost of only \$8 million. The Corps analysis didn’t include the recreational and wildlife benefits generated through this conservation – the land is also used for hunting, fishing, hiking, and canoeing.⁷

One way the federal government has helped communities create or restore natural open space within floodplains is through FEMA’s Pre-Disaster Mitigation (PDM) Program, soon to be known as the Building Resilient Infrastructure in Communities (BRIC) Program. Through the PDM Program, FEMA has invested in the acquisition of disaster-prone or damaged properties with the goal of moving people out of harm’s way while creating permanent open space in the process. In areas where structural solutions might be limited or simply not cost effective, or for areas that have been rebuilt multiple times following disasters, the most effective form of mitigation to ensure lasting protections may be the purchase of properties from willing sellers.

³ Reguero, Borja G., et al, *Comparing the cost effectiveness of nature-based and coastal adaptation: A case study from the Gulf Coast of the United States*, 2018, PLOS ONE 13(4): e0192132,

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0192132>

⁴ Thorne, Karen, et al., *U.S. Pacific Coastal Wetland Resilience and Vulnerability to Sea-Level Rise*, Science Advances, Vol 4, no 2 (Feb 2018) <http://advances.sciencemag.org/content/4/2/eaao3270.full>.

⁵ Watson, Keri B., et al., *Quantifying Flood Mitigation Services: The Economic Value of Otter Creek Wetlands and Floodplains to Middlebury, VT*, Ecological Economics Vol 130 (October 2016)

<https://www.sciencedirect.com/science/article/pii/S092180091630595X>.

⁶ Kousky, Carolyn and Margaret Walls, *Floodplain Conservation as a Flood Mitigation Strategy*, Resources for the Future, July 2013, <http://www.rff.org/files/sharepoint/WorkImages/Download/RFF-DP-13-22-REV.pdf>.

⁷U.S. Army Corps of Engineers, “Charles River Natural Valley Storage Area,” draft master plan presentation, April 2017, http://www.nae.usace.army.mil/Portals/74/docs/Civil%20Works/Charles%20River/Charles_River_Natural_Valley_Storage_Area_Presentation.pdf.

New Jersey has used its own funds and taken advantage of federal dollars through PDM and the Department of Housing and Urban Development’s Community Development Block Grant for Disaster Recovery to create open space within floodplains. Following repeated flooding events, the New Jersey Blue Acres program was authorized to acquire lands within flood-prone areas across the state. Since its inception decades ago and an infusion of funds in 2007, the state has protected over half of a million acres of open space to take advantage of the floodplain services that these ecosystems can provide.⁸

We encourage the Select Committee to work with Committees with jurisdiction over programs that involve federal project expenditures – either direct expenditures, such as the Army Corps of Engineers, or indirect, such as the Environmental Protection Agency’s Clean Water and Drinking Water Revolving Funds – to find specific ways for federal agencies to incorporate the value of nature-based flood solutions into their decision-making and project prioritization frameworks.

Lower the Financial Burden of Disasters with State Engagement

Americans have long been generous in helping communities hit by natural disasters, and the Federal government has multiple authorities for providing disaster response and recovery. Programs housed in various agencies include, for example, direct grants to repair and rebuild public facilities, loans to businesses, families, and local governments, unemployment assistance, special tax treatment of losses, and financial aid to affected individuals. A significant portion of this assistance flows through the Disaster Relief Fund (DRF) created under the Stafford Act to function as a complement to state and local resources when disasters overwhelm local and state capacities.

Pew recognizes the importance of this federal assistance, but we share concerns that have been raised about the increasing number of disaster declaration requests and growing reliance on the federal government. We see this as problematic, not only in terms of federal spending, but also in creating a strong disincentive for local and state leadership on adaptation.⁹ We are hopeful that the Select Committee will examine both aspects of this problem and promote a vigorous discussion about options that will lower disaster costs overall and enable and encourage leadership from the states in addressing future disaster risks.

On this point, we would request that the Select Committee look carefully at the proposals for a so-called “disaster deductible” that FEMA released in 2016 and 2017.

As Select Committee members know, current federal policy is for FEMA to make recommendations to the President regarding federal disaster declarations using a Per Capita Indicator (PCI). Where damage assessments exceed the PCI, FEMA frequently recommends a declaration, and the receiving state then

⁸ State of New Jersey, Department of Environmental Protection, Green Acres Program website, last updated, July 23, 2019, <https://www.nj.gov/dep/greenacres/>

⁹ A 2015 review of state budgeting for disaster concludes that natural disasters and emergencies have not had a significant effect on state finances, “...because states relied on the federal government to provide most of the funding for recovery.” See Government Accountability Office, “Budgeting for Disasters: Approaches to Budgeting for Disasters in Selected States,” March 2015, <https://www.gao.gov/assets/670/669277.pdf>.

becomes eligible for significant levels of federal funding, often including Public Assistance funding to handle debris management and pay for rebuilding of damaged public buildings and infrastructure.

The PCI was first set in 1986 at a level of \$1 per person, and it remained at that level through 1999. In 2000, an adjustment was made, and now the PCI is adjusted for inflation annually. In recent years, the Government Accountability Office has argued that the PCI remains “artificially low”¹⁰ and would be higher if it had been adjusted for inflation since 1986. Their detailed analysis of 144 declarations made within the 2004-2011 timeframe indicated that nearly half (49%) of the declared disasters would not have met an adjusted PCI threshold. GAO also argues that FEMA fails to “comprehensively assess a jurisdiction’s capability to respond to and recover from a disaster on its own.”¹¹

In response to these criticisms, as well as the escalating number of federally declared disasters, FEMA in early 2016 issued an advanced notice of proposed rulemaking on “Establishing a Deductible for FEMA’s Public Assistance Program.”¹² This initial notice offered a general outline of a proposal that would evaluate each state’s risk profile and resource commitment to pre-disaster mitigation and allow for scaling the level of federal assistance based on the state’s own level of investment in disaster preparedness. The initial concept notice was followed by a more detailed supplement describing how the concept could be implemented.¹³

The 2017 supplemental notice generated significant response, both in support and opposition, and made it clear that a deductible approach would likely require a reasonable phase-in period and improved record-keeping, both for states and the federal government. To date, there has been no formal follow-up to the notice, but Pew remains convinced that the concept is a sound one that could result in cost-effective disaster adaptation efforts generated by states and localities and overall lowered costs associated with extreme weather events. We urge the Select Committee to delve deeper into the possible use of the deductible as a powerful adaptation tool. We would also note that information being developed by FEMA pursuant to a directive in the Disaster Recovery Reform Act passed last year may prove helpful to the Select Committee. Section 1239 of that law called on FEMA to review the factors to be considered for major disaster declarations and the associated disaster costs and, more specifically, to initiate a related rulemaking by next Fall.

¹⁰ Government Accountability Office, “Improved Criteria Needed to Assess a Jurisdiction’s Capability to Respond and Recover on Its Own,” September 2012, <http://www.gao.gov/assets/650/648162.pdf>.

¹¹ Ibid.

¹² Federal Emergency Management Agency, RIN 1660-AA84, “Establishing a Deductible for FEMA’s Public Assistance Program,” Advance notice of proposed rulemaking, Federal Register, Vol. 81, No. 12, January 20, 2016, <https://www.federalregister.gov/documents/2016/01/20/2016-00997/establishing-a-deductible-for-femas-public-assistance-program>.

¹³ Federal Emergency Management Agency, RIN 1660-AA84, “Establishing a Deductible for FEMA’s Public Assistance Program,” Supplemental advance notice of proposed rulemaking, Federal Register, Vol. 82, No. 8, January 12, 2017, <https://www.federalregister.gov/documents/2017/01/12/2017-00467/establishing-a-deductible-for-femas-public-assistance-program>.

How can Congress better identify and reduce climate risks for front-line communities, including ensuring that low and moderate-income populations and communities that suffer from racial discrimination can effectively grapple with climate change?

Accelerate Collection and Dissemination of Sound Scientific Data

In some respects, the Select Committee’s phrasing of this question points to an important part of the answer. Climate risks can and will be reduced to the extent that they are identified and understood, and a large part of the challenge in coming years involves access to sound scientific data about risk, including the changing dimensions of that risk, for decisionmakers and the general public.

We encourage the Select Committee to seek recommendations from technical and scientific experts in the fields of hydrology, meteorology, and climate science and to consider the need for additional resources to support and improve platforms and models that can forecast and/or characterize sea level rise, flooding probabilities, and other vulnerabilities associated with extreme weather and changing precipitation patterns.

For example, the Select Committee may wish to focus attention on the capacity and current funding for the National Streamflow Network, which now consists of less than 10,000 stream gages across the entire landscape of the United States. That network, which leverages funding from states and localities with a modest level of federal appropriations, is vitally important to flood and drought forecasting, flood insurance mapping, infrastructure planning, allocating water resources, and other aspects of adaptation. As climate risks grow, the expansion and enhancement of that network would likely yield large benefits, not only to federal agencies but also to communities and businesses that are investing in infrastructure and other assets that could be damaged or destroyed by tomorrow’s extreme weather events.

Another example of fundamental data that the Select Committee may wish to consider and make recommendations on involves publication and possible update schedules for the National Oceanic and Atmospheric Administration (NOAA) data on precipitation frequency. NOAA data on rainfall values are central to regulations and investments in infrastructure across the nation, yet in many areas, new roads, stormwater infrastructure, homes, businesses, and other assets are being planned and designed based on precipitation data that is decades old. Accelerated action to modernize portions of the nation’s water atlas and publication of schedules for updates could help to assure that new investments are designed using the best available data on historical rainfall and incorporating appropriate margins of safety to account for newly recognized trends.

Pew also recommends that the Select Committee consider the need for maintaining and leveraging other data sets, such as high-resolution elevation data, and for improving and deploying widely the tools that can help local communities better understand their unique climate risks. Identification tools that can support effective “no regrets” adaptation approaches might include, for example, the NOAA Coastal Flood Exposure Mapper, the National Weather Service’s National Water Model, and the Department of Transportation’s Vulnerability Assessment Scoring Tool. Demonstrations, trainings, and funding of pilot projects for use of such tools – including projects that combine or overlay the geographies at risk with

the locations of vulnerable populations—would help communities, states, and federal agencies make sound prioritization decisions about how to use limited adaptation resources. On the important question of options for reducing risks to low- and moderate-income populations and communities that have endured discrimination, the use of such tools may be particularly important.

Improve Flood Maps and the Use of Flood Maps

In recent years, multiple news stories and reports have suggested or stated outright that “inaccurate” FEMA flood maps are central to the nation’s flooding problems. Some have argued that the maps are inherently faulty because they do not incorporate projections of future sea level rise. Overall, the implication is that “accurate” Flood Insurance Rate Maps (FIRMs) can be used as forecasts of where flooding will occur.

While Pew fully supports making improvements in the FIRMs, including completing FIRMs for the entire nation, we caution against the notion that the maps used to govern yearly insurance ratings should be relied upon for making critical decisions about adaptation and future development. We believe these maps can be enhanced, but they must also be supplemented by additional data and information that will help communities make risk-informed decisions about growth and development.

The FIRMs are statistical constructs based on historical data and conditions current at the time that map-making is undertaken. Though frequently interpreted as such, the areas shown as a “Special Flood Hazard Area” or SFHA on the maps are not predictions or forecasts. Rather, these are the land areas that would be inundated by a flood with an estimated one percent chance of occurring in any given year—an imaginary event corresponding to certain statistical parameters. The lines on the map – which in some cases indicate flood heights as well as expanse – are used to determine which structures must carry flood insurance, but they do not indicate a line at which all major flooding would be expected to stop.

Unfortunately, the general public as well as policymakers frequently use the FIRM maps and map lines in ways that inhibit sensible adaptation and preparedness. For example, homeowners and businesses opt out of buying flood insurance simply because they are located outside of the SFHA line, and there is currently no federal requirement for insurance coverage beyond this line: this despite the fact that flooding can occur at virtually any location and the SFHA lines move not only with increased climate-driven precipitation and sea-level rise, but also with nearby land use alterations and growth.

In addition, NFIP regulations, last revised in the late 1970s, call for flood protections on new construction only within the limits of an identified SFHA. New construction in areas that abut the SFHA line, though intended to last for decades, can be undertaken without any consideration of future flood risk. Federal disaster policy as well gives what we would consider undue deference to these lines—putting insurance maintenance requirements or rebuilding conditions on flood-damaged properties only within the SFHA in some cases.

Our recommendation to the Select Committee is to examine carefully the wide range of instances in which the lines on a FIRM are being used inappropriately. The FIRM map lines may well be useful for annual insurance rate calculations or short-term decisions, but they should not be treated as immutable forecasts to guide long-term investments.

At the same time, the Select Committee might also determine how to supplement the narrow vision that the current flood maps and the so-called 100-year floodplain offer. One obvious first step may be to assure that every new FIRM produced incorporates data on the extent of the 0.2-percent-annual-chance flood alongside of the 1-percent-annual-chance flood.

We also urge the Select Committee to speak with floodplain managers, city planners, administrators, and elected officials from various-sized localities to assess how best to help them understand not just the currently predicted risks, but also the factors that are likely to affect those risks over time. Localized, actionable data and scenario-building tools could help local policymakers set resource priorities and make critical land-use decisions to protect people and property from the damages of future extreme weather events. Only with an understanding of risk and the changing nature of risk will local decisionmakers be able to develop and implement ongoing, iterative programs to prepare for climate-related impacts.

Set New Requirements for Flood-Risk Disclosure

Another federal policy change that would complement improved flood-risk mapping and widespread use of climate-forecast scenario tools involves flood-related real estate disclosures.

As many flood experts have noted, an understanding of flood risk is fundamental to preparedness and protection, but individuals frequently underestimate their own risk of flooding, the extent of the damage that flooding can cause, or both. Many do not realize that for those living in the one-percent-annual-chance or 100-year floodplain, the chances of a flood occurring during the lifetime of a 30-year mortgage are roughly one in four, far greater than for fire. Others mistakenly believe that if they reside outside of an SFHA, their chances of experiencing a flood fall to zero.

This lack of awareness or understanding threatens devastating consequences for families that experience flooding, continues to contribute to the increasing cost of federal disaster aid, and provides an unrecognized incentive for continued building in at-risk areas, including those areas which are likely to see greater flooding risks in the future.

Given the scale of federal expenditures on flood disaster recovery, we see a strong federal interest in improved real estate disclosure for property buyers and renters. In our view, sellers and lessors should, at a minimum, be compelled to share the information they know about past flood damages and claims. Some states, including California and Texas, have recently improved their state real estate disclosure laws, but Congress itself could help consumers become flood-savvy with a federal disclosure requirement. Polling conducted for Pew's flood-prepared communities initiative, in fact, shows that

three quarters of respondents support a single, national standard to ensure that potential homebuyers are aware if a property has flooded repeatedly and if that property is required to carry flood insurance.

What standards and codes should Congress consider for the built environment to ensure federally-supported buildings and infrastructure are built to withstand the current and projected effects of climate change?

Rely on the most recent consensus-based codes for hazard resistant design and construction

While there is no one-size-fits-all formula for reducing the risks posed by extreme weather and climate change to all aspects of the built environment, there are steps the federal government could take that would ensure federal investments are made in ways that better account for future risks, effectively steward taxpayer dollars, and reduce the impact of flooding on communities and infrastructure. We see three priorities in this area:

1. Supporting research on effective hazard protections through the work of federal agencies and departments, such as the National Institute of Standards and Technology (NIST) and FEMA's Mitigation Assessment Team and its Building Science Branch;
2. Encouraging states and localities, particularly those receiving federal financial assistance, to adopt and consistently enforce the most recent consensus-based codes and standards related to hazard protection; and
3. Assuring that all projects undertaken with federal financial support are planned, designed, and constructed not only to meet up-to-date codes and standards but also to withstand future extreme weather events and stresses.

We offer these recommendations because numerous studies have shown the value of modern building codes in minimizing damages associated with a range of natural disasters, including seismic hazards, high winds, severe winter storms, and floods.

For example, the National Institute of Building Science's Hazard Mitigation Council in 2017 completed a review of federally-funded mitigation projects and, as part of that study, looked specifically at modern building codes. That study concluded that exceedance of certain basic code requirements might net the nation overall as much as \$4 in avoided damages for every \$1 invested. In some locales, that return on investment would be much higher.

Another study, from the University of Pennsylvania's Wharton School, examined the impact of building code updates in Florida. Focusing on a period from 2001 to 2010 during which Florida experienced seven land-falling hurricanes, the researchers found that homes built in accord with a newer standard suffered far less damage than homes built prior to implementation of the new code. Factoring in claims and damage data, they determined that newer homes had roughly 72 percent less damage than homes built prior to standard adoption. The researchers also analyzed the incremental costs associated with the new code and its more stringent wind protection requirements, and again they found a savings.

Those findings are similar to a previous study that looked at the value of adding “freeboard”—or additional elevation—over expected flood levels – for newly constructed homes. “Evaluation of the National Flood Insurance Program’s Building Standards,” prepared by the American Institutes for Research as part of the 2001-2006 Evaluation of the NFIP, concluded that the benefit of adding freeboard or installing a more flood-resistant foundation can be great, and that the cost of doing so for a residential building at the time of construction is modest.

As expert panels, such as the International Code Council and the American Society of Civil Engineers (ASCE), convene and consider damage reports as well as newly identified best practices and technological innovations in hazard reduction, their updated codes become available and recommended for adoption by local communities across the country. By keeping pace with important updates to these codes, such as the ASCE’s 24-14 “Flood Resistant Design and Construction” standard, localities can better protect residents, businesses, and first responders, and make their communities more resilient to climate impacts.

In addition to supporting the federal research programs that provide the knowledge base for improvements in hazard protection and encouraging widespread adoption of updated codes and standards, Congress should also assure that federally-backed projects adhere to these standards and aim to protect people and assets from future risks. The Select Committee could aid that effort by pressing for a speedy update to the approaches currently used for assessing flood risks associated with federally-funded projects, an update that would require the consideration of future risks in any building or rebuilding efforts supported with federal funding.

Since issuance of Executive Order 11988 in 1977, federal agencies such as DOT and HUD have been directed to avoid investing in flood-prone areas, where possible, or alternatively, to abide by basic flood mitigation practices as a way to reduce “exposure to potential flood losses by deterring unnecessary siting of activities in high hazard floodplain locations.” That policy and the individual agency regulations that have been adopted to implement 11988 have, over the years, lessened the flood losses that might have otherwise occurred. It has not, however, kept pace with increasing flooding problems and escalating costs.

Its greatest shortcoming, in our view and the view of many experts, has been its reliance upon an outdated definition of what constitutes a flood-prone area. By relying solely on FEMA insurance maps and the lines derived from data on past storms and flooding events, this policy has too often missed the mark in protecting people and assets from the next disaster.

That is why Pew and others, including many fiscal conservatives, were so supportive of changes made to the 1977 policy in 2015. The update called the Federal Flood Risk Management Standard (FFRMS) was embodied in Executive Order 13690 and directed the agencies to use sound science to incorporate a consideration of future flood risks into their decision-making. This update recognized that calculation of the so-called 100-year floodplain is not a prediction of future risk. It recognized that much of the nation’s flooding occurs in areas beyond the identified Special Flood Hazard Areas, and that flood

heights frequently rise above determined base flood elevations. It recognized that flood risks change, not only with changes in climate but also with changes in land use and demographics.

Shortly after this important, forward-looking standard was repealed in 2017, the current Administration spoke of revisiting it and issuing a revised policy. Unfortunately, that has not yet happened, and across the country there is considerable federally-funded building and rebuilding that is occurring without full consideration of future risks.

Our recommendation to the Select Committee is to re-engage on this important policy debate and assure that the federal government acts quickly to adopt an updated, climate-ready flood standard.

Specifically, we recommend that the Select Committee look to language included in P.L. 115-232, the John S. McCain National Defense Authorization Act for Fiscal Year 2019.¹⁴ This law requires the Department of Defense to amend its construction design criteria “to anticipate changing environmental conditions during the design life of existing or planned new facilities and infrastructure.” It also calls for construction projects to be undertaken with mitigation plans that look beyond the lines of the FEMA flood maps: Rather than rely solely on the one-percent-annual-chance floodplain, those plans must assume an additional two to three feet in flood height. In other words, to account for uncertainty in future conditions, the military will use a safety factor to protect facilities from future damages. Pew believes it would behoove the whole of government to adopt a similar approach, and we urge the Select Committee to consider a similar recommendation.

Additional Comments

Reform the National Flood Insurance Program (NFIP)

The NFIP, now over half a century in age, has long been an essential component of our nation’s management of flood risk. However, the program is in dire need of reform. We understand that Congress and the Select Committee must consider the consequences of changes to a program that serves roughly five million policyholders and has helped so many flood-weary communities begin recovery across the country.

This is particularly important in the context of a changing climate. The New York University Furman Center has estimated that over 15 million Americans live in the 100-year floodplains spread across coastal and inland states.¹⁵ And the population living in these risky areas has grown slightly faster than those living outside of them, according to an analysis undertaken by Governing magazine.¹⁶ With this

¹⁴ Public Law 115-232, August 13, 2018, John S. McCain National Defense Authorization Act for Fiscal Year 2019, <https://www.congress.gov/115/plaws/publ232/PLAW-115publ232.pdf>.

¹⁵ NYU Furman Center, “Report: More than 30 Million People Live in U.S. Floodplains,” The Stoop, December 18, 2017, <https://furmancenter.org/thestoop/entry/new-data-from-the-nyu-furman-center-finds-that-more-than-30-million-people>.

¹⁶ Maciag, Mike, “Analysis of the U.S. With Most Floodplain Population Growth,” Governing, August 2018, <https://www.governing.com/gov-data/census/flood-plains-zone-local-population-growth-data.html>.

population growth in risky areas and an expanding flood footprint¹⁷ Congress must reduce the risk to the federal government – and the policyholders served by NFIP – resulting from continued investment in these areas.

As Congress looks to reform this program it is important to consider the history of the NFIP. When the NFIP was started, its proponents were wary of flood insurance providing an indirect subsidy for development in risky areas.¹⁸ The program’s drafters were cognizant of the fact that land use decisions and building practices affect flood risk and that those decisions are made, not at the federal level, but by individual communities. They saw federal flood insurance as a means of leveraging improved floodplain management by local governments to reduce overall risk.¹⁹

At the time, it was assumed that the need for subsidies would diminish over time as local floodplain management improved and as older structures were leveled by storms or rebuilt entirely. As we have seen over the intervening years, these assumptions unfortunately proved incorrect and have resulted in costly expenditures to the federal government, continued financial exposure to taxpayers, and more communities exposed to the threats of pervasive flooding.

In order to reform the program to address climate risks, we offer the following suggestions:

First, Pew recommends beginning a triage of the program’s financial ailments by moving more vigorously to improve the floodplain management aspects of the program in part by reducing the growth of repeatedly flooded properties and directing more robust funding and resources to mitigation of risk, including relocating homes from flood hazard areas.

Second, it is important to limit NFIP premium discounts for newly constructed properties. As former FEMA Administrator Craig Fugate mentioned in testimony before this Select Committee on November 20th, “if the private sector will not insure the risk of new construction in flood prone areas why should the taxpayer?” It is critical that this program not do a disservice to communities by providing subsidized insurance to new construction located in flood hazard areas. Further, FEMA should continue to look for ways to increase the transparency of rates by ensuring that all NFIP policyholders, particularly those receiving artificially low rates, are aware of the full actuarial risk rate for their policy.

¹⁷ AECOM, prepared for the Federal Emergency Management Agency, “The Impact of Climate Change and Population Growth on the National Flood Insurance Program through 2100,” June 2013, <https://perma.cc/5RVD-A4VQ>.

¹⁸ See e.g., U.S. Task Force on Federal Flood Control Policy, “A Unified National Program for Managing Flood Losses,” House Document No. 465, 89th Congress, second session, (August 10, 1966) <https://www.loc.gov/law/find/hearings/floods/floods89-465.pdf>.

¹⁹ Ibid. See also, Federal Emergency Management Agency, “A Chronology of Major Events Affecting the National Flood Insurance Program,” (October 2002) prepared by The American Institutes for Research, The Pacific Institute for Research and Evaluation, and Deloitte & Touche LLP, https://www.dhs.gov/xlibrary/assets/privacy/privacy_pia_mip_apnd_h.pdf ; Michel-Kerjan, Erwann O., 2010 *Catastrophe Economics: The National Flood Insurance Program* Journal of Economic Perspectives, 24 (4): 165-86, http://create.usc.edu/sites/default/files/publications/catastropheconomics-thenationalfloodinsuranceprogram_0.pdf.

Finally, as mentioned earlier in this submission, the federal government should set real estate disclosure requirements to give homebuyers and renters an understanding of the potential risks they are assuming by purchasing or renting a property.

Conclusion

We commend the Select Committee for its initiative and believe that understanding the impacts of a changing climate is an important policy exercise that could shape how the U.S. government views risk and how taxpayer dollars are invested.

We look forward to continuing this conversation and hope you will reach out to Velma Smith, senior officer with Pew's government relations, vsmith@pewtrusts.org, or to me with any questions at llightbody@pewtrusts.org.

Sincerely,



Laura Lightbody
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