



**National Advisory Council**  
**DRAFT Report to the FEMA Administrator**  
*November 2019*



**FEMA**

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## NATIONAL ADVISORY COUNCIL ROLES AND AUTHORITIES

Following Hurricane Katrina in 2005, Congress required the Secretary of Homeland Security to establish the Federal Emergency Management Agency (FEMA) National Advisory Council (NAC) to advise the FEMA Administrator on all aspects of emergency management. The NAC ensures input from and coordination with state,<sup>1</sup> local, and tribal governments, nongovernmental organizations, and the private sector on the development and revision of FEMA's plans and strategies, the administration of and assessment of FEMA's grant programs, and the development and evaluation of risk assessment methodologies.

The NAC continues to meet this responsibility by including senior response and recovery officials as members from jurisdictions impacted by a range of disasters such as Hurricanes Sandy, Harvey, Irma, and Michael, and the California wildfires. These officials share direct feedback with the Administrator on how FEMA can improve its programs and operations such as highlighting specific shortcomings of the Public Assistance Program and implementing Building Resilient Infrastructure and Communities (BRIC) provisions of the Disaster Recovery Reform Act (DRRA) of 2018.

## EXECUTIVE SUMMARY

This report outlines key challenges facing FEMA and the emergency management community around the specific charges former Administrator Long asked the NAC to research in December 2018.

## INTRODUCTION

Letter from NAC Chair to the FEMA Administrator summarizing work and key concerns.

## RECOMMENDATION PRIORITY AND SUMMARY

This is a placeholder for recommendation priority, which the NAC will decide during the November 2019 meeting.

### *Disclaimer*

These recommendations and this report are the views of the NAC alone and do not necessarily represent the views of the FEMA.

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<sup>1</sup> Section 101 of Title 6, United States Code, defines State as "any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and any possession of the United States."

## Financial Preparedness Recommendations

### **CURRENT STATE: PERSONAL FINANCIAL PREPAREDNESS IS A DIFFICULT GOAL TO REACH**

Liquid asset poverty complicates the recovery of individuals and communities in post disaster environments. This is an area where education, incentives, and a culture shift in emergency preparedness can truly benefit our communities. Per FEMA's 2018-2022 Strategic Plan "... we must offer advice for scalable solutions that range from low- to no-cost options up to optimal levels of family preparedness."<sup>2</sup> Being unprepared for disaster can also lead to long term devastating impacts on an individual's financial situation.

Results from FEMA's Individual and Community Preparedness Division's 2018 National Household Survey According indicate that most respondents said they would not have enough money to cover a \$500 emergency expense. Everyone who incurs disaster expenses, though not everyone may qualify for FEMA assistance. Generally, survivors do not realize that the assistance is not and was never intended to make people "whole." However, a number of other financial tools are available, including savings and insurance.

FEMA has a key role in promoting all-hazard insurance. This includes helping individuals and businesses understand the amount of coverage needed to adequately insure for risk, which can contribute to personal financial preparedness. Adequate insurance is one way to become more "whole" after a disaster.

However, affording that level of insurance may be unattainable for many Americans. Additionally, research demonstrates that people of low socioeconomic status are more vulnerable during and after disasters. They are more likely to suffer severe consequences during impact, from property damage to homelessness, to physical and financial impacts. The challenge is that people living in poverty lack financial resources to save, cannot afford flood insurance, and are more likely to live in high-risk flood zones. There is difficult work ahead to improve income equality, enhance social safety nets, and strive to close the insurance gap by reducing the insurance cost burden.

### **DESIRED STATE: DISASTER SURVIVORS CAN BETTER SUPPORT THEIR OWN RECOVERY**

FEMA aims to collaborate with public and private sector stakeholders to encourage increased personal financial preparedness across the Nation."<sup>3</sup> As stated in the FEMA Strategic Plan, the goal is to:

1. Increase the percentage of people with savings set aside for an emergency.
2. Increase the percentage of people who have taken preparedness actions.

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<sup>2</sup> FEMA Strategic Plan 2018-2022, page 17.

<sup>3</sup> Ibid.

3. Assist individuals and businesses with understanding the amount of insurance coverage needed to be prepared.
4. Expand the number of properties covered by flood insurance.

## **CONSEQUENCES OF PROBLEM: INADEQUATE FINANCIAL RESOURCES UNDERMINE OVERALL PREPAREDNESS AND RESILIENCE**

When an individual does not have savings to replace the value of their home and/or belongings and does not own property or contents insurance, there is no mechanism in place to fill that gap when a disaster strikes. While the Disaster Relief Fund may support survivors in the immediate aftermath of a presidentially-declared disaster, this federal support only serves as a temporary safety net for immediate needs and does not provide for complete financial recovery. Financial preparedness, including having an insurance policy on personal and public properties, is critical to helping rebuild a home, replace belongings, and restore order to a family and community.<sup>4</sup>

Additionally, property risks are a global challenge. Much of the protection gap is due to uninsured global natural catastrophe risk, which has been rising steadily over the past 40 years. Swiss Re's sigma report shows that total economic losses from natural disasters have averaged around USD 180 billion annually in the last decade, with 70% (USD 127 billion, or USD 1.3 trillion in total over the 10 years) of that uninsured. Earthquakes, floods, and windstorms are the main threats, particularly in areas of high population and property value concentrations.<sup>5</sup> Uninsured losses impact the future of communities, with some areas unable to recover from the disaster.

In the US, FEMA's disaster relief program, specifically the Individuals and Households Program (IHP), is designed to coordinate assistance provided to individuals and households recovering from a declared disaster or emergency impacts. According to FEMA's 2017 Individual Households Program Data, a total of 4.7 million individuals applied for assistance in response to the 2017 hurricane season, including Hurricanes Harvey, Irma, and Maria. Of these, only about 35 percent received assistance, both for housing and other needs assistance. The average amount paid for housing assistance was about \$4,300. The average amount paid for other needs assistance was around \$1,300. It's clear that Disaster Relief Fund assistance provided was small when compared to the maximum IHP grant, which was around \$33,000 per household.<sup>6</sup> The statistics provided further underscore the importance of individuals and families preparing financially in the event of an unexpected disaster.

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<sup>4</sup> FEMA Strategic Plan 2018-2022, page 15.

<sup>5</sup> Swiss Re, sigma, no 5, 2015, page 1, accessed October 24, 2019, [https://www.riskandinsurance.com/wp-content/uploads/2015/10/Swiss-Re\\_Underinsurance-of-property-risks.pdf](https://www.riskandinsurance.com/wp-content/uploads/2015/10/Swiss-Re_Underinsurance-of-property-risks.pdf)

<sup>6</sup> FOOTNOTE



## POTENTIAL SOLUTIONS

### Focus on Public Education

**Recommendation 2019a-01:** In general, the FEMA Administrator should improve on the integration of financial preparedness into appropriate areas of their public education messaging. Financial preparedness public education should work to integrate the use of graphics for message retention as well as incorporating additional simple and direct messaging such as the FEMA “Scary Simple” campaign. Additionally, it will be beneficial to employ the work of Dr. Ann Gordan, with Chapman University, who has researched the following four criteria for motivating change where preparedness is concerned:

1. Perceived Susceptibility – this *can* happen to *me*
2. Perceived Severity – this is serious
3. Self-efficacy – I can actually do something to help myself
4. Response efficacy – the recommended action would make a difference

### Anticipated Impact

If FEMA is able to reach its goal of 16% of surveyed respondents reporting financial preparedness by 2022 and an increase of 4% each year after, it is expected that community members will have achieved a higher rate of disaster resilience.

### Cost, Time, and Other Implementation Considerations

FEMA should incorporate cultural and economic sensitivity when messaging preparedness and recovery related financial literacy, ensuring a focus on positive messaging to people so they can realize and embrace their achievements.

In developing public education, the FEMA Administrator should encourage the use of focus groups. These groups should include people representing different parts of the economic spectrum, individuals with disabilities, access and functional needs, and those who represent the Whole Community to ensure messaging efforts are effective. Focus groups should be held in English as well as other common languages. FEMA might employ the targeted approach that has been successful for National Flood Insurance Program (NFIP) marketing to help build financial preparedness. Once FEMA has made strides to mainstream the conversation of financial preparedness and by integrating its messaging, FEMA's strategic goal may be more achievable.

### Partner with Industry Groups to Maximize Impact

**Recommendation 2019a-02:** The Administrator should find ways for FEMA to partner with other organizations to work toward the implementation of goals associated with building a more financially prepared community. FEMA should work with:

- The Federal Deposit Insurance Corporation to continue/expand training on disaster planning as covered in its Money Smart program.

- MODULE 14: Disasters–Financial Preparation and Recovery, September 2018
- America Saves, especially with their Split to Save Program, and other organizations with strong financial institution education programs to help people achieve financial preparedness.
- Financial institutions that will provide financial incentives for people working toward financial preparedness, such as lower interest rates on debt, higher interest rates on savings, and microloans for financially underprepared or low-income groups.
- The American Red Cross and other providers of disaster preparedness information to integrate financial preparedness broadly into educational programs as done with FEMA's Youth Advisory Council's Pedro: Disaster Preparedness Activity Book.
- Project Hope to evaluate current disaster programs and growth areas for expansion.
- Government agencies that serve vulnerable populations to ensure that individuals and families are not removed from services for increasing their financial wellness through saving. Criteria and general recommendations should be suggested to states and considered as part of the resiliency measure for mitigating disasters with state preparedness. Government agencies that may be consulted are the Department of Health and Human Services, Center for Medicaid Services and other support system services to make the programs more accessible during disasters and prevent ineligibility for aid programs such as Medicaid or others, simply because they have a modest disaster savings. For example, in some states people with more than \$2,000 in countable resources are not eligible.
  - By establishing clear guidance on what types of savings and/or investment accounts will not prevent access to aid programs, FEMA will ensure that their financial education programs will do no harm and instead truly benefit community members in the most need.<sup>7</sup> Some states have implemented a provision ABLE (Achieving a Better Life Experience) accounts, which can be used by eligible people with disabilities who wish to save for issues related to disability. Because disasters often have a large economic effect on people with disabilities this fund could be used to support the person after a disaster. This is not considered a countable resource according to Medicaid.
- The Internal Revenue Service (IRS) to encourage those receiving a tax refund to save it, or a portion thereof, in an effort to establish financial preparedness. This could potentially also include a tax advantaged savings account for low income people to save funds for unanticipated events. Additionally, FEMA should work with the IRS to provide tax advantaged savings for individuals so that they are not penalized for savings.
- NeighborWorks, United Way, and other critical partners with a network of local nonprofits to help build financial well-being, disaster preparedness, and to increase the resources and capability available to promote financial preparedness.
- The National Association of Counties, the National League of Cities, and others in the Big Seven to:

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<sup>7</sup> <https://www.medicaidplanningassistance.org/community-spouse-resource-allowance/#countable>

- Encourage adopting commercial insurance incentives
- Discourage maximum limits for local rainy-day funds
- Model efforts to incentivize local reserve fund programs, after the Expedited Debris Removal Pilot Program.

### **Anticipated Impact**

Partnering with industry groups will allow FEMA to leverage its limited resources to achieve a broader impact. These partnerships will be mutually beneficial as well, allowing the various groups to achieve more by working with FEMA than they would have on their own.

### **Cost, Time, and Other Implementation Considerations**

This recommendation is relatively low cost in dollars but relatively high in staff time. Building and maintaining partnerships with a range of organizations will require additional resources beyond those that are already working on financial preparedness. This is important because building a partnership and not maintaining it yields no benefit in the long run.

### **Early Registration for DSNAP Benefits**

**Recommendation 2019a-03:** The Administrator should work with the US Department of Agriculture (USDA) to encourage Disaster Supplemental Nutrition Assistance Program (DSNAP) pre-registration during all public outreach opportunities, including local health fairs, local government service counters, and neighborhood meetings, to help alleviate long lines during recoveries from major disasters. Additionally, coordination between FEMA and the USDA public education campaigns to ensure this item is included in social media posts will ensure a wider audience is reached.

### **Anticipated Impact**

If people are able to receive this assistance in a timely fashion, they can use existing limited funds for other important considerations in a disaster such as gas, water, housing, etc.

### **Cost, Time, and Other Implementation Considerations**

Since USDA administers DSNAP, the coordination with FEMA will be mutually beneficial and has the potential to directly impact an individual and family's available financial resources during a disaster. Wrapping in public education and social media outreach on DSNAP will be a low-cost change with likely positive impacts.

## **Closing the Insurance Gap Recommendations**

### **CURRENT STATE: MANY AMERICANS DO NOT HAVE ADEQUATE INSURANCE COVERAGE FOR THE RISKS THEY FACE**

According to the Insurance Information Institute, 41% of renters in the Nation have contents insurance compared to 92% of homeowners. People are renting at increasing rates. In 2017, according to the Pew Research Center, 43.3% of households were renters, the greatest number in 50 years.

The increasing number of renters and the low rates of renters with comprehensive coverage, including for natural disasters, means that overall vulnerability is increasing. This coupled with the fact that Americans have very low protection and preparedness levels, even in disaster prone areas, exacerbates the insurance gap. In addition, lower income families may struggle to make ends meet and the affordability of insurance programs may be just out of reach.

According to a report by the U.S. Department of Housing and Urban Development, in the case of Hurricane Katrina, households with flood insurance were 37 percent more likely to have rebuilt following the storm.

If you live in a 100-year floodplain, there's more than a 1 in 4 chance that you'll be flooded during a 30-year mortgage. During a 30-year mortgage, you are 27 times more likely to experience a flood than have a fire. Moreover, no home is safe from the devastation of a flood; 25% of flood losses occur to homes outside of a high-flood-risk area (category 1 or above).<sup>8</sup>

### **DESIRED STATE: INDIVIDUALS AND GOVERNMENTS MANAGE THEIR RISK APPROPRIATELY WITH INSURANCE**

In the desired state, the breadth of insurance coverage, along with its affordability and availability in the marketplace would reflect the risk landscape and people's willingness to pay, as well as the type of residence they reside in, whether renting, owning, or sub-letting a property. The overall goal is to increase the number of individuals, to include renters, who carry insurance. Broadening the insurance policy market to include an all-hazards type policy specific for renters and the perils they may face is ideal.

In addition, look towards a new model of insurance to further increase the number of households who carry flood/all-hazards insurance. Parametric insurance would allow for a timelier response for specific types of disasters. The reduced complexity of administering such assistance after a qualifying disaster would result in assistance reaching impacted individuals faster and at a much lower cost than the current IHP administered by FEMA and their tribal, state, and territorial partners.

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<sup>8</sup> National Association of Insurance Commissioners (NAIC), "Flood Insurance Myths Vs. Realities," NAIC, Accessed October 31, 2019, <https://content.naic.org/consumer/flood-insurance.htm>

## CONSEQUENCES OF PROBLEM: UNINSURED LOSSES LEAVE GOVERNMENTS PAYING MORE

The increasing number of renters and the low rates of renters with insurance means that overall vulnerability is increasing. An insurance gap creates direct economic consequences to individuals, communities, and businesses. These impacts invariably cascade to the state, local, tribal, and territorial (SLTT) governments and on to the federal government.

Lower income people are more likely to be renters, so we want to make sure they are included. Encouraging people to protect their family would decrease the need for FEMA IHP and other post-disaster assistance as their needs would instead be covered by an insurance policy.

According to Lloyd's research, a 1% increase in insurance penetration, reduces the taxpayer burden of unfunded losses by 22%, so the net result of a growing insurance gap, affected wide classes of coverage, is more unfunded losses affecting the Nation's economy.<sup>9</sup>

## POTENTIAL SOLUTIONS

### Conduct Public Outreach Campaigns

**Recommendation 2019a-04:** FEMA should conduct widespread public outreach campaigns (e.g. media, mailings), to include targeting renters and landlords within areas recently impacted by disasters (e.g. flood, fire, and other hazards) to highlight the following information:

- Affordability and benefits of flood renter's insurance and other coverage lines,
- Availability to all individuals regardless of designated floodplains,
- Disclosure of "hidden hazards" in real estate, rental properties, and communities.

FEMA should also partner with landlord associations and conduct outreach (e.g. brochures, messaging, and sample language) to encourage landlords to make renters insurance a requirement within their lease agreements.

### Anticipated Impact

The anticipated impact of this educational drive will increase demand for adequate insurance coverage and create competition among private insurers, who can begin leveraging FEMA's outreach as a "market making" function. Additionally, coalitions can be formed that advance sales and market awareness channels between insurers, agents, brokers, and real estate networks, which can have the function of reducing rates, fighting adverse risk selection, and improving coverage conditions for renters.

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<sup>9</sup> Colin Edwards, "Global Underinsurance Report," The Society of Lloyd's. (August 2012): 37-38, accessed October 31, 2019, <https://www.lloyds.com/news-and-risk-insight/risk-reports/library/understanding-risk/global-underinsurance-report>



Encouraging landlords to require proof of flood insurance upon the signing of the lease, regardless of whether the structure is in a designated floodplain, will increase the number of renters who carry policies.

### **Cost, Time, and Other Implementation Considerations**

The principle cost and time considerations for this recommendation relate to planning, media, and partner outreach, as well as structuring FEMA's role as a catalyst.

### **Increase Offerings of Parametric Insurance**

**Recommendation 2019a-05:** The Administrator should convene cross-sector industry partners to develop parametric insurance for individuals.

Parametric insurance pays out immediately when a certain threshold, such as water depth or wind speed, is reached; thus, expediting funding and reducing overall administrative costs.

#### **Anticipated Impact**

Parametric Insurance is an insurance model concept to be further explored and implemented. Often, especially with large-scale disaster, even in situations where individuals are fully insured, the lengthy time to process a claim – often taking many months or years – means that the recovery and reconstruction process at the household level is delayed. This in turn leads to disaster displacement, which, when added to the low levels of protection against hazards, like floods, fires, windstorms, and others, yields abandoned properties and economic ruin.

Parametric insurance is also designed to release funds immediately and in an increasingly technologically advanced way, such that the insured or insured location (e.g. a geo-referenced residential building, community, or property) have access to funds upon triggering a predetermined risk threshold.<sup>10</sup> This can be wind speed, flood levels, barometric pressure, or others. Overall, the administrative costs would be much lower than in current FEMA recovery programs.

In addition, having the ability for communities to purchase an overarching parametric policy to cover their citizens would again shift the burden of post-disaster assistance for the various types of disasters to the community and insurance industry instead of putting the onus mostly on federal and SLTT governments.

### **Cost, Time, and Other Implementation Considerations**

The principle time and cost implications of this recommendation will be for FEMA to serve as a convener of cross-sector industry stakeholders from the insurance industry, technology sector, as well

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<sup>10</sup> Dante Disparte, "Disaster Response: When Speed Matters Most, Friction Stands in the Way", Forbes, September 15, 2017, accessed October 31, 2019, <https://www.forbes.com/sites/dantedisparte/2017/09/15/disaster-response-when-speed-matters-most-friction-stands-in-the-way/#a61e1724e109>

as the disaster and risk mitigation field, to explore viable solutions for expanding the reach and remit of parametric programs. When added to the ubiquitous nature of smartphones and other levels of connectivity, the opportunity for expanding parametric insurance protection to individual households may merely be a matter of connecting the dots, for which FEMA is uniquely placed to lead this effort.

## Stress Test State Insurance Guaranty Funds

**Recommendation 2019a-06:** The Administrator should financially stress test state insurance guaranty funds to determine their financial readiness for large-scale disasters and insurance company solvency.

This type of study would underscore the scale of the protection gap and clarify our national “shock absorption,” while ideally changing political will to fund FEMA’s work more strategically, as opposed to the current ad hoc approach.

### Anticipated Impact

Laboring under a “superman” fallacy, many communities and households alike, do not prepare for unanticipated events. By commissioning a study that stress tests the level of financial liquidity or solvency available in U.S. states and communities, particularly in their insurance guaranty programs, FEMA can convey the financial vulnerability in many communities. This would also reinforce the case for household level and community level preparedness, since FEMA is not an emergency response 911 number, but rather, the last line of defense. Another benefit of this study would be to catalyze market interest from private insurers and others in the financial sector to leverage solutions such as parametric programs, catastrophe bonds, and other insurance-linked securities to help shore up financial readiness at the SLTT levels.

### Cost, Time, and Other Implementation Considerations

The principle cost and time requirements for this recommendation would be for FEMA to determine the scope of work for this study, serve as a sounding board and expert reference, and facilitate access to local partners to participate and disclose needed information. The final report or index would likely demonstrate a national financial shortfall that can then be used to highlight the funding gap and develop solutions to bridge it.

## Use Blockchain to Speed Payouts

**Recommendation 2019a-07:** The Administrator should create a pilot blockchain-based land/property registry with critical information needed to file an insurance or disaster assistance claim. The Administrator should also partner with the insurance industry to consider making the triggering event a federal disaster declaration or the buildup to an impending threat or hazard.

These steps would allow much more rapid liquidation of an insurance policy including a “disaster dividend,” or a “harm’s way” claim, which could be used to pay for evacuation related expenses.

### Anticipated Impact

Emerging technologies, including blockchain and others, have entered a wide array of beta tests in financial services, supply chain management, and disaster mitigation. Their principle attractiveness is their decentralized structure, which improves resilience and recovery efforts in a disaster because critical information is stored off-site and in a highly trusted, secure platform. In many disasters, such as Hurricanes Maria in Puerto Rico or Harvey in Texas, affected communities may lose the type of information needed to file a claim, such as policy documents, land ownership records, and personal identification, among others. By piloting a blockchain-based registry in this manner, FEMA can catalyze cross-sector engagement and develop technology-enabled use cases that can improve the speed of disaster responses and insurance claim payments, without sacrificing accuracy or increasing the risk of fraud. Furthermore, these types of activities, a veritable Disaster Mitigation Lab, can further enable other technology-powered solutions, such as geo-referencing properties or vulnerable communities, among others.

### Cost, Time, and Other Implementation Considerations

The principle costs and time implications of this recommendation would be for FEMA to convene, scope, and monitor a pilot project between key stakeholders, including technology firms, academic institutions, and SLTT-level leaders who might be very interested to supporting such developments.

### Reduce Self-Insurance for Public Infrastructure

**Recommendation 2019a-08:** The Administrator should convene industry partners to create more public infrastructure insurance offerings for SLTT governments to help reduce the rate of “self-insurance.”

### Anticipated Impact

While the term self-insurance suggests that communities have set aside restricted funds to cover the costs of a disaster and speed up recovery efforts, the hard reality is that self-insurance most often means no insurance at all, which passes the costs of unfunded disasters to the federal government. The anticipated impact of this recommendation, which links to the recommendation on conducting a stress test study, is to raise awareness across the country on the current state of financial readiness and on the needed solutions and partnerships to begin bridging the gap.

### Cost, Time, and Other Implementation Considerations

As with other recommendations, the principle cost and time drivers of this recommendation would be for FEMA to serve as a convener of respective stakeholders to increase awareness on the fallacy of self-insurance and to highlight opportunities to bridge the gap.

## **Improving Code Adoption and Compliance Recommendations**

### **CURRENT STATE: BUILDING CODES ARE STILL NOT WIDELY ADOPTED NATIONALLY**

The construction of new buildings and renovation of existing buildings is a life safety issue that is primarily the responsibility of SLTT governments. The goal is to encourage the adoption and enforcement of the most up-to-date building codes and to educate the public and policymakers as to the importance of following these best practices.

In the FEMA Strategic Plan: Objective 1.1, building codes are clearly highlighted, and specific provisions with DRRA deal with assistance on building code issues. There are barriers to code development, implementation, and to effective code enforcement. Misconceptions about the impact of building codes on housing affordability is an important issue.

Lastly, the current state also includes unfounded criticisms of codes from certain groups and some state code council decisions to delay or weaken their codes. Pushback from builders and manufacturers that benefit financially or otherwise from weaker building codes have stunted inclusion of some disaster-resistant provisions. Despite FEMA's positive efforts to strengthen consensus model building codes and standards over time, the Agency is ill-equipped to engage in a sustained way as building code adoption issues threaten the growth of resilience in communities across the U.S.

### **DESIRED STATE: APPROPRIATE BUILDING CODES ARE ADOPTED AND LOCAL GOVERNMENTS ARE ABLE TO ENSURE CODE COMPLIANCE**

Universal adoption and effective enforcement by SLTT governments of a regularly updated, disaster-ready, and resilient building code is the goal. This, in turn, will facilitate pre-disaster retrofitting and improvements of existing building stock as well as post-disaster reconstruction to the appropriate code. In a research study of wind losses in Florida researchers found a 72% reduction in damage to homes built to stronger building codes than those that were built under less wind-resistant codes.<sup>11</sup> The study also determined that for every \$1 spent on building code compliance, property damage was reduced between \$2 and \$8, in line with FEMA's Mitigation Saves 2.0 study.

U.S. building code adoption statistics tell a different story. Analysis during the third quarter of FY2019 indicates that of 23,143 U.S. cities and towns facing floods, high wind, hurricane, seismic, or tornado hazards, only 7,637 had adopted residential and commercial building codes with necessary minimum

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<sup>11</sup> Laura Kisisto and Arian Campo-Flores, "Homes Built to Stricter Standards Fared Better in Storm," Wall Street Journal, September 16, 2017, accessed October 31, 2019, <https://www.wsj.com/articles/one-early-lesson-from-irma-hurricane-building-codes-work-1505559600>

disaster-resistant provisions.<sup>12</sup> This means that 67% of evaluated U.S. communities facing one or more of the above-described hazards lack adoption and enforcement of the latest codes with the most up-to-date minimum criteria necessary to optimize resilience. Additionally, building and housing affordability should be defined on the cost and benefit basis of a full life cycle of ownership versus first cost of a building alone.

## CONSEQUENCES OF PROBLEM: COMMUNITIES FACE UNNECESSARILY LARGE ECONOMIC LOSSES

Often the disparity and loose application of building codes is made painfully clear in aerial photos of disaster areas, which often show newer buildings still standing and, in some cases unscathed, while other properties are completely destroyed, jeopardizing lives, livelihood, and economic recovery. A modern, future-proof building code can help stop this predictable accident from recurrence. However, the complexity and cost of retrofitting and modernizing existing building stock can potentially exacerbate affordable housing challenges. Nonetheless, studies continue to demonstrate that for every \$1 spent on mitigation, including building code requirements, \$4 or more in disaster damage is prevented. Therefore, a multi-stakeholder approach, involving real estate interests, construction and engineering, and property insurance, among others, will be required.

An example of how the more recent building codes yield more resilient communities include a revision adding a 1-foot freeboard increase in the 2015 IRC.<sup>13</sup> If this had been adopted before Hurricane Sandy, the majority of homes flooded would have avoided damages with 1' freeboard (ICC, 2013).<sup>14</sup> An estimated \$33-66 million losses were avoided in South Carolina and Utah due to 1' freeboard (FEMA, 2014).<sup>15</sup> Additionally, Larimer County, CO avoided 68% of losses (\$71M) due to 1' freeboard adoption in 2013 (FEMA, 2017)<sup>16</sup> and Weld County, CO avoided 148% of losses (\$73M) due to 1' freeboard adoption in 2013 (FEMA, 2017).<sup>17</sup>

## POTENTIAL SOLUTIONS

### Raise Awareness of the Consequences of Weak Codes

**Recommendation 2019a-09:** The Administrator should communicate the economic consequences of weak codes and poor code compliance to SLTT policymakers. The Administrator should also highlight in these communications that strong codes and effective enforcement are a health and life safety issue

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<sup>12</sup> Leslie Chapman-Henderson, "Research Finds Consumer Overconfidence Regarding Building Codes in Disaster-Exposed Communities," Road to Resilience, June 4, 2019, accessed October 31, 2019, <https://lesliechapmanhenderson.blog/category/florida-building-code/>

<sup>13</sup> 2015 International Residential Code § R322.2.1.1 (Int'l Code Council 2014).

<sup>14</sup> Int'l Residential Code - Bldg. Comm., Int'l Code Council, 2013 Proposed Changes to the International Residential Code – Building § RB188 – 13 (2013).

<sup>15</sup> FEMA, Losses Avoided as a Result of Adopting and Enforcing Hazard-Resistant Building Codes § 1.2 (2014).

<sup>16</sup> FEMA, Reducing Losses through Higher Regulatory Standards: 2013 Colorado Floods Case Study 6-22 (2015).

<sup>17</sup> Ibid at 6-23.



and are broadly supported by the public. In messaging on codes, the Administrator should also replace “enforcement” with “compliance” to minimize pushback and negative connotations that enforcement could bring.

### **Anticipated Impact**

The goal is to reduce the economic and social costs after a disaster and accelerate recovery by increasing awareness.

### **Cost, Time, and Other Implementation Considerations**

As with other recommendations in this section, FEMA can leverage a substantial national bully pulpit to raise awareness on code enforcement and the national risks to not having a harmonized, disaster-ready building code.

## **Create Strong External Partnerships to Communicate the Importance of Codes**

**Recommendation 2019a-10:** The Administrator should partner with the International Code Council, the Federal Alliance for Safe Homes (FLASH), and others to build and strengthen the code specific marketing campaigns such as “No Code, No Confidence.” Campaigns should, in part, be targeted to specific geographic areas after an incident to highlight code-related issues that could be improved, within that area, before the next disaster or emergency event.

FEMA should outreach to other associations such as National Association of Counties, National League of Cities, Association of State Floodplain Managers, the American Planning Association, banking and insurance associations, the International Coded Council, FLASH, and others to broaden the adoptions of codes and code compliance using economic data to support their efforts.

### **Anticipated Impact**

The goal of this recommendation is to increase awareness of applicable codes and willingness to advocate for strong codes to elected officials. A recent Federal Alliance for Safe Homes (FLASH) study demonstrated that most individuals believe their jurisdictions have good buildings codes. This recommendation can improve market demand for improved building codes and drive accountability to the SLTT levels as to why these types of standards are not in place.

### **Cost, Time, and Other Implementation Considerations**

As with other recommendations in this section, FEMA can leverage a substantial national bully pulpit to raise awareness on code enforcement and the national risks of not having a harmonized, disaster-ready building code.

FEMA has limited bandwidth but may be able to leverage partnerships by leaning heavily on Congressional and Intergovernmental Affairs within FEMA to focus on the 1-2 large meetings for major trade associations (e.g. NACo, NEMA, etc.) and use these partnerships to focus on these specific issues.

## Consider Requiring Codes and Code Compliance for FEMA Grant Programs

**Recommendation 2019a-11:** The Administrator should consider the phasing in of eligibility criteria for current and future grant programs, such as Pre-Disaster Mitigation (PDM)/BRIC, that includes the adoption of an up-to-date model building code (current or most recent previous edition) and evidence of effective enforcement capability.

The Administrator should advocate for adoption of strong codes (including fire, electrical, and plumbing, etc.) along with evidence of enforcement capability as a part of grant programs such as PDM/BRIC with priority scoring data. Smaller more rural jurisdictions could apply indicating funding would support the implementation of codes and code compliance.

### Anticipated Impact

Numerous studies have shown that building codes and their enforcement are an essential component of effective mitigation strategies. Buildings that are designed and maintained to the latest requirements for wind, seismic, fire, and flood conditions have withstood natural hazard events, thus reducing life loss, property loss, and community economic impact (direct and indirect). This recommendation will help make these structures more common.

### Cost, Time, and Other Implementation Considerations

As a phased-in process, combined with the awareness initiative of Recommendation 2019a-29, this will provide SLTT authorities with the time and resources to complete the process of adopting codes and establishing an enforcement process.

## Provide a Self-Assessment Tool to Highlight the Benefits of Codes

**Recommendation 2019a-12:** The Administrator should provide an intuitive, computerized, self-assessment loss estimation tool to SLTT elected officials to help them understand the vulnerability of their existing building stock to disasters, and to facilitate understanding of the positive benefits of improved codes and land use policies.

This tool would, for example, show the reason codes are valuable and common challenges jurisdictions face in code compliance. The tool should include an analytic component to evaluate and clearly communicate the economic and casualty impacts of various building code levels.

### Anticipated Impact

This recommendation would facilitate awareness for policymakers and the public of 1) anticipated consequences of disasters on the built environment, including losses of life and property, and 2) the economic benefits of building code adoption.



### **Cost, Time, and Other Implementation Considerations**

As with other recommendations in this section, FEMA can leverage a substantial national bully pulpit to raise awareness on code enforcement and the national risks to not having a harmonized, disaster-ready building code.

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## **Marginalized, Tribal, Rural, and Small Communities Recommendations**

### **CURRENT STATE: DEVELOPING CAPABILITY IN INDIAN COUNTRY IS HAMPERED DUE TO MINIMAL FUNDING OPPORTUNITIES**

The National Preparedness Goal is to achieve a secure and resilient Nation with the capabilities to address threats and hazards across the whole community. Grants through the National Preparedness System allow SLTT governments to identify risks and the capabilities needed to address them, address current gaps in capabilities, and validate those capabilities through exercises and real-world events. Out of the numerous preparedness grants available to agencies, tribes are limited to a select few that either have tribal set asides or are tribal specific.

Many of the grants available, such as Emergency Management Performance Grants (EMPG) and Homeland Security Grant Program, are automatic amounts awarded to states and Urban Areas Security Initiative regions calculated by population. Tribal grants, however, are competitive and make up a very small percentage of the overall grant profile amount. In 2019, \$2.4561 billion was allocated through the Preparedness Grant Program. Of that amount, only 0.4% or \$10 million was allocated directly to eligible tribes through a competitive Tribal Homeland Security Grant Program (THSGP). The other grants potentially available to Tribes are administered by states and do not pass through to the tribes. This lack of funding has led to significant gaps in the whole community capability to address a wide array of threats.

According to FEMA, 421 of the 573 federally recognized tribes are eligible to apply for the THSGP based on geographic locations in the eligibility criteria A. (iii). Unfortunately, there is very little known as to the actual capabilities within Indian Country. Eligibility criteria A. (ii) requires that an eligible tribe operates a law enforcement or emergency response agency with the capacity to respond to calls for law enforcement or emergency services. In conversations with tribes that reside in Public Law 83-280 states, many of the tribes do not have these types of agencies due to the jurisdictional authority. Therefore, it is likely that the true number of eligible tribes is much smaller than 421. Currently, there are approximately 50 tribes that apply for funding through the THSGP annually.

There is also very limited information on current capability levels in Indian Country. Some tribes have developed a robust emergency management and emergency response role within their tribes while others struggle due to lack of funding and legislative restrictions within their states.

### **DESIRED STATE: TRIBES RECEIVE ADDITIONAL CAPABILITY FUNDING WITH FEWER RESTRICTIONS**

THSGP provides more than the \$10 million for tribes to increase their capabilities within Indian Country. More than twice that amount is requested annually. Many limitations are placed on this competitive grant program and with 573 federally recognized tribes, the amount of money available does not go

very far. Many of these tribes are not eligible due to the requirements for the grant and there needs to be additional funding provided to increase capabilities.

## **CONSEQUENCES OF PROBLEM: TRIBAL NATIONS EXPERIENCE GREATER CHALLENGES BUILDING RESILIENT COMMUNITIES**

Because of the requirements on the grants, it is difficult for some tribal nations to navigate the process. Many tribes do not have the funding to hire professional grant writers or grant directors similar to their larger non-tribal partners. Grants such as EMPG are often not passed through the states to tribes which also limits the ability to develop capability. The federal government woefully underfunds tribal homeland security programs where less than a dollar of every hundred dollars allocated for state programs makes it to Native American tribes.

## **POTENTIAL SOLUTIONS**

The best solution would be for FEMA to design a program for Tribal Nations and rural communities that follows in the footsteps of EMPG, which are set awards to each state with additional funding based on risk (citation). In many states, these funds provide the bulk of the funding for state emergency management personnel (citation). This option, however, would face significant funding and statutory hurdles.

### **Simplify the THSGP Application Criteria**

**Recommendation 19-13:** The Administrator should immediately change the 50-mile criteria in the THSGP Notice of Funding Opportunity (NOFO) to, at the very minimum, match the 100-air mile reasonable distance used for over seven decades in border enforcement activities.

#### **Anticipated Impact**

According to FEMA, there are currently 421 tribes eligible for funding. Implementing this recommendation would mean that an additional 52 tribes are eligible.

#### **Cost, Time, and Other Implementation Considerations**

We do not anticipate that this recommendation will require significant burden to implement. It would require a policy change but is completely within FEMA's purview to decide.

### **Ensure That States Pass Through Grants Equitably**

**Recommendation 19-14:** The Administrator should ensure that States uphold the statutory requirements of the grant programs and provide funding to tribes without a waiver of sovereignty requirement.

#### **Anticipated Impact**

This action would potentially provide additional funding to tribes to maintain an emergency management capability.



### **Cost, Time, and Other Implementation Considerations**

This would require not only additional staff time but also additional resources. It may be challenging to secure that funding, especially without removing any from other partners, but this is the necessary step to ensure equity in outcomes.

### **Fund Tribal Nations in the Same Way Funds States Are Funded**

**Recommendation 19-15:** The Administrator should evaluate the full complement of Agency programs to provide greater access and equitable baseline funding to Tribal Nations across those Agency programs.

#### **Anticipated Impact**

By providing equitable baseline funding would provide the opportunity for Tribal Nations to staff emergency management offices and improve the baseline capability within Indian Country.

#### **Cost, Time, and Other Implementation Considerations**

Implementing this recommendation may incur costs in two ways. First, simply evaluating FEMA programs would require staff time. Second, implementing any changes to funding structures, especially those set at the DHS level or by Congress, would require significant effort.

## **CURRENT STATE: EMERGENCY MANAGEMENT TRAININGS IN RURAL AREAS ARE OFTEN CANCELLED DUE TO ENROLLMENT ISSUES**

Local delivery courses are required to be cost effective for FEMA. However, these courses are vital to improving the whole community capability to respond to hazards. In many cases, courses are cancelled if they do not meet certain enrollment criterion. Some classes require 20 students, others require 25 students. In rural communities, it is sometimes difficult to reach these numbers due to geographic, staffing, and time constraints.

## **DESIRED STATE: REDUCE ENROLLEMENT REQUIREMENTS TO ENABLE MORE CLASS DELIVERY AT THE LOCAL LEVEL**

Ensuring that educational opportunities are available in rural parts of the country will improve the knowledge base and capabilities of areas that are often dealing with multiple hazards and few resources.



## CONSEQUENCES OF PROBLEM: SOME JURISDICTIONS CANNOT AFFORD TO SEND PEOPLE TO DISTANT COURSES AND THEREFORE DO NOT RECEIVE TRAINING

Rural class delivery is an essential part of the preparedness goal of readying the Nation for hazards. Disasters start and end locally, and smaller jurisdictions need educational opportunities to improve their capability. However, it is smaller jurisdictions where we see emergency management functions being completed by one person who may have additional duties that prevent them from leaving their jurisdiction for an extended period. Additionally, it is very costly for some smaller jurisdictions to travel long distances for a training.

### POTENTIAL SOLUTIONS

#### Reduce Enrollment Criteria for Local Delivery of Emergency Management Institute Courses in Rural Areas

**Recommendation 19-16:** The Administrator should reduce the enrollment criteria to 10 students as a minimum to host a class in rural areas.

##### Anticipated Impact

If the enrollment criteria are reduced, more classes will be hosted in rural areas. This will reach responders that would not traditionally be able to attend classes at the Emergency Management Institute or travel at their own expense.

##### Cost, Time, and Other Implementation Considerations

FEMA already has the plans in place to deliver these courses so simply not cancelling them may not incur significant additional costs. However, FEMA must prioritize building capacity in all communities nationally, not just urban ones. While this may create additional costs in providing these courses, that is simply the cost of building capacity in most of the country.

## **Building Resilient Infrastructure in Communities (BRIC) Program Recommendations**

The following recommendations take account of the 2018 PDM NOFO, the 2019 PDM NOFO, the DRRA Section 1234 and an understanding, from discussions with FEMA policy leadership, that over the next several years the new BRIC program will subsume the PDM program and reflect the provisions of the DRRA fully. As currently structured (2019 PDM NOFO) there are, however, barriers to wide-scale participation and program effectiveness.

### **CURRENT STATE: THE PRE-DISASTER MITIGATION PROGRAM MAKES AWARDS BASED ON OVERLY COMPLICATED AND OPAQUE CRITERIA**

The Disaster Recovery Reform Act (DRRA) amended Stafford Act Section 203 and added a new predisaster hazard mitigation program – National Public Infrastructure Predisaster Hazard Mitigation; and removed authority for the legacy Pre-Disaster Mitigation (PDM) program. One significant change in the authority was the authorization of a dedicated funding source as opposed to annual appropriation. FEMA named its new program BRIC to tackle infrastructure resilience head-on.

The following recommendations are offered to provide opportunities for FEMA to better respond to more frequent and more severe disasters:

- Adequate mitigation funding is currently not available to meet the Nation's needs across all hazards and across all regions. The DRRA section authorizing BRIC is a very welcome action to begin addressing the need for greater pre-disaster mitigation.
- These recommendations support improvement in FEMA's ability to: more strategically address risk in grant allocation; fund a broader range of project types; and support the ability of grantees and sub-grantees to combine and leverage funding from multiple federal sources and the private sector. All of these recommendations will support greater efficiency in FEMA's implementation of resiliency investments in FEMA's Strategic Goal 1, Objective 1.1: Incentivize Investments that Reduce Risk, Including Pre-Disaster Mitigation, and Reduce Disaster Costs at All Levels.
- The BRIC program funding level is likely to vary from year-to-year, depending on the prior year's disaster activity level, and therefore the program must be consciously designed to be flexible enough to perform well in both low funding years and in high funding years.
- The resources and capacity to conceive, design, and deliver resiliency projects varies significantly across the many applicants and sub-applicants throughout the country. Therefore, the BRIC program design must, building on the PDM program, continue to recognize this fact and provide the flexibility required by FEMA to meet the needs of all eligible applicants and sub-applicants.



The 2019 PDM NOFO sets out a complicated and not very transparent award criteria for both resilient infrastructure funding and the traditional competitive award funding. Although the FEMA Strategic Plan Goal 3 calls for reducing the complexity, we believe that the PDM program award criteria in the 2019 NOFO, does not adequately address this goal.

For resilient infrastructure funding, maximum of \$10 million federal share per project, the award ranking criteria includes a private partnership cost share, adoption of International Building Codes, and participation in several other programs ostensibly designed to promote resilience, such as Community Rating System, Firewise, and Cooperating Technical partners program, among others. For the traditional competitive award funding, FEMA will consider whether applicants or sub-applicants have received HMGP funding, as well as other criteria including community factors such as size and poverty level.

In our assessment, there is not enough weight given in the priority score to scientific analysis of risk reduction and the cost benefits of a mitigation project. Also, we believe there is too much reliance on private partnership cost share and other factors, not all of which are applicable to every community. The PDM program also notably includes statutory allocations for states and territories. In addition, PDM has also established a set-aside for federally-recognized tribes. When taken together, however, this complex set of preferences and set-asides increases complexity, reduces transparency, and reduces the weight of best practice risk quantification analysis, including cost benefit analysis, in the funding allocation decisions.

As Figure 1 shows, FEMA requires International Building Codes (IBC) standards from 2009, even though IBC editions are updated every three years, making 2018 the newest. IBC focuses heavily on fire protection (e.g. not all hazard risks). Other criteria also focus heavily not only on urban fire risk but also on wildfire risk, which may not be as pertinent to many areas (e.g. Staten Island or Miami-Dade). Finally, the Cooperative Technical Partners (CTP) encourages partnerships with regional and community agencies to participate in updating flood maps, but it is not clear how much the partner work is being incorporated.

Figure 1: Final Priority Scoring Criteria from the FY2018 Pre-Disaster

Priority	Description	Total Points
Private-Partnership Cost Share	Cost share taken on by private organizations/businesses emphasizing community participation, collaboration, and investment. Points will be assigned based on percentage of private cost share invested.	150
International Building Codes (IBC) Adopted (2009 or newer)	IBC adoption epitomizes community commitment to responsible building regulations. Points to IBC participating communities with 2009 version or higher adopted.	100
Building Code Effectiveness Grading Schedule (BCEGS) rating	BCEGS rating assesses effectiveness of enforcement and adequacy of building codes with emphasis on mitigation. Classes weighted based on national class grouping ratings. Highest weight will be assigned to class 1 and descending through lower classes. (Graded Scale: 1 = 100, 2 = 90, 3 = 80, 4 = 70, 5 = 60, 6 = 50, 7 = 40, 8 = 30, 9 = 20, 10 = 10)	100
Community Rating System (CRS) Participation	The CRS recognizes and encourages community floodplain-management activities that exceed the minimum National Flood Insurance Program standards. Depending on the level of participation, flood insurance premium rates for policyholders can be reduced up to 45%. Highest weight will be assigned to class 1 and descending through lower classes. (Graded Scale: 1 = 100, 2 = 90, 3 = 80, 4 = 70, 5 = 60, 6 = 50, 7 = 40, 8 = 30, 9 = 20, 10 = 10)	100
Firewise, USA	The National Fire Protection Association's Firewise USA™ program teaches people how to adapt to living with wildfire and encourages neighbors to work together and take action now to prevent losses. Points will be assigned to Firewise participating communities.	25
Cooperating Technical Partners Program (CTP) Participation	Qualified partnership program where communities commit to collaborate in maintaining up-to-date flood hazard maps and other flood hazard information. Points will be assigned to CTP participating communities.	25
<b>Total Points Available</b>		<b>500*</b>

We understand and welcome that FEMA is required by statute to allocate funding set-asides to each states and territories, and that FEMA has chosen to also set aside funding for tribal nations. However, once these statutory allocations are made, and the remaining available funding reduced, it is important for FEMA to then prioritize projects for the competitive funding awards that are both cost effective and reduce the most risk.

FEMA understandably requires an approved Benefit Cost Analysis (BCA) to determine the cost-effectiveness of proposed hazard mitigation construction projects prior to funding. However, the competitive funding allocation criteria does not incorporate explicitly whether one project reduces risk more

than another project. resilient infrastructure projects, as well as traditional competitive award mitigation projects, run in the tens if not hundreds of millions of dollars. It is critical that the award decisions of grant funding for these complicated and costly projects are prioritized based up on scientific risk measurement, such as the measure of the damages averted used in the FEMA BCA.

FEMA also restricts the types of mitigation projects it will fund, making funding of certain high priority projects nearly impossible. Currently, the PDM program allows for only three categories of projects: (1) plans, which traditionally means hazard mitigation plans, (2) advance assistance, which includes a



variety of activities, frequently including the many studies for the conceptual design of a mitigation project, and (3) mitigation projects, which are generally construction. Certain, often smaller-dollar-value projects, such as risk assessments, severe repetitive loss maps, and other planning and capacity building exercises, do not fit perfectly into any currently available project category. As a result, they are generally not eligible. This has created a significant gap in the funding of highly relevant projects that do not fit into the current eligible project types of PDM.

We have no issue with FEMA requiring a BCA to determine the cost-effectiveness of proposed hazard mitigation construction projects prior to funding. However, the benefits of some highly relevant projects cannot be easily measured using FEMA's BCA methodology, which further limits the type of projects approved. Proposed projects that cannot account for property value and repetitive historical losses are not likely to pass a FEMA BCA. The cost effectiveness of emergency generators, early warning systems, and other similar projects are difficult to validate using BCA, and therefore these types of valuable projects are excluded from PDM, although they are certainly valid mitigation project types.

### **DESIRED STATE: AWARDS CRITERIA QUANTIFIES RISK MORE DIRECTLY**

There is inadequate weighting in the priority score for the impact of natural hazard risks for both resilient infrastructure and traditional competitive award funding. FEMA should redesign the PDM decision criteria for the resilient infrastructure funding and the traditional competitive award to increase the weight of scientifically validated risk analysis, such as the measure of the damages averted used in the FEMA BCA, thereby improving the likelihood of funding the most effective resiliency investments.

FEMA should also expand the definition of eligible PDM projects, specifically allowing for the funding of smaller non-traditional (non-plan, advance assistance, or construction) resilience projects. Non-traditional projects, such as building state-level capacity to quickly restore lifelines, could also be an effective use of BRIC funding. These projects are generally not funded under current PDM guidance. Additionally, HMGP Sec. 404 allows grantees to use up to 5% of program funds for projects that do not require a BCA. FEMA could apply the same model to BRIC or specify a different methodology or threshold to determine the set-aside. Allowing FEMA the discretion to fund a wider variety of small projects will allow more funding for small project types and assist FEMA grantees and subgrantees to build and grow their capacity.

### **CONSEQUENCES OF THE PROBLEM: GRANT AWARDS MAY NOT OPTIMIZE RISK REDUCTION AND LIMITS ON ELIGIBLE PROJECT TYPES LIKELY DIMINISHES PARTICIPATION**

The funding allocation criteria failure to incorporate, explicitly, consideration for the amount of damages averted. They currently fail to score whether one project reduces risk more than another. This failure of the current scoring criteria does not ensure the award of grants that optimally reduce risk.

Limiting project type eligibility for PDM likely reduces participation from grantees and subgrantees who have viable mitigation projects. Allowing FEMA the discretion to fund a wider variety of small projects

will increase program participation by low-capacity and low-funding availability grantees and sub-grantees and will support FEMA in assisting grantees and subgrantees to build and grow their own capacity to develop and deliver mitigation projects.

## POTENTIAL SOLUTIONS

### Simplify the BRIC Scoring Criteria

**Recommendation 2019a-17:** The Administrator should simplify the award criteria for the competitive funding portion so that projects that reduce the most risk receive significant funding criteria points.

#### Anticipated Impact

Implementing a clearer and more relevant scoring criteria set for the competitive funding awards will result, particularly in high funding years, in project awards that more efficiently reduce risk than the current allocation decision criteria. It will likely also encourage more applications—and funded projects—from communities that might have found the current award criteria too opaque or not relevant.

#### Cost, Time, and Other Implementation Considerations

BRIC grantmaking should incorporate a risk-based allocation system; using best practice quantitative metrics to differentiate projects, based on the risk of loss each project will mitigate or prevent. The risk quantification methods should consider the frequency, severity, and distribution of risk from the hazard being mitigated. The funding allocation methodology should allow for comparing risk from different types of hazards based on the amount of risk being mitigated. BRIC should score projects that mitigate larger risks and those risks most relevant to the affected community, leading to smarter investments in mitigation projects. These changes in the BRIC scoring methodology could be reasonably implemented over the next two years of BRIC program rollout.

Since all PDM projects must complete a FEMA BCA to demonstrate cost effectiveness, FEMA already has a scientific risk measurement – the damages averted by a particular mitigation investment counted in the numerator of the FEMA BCA – this proposal presents few if any implementation challenges. The priority scoring criteria in the inaugural BRIC NOFO should simply include significant points for a project's mitigation potential measured as the damages averted (loss of life and property damage) from the natural hazards mitigated by the project in the affected community.

### Expand the Definition of Eligible Projects and Also Include Certain Small Projects That Cannot Be Approved With a BCA

**Recommendation 2019a-18:** The Administrator should clarify that a broad range of mitigation projects will be considered for BRIC funding, not only hazard mitigation plans, advance assistance, and mitigation construction projects. This could include early warning systems, loss avoidance studies, severe repetitive loss maps, risk assessments, and other planning and capacity building activities, among others.

**Recommendation 2019a-19:** The Administrator should set aside a portion of PDM/BRIC funding for projects that do not require a BCA. These projects would be evaluated based on a narrative explanation of their cost effectiveness, in lieu of a BCA. The proposed projects would be required to meet all other PDM/BRIC requirements. For example, BRIC could follow the FEMA HMGP management method of a 5% set-aside for projects that do not require a BCA.

### Anticipated Impact

By explicitly allowing the funding of non-traditional resilience projects, many applicants with valid, but non-traditional, projects will be able to apply. In addition, more explicit guidance on project eligibility that cannot be validated by a BCA would also encourage more applications. This is one aspect of how FEMA manages the HMGP successfully. These two recommendations will enhance participation in PDM/BRIC by low-capacity and low-funding availability grantees and sub-grantees, particularly in those years with relatively low disaster activity and therefore relatively low PDM/BRIC funding levels.

For example, risk assessment studies to identify vulnerabilities will both strengthen preparedness and allow communities to better demonstrate cost-effective resilience projects in the future.

- For preparedness, communities and public utilities must start with risk assessments to inform response operations. This will also allow the designation of certain locations/properties as operations centers during and after a disaster if they are expected to remain functional despite prevailing hazards.
- For resilience projects, more localized risk assessments will help demonstrate that proposed projects are cost-effective without only relying on FEMA's national risk data and a BCA.

### Cost, Time, and Other Implementation Considerations

Encouraging greater participation in mitigation activities nationally is clearly a goal of PDM/BRIC and these recommendations will support this goal. We believe that funding a greater number of smaller project types by FEMA, with implementation by a larger and more diverse cohort of grantees and subgrantees, including more low-capacity and low-funding availability grantees and sub-grantees, and will be very useful in achieving the goal of building SLTT capacity to deliver disaster recovery. Further, strengthening preparedness through early warning systems and local risk assessments improves the ability of SLTTs to respond. Disaster preparedness incentivizes the applicant by potentially reducing the financial burden of a disaster by minimizing business interruption and can potentially lower insurance premiums.

### Develop a Toolbox to Support Stakeholder Mitigation Projects

**Recommendation 2019a-20:** FEMA should develop a toolbox to assist SLTT agencies in outreach to private sector entities to educate them on the benefits of contribution, both financial and in kind, for mitigation BRIC projects. This recommendation helps SLTTs to benefit from the contributions of private

sector entities and helps SLTTs to better communicate these benefits to the private sector thereby building more public-private partnerships.

### **Anticipated Impact**

Many private sector partners already contribute to pre-disaster efforts through financial contributions or donated resources without the awareness of the benefit to emergency management agencies responsible for tracking mitigation or disaster costs. This is due to a lack of private sector awareness of the need for match contributions and how this could benefit their state, municipality, or geographic area. The ability to better track these contributions provides a more accurate and holistic view of pre-disaster project costs and contributions by private sector entities, as well as SLTTs. This would provide a more accurate representation to our elected officials of how these public private partnerships can benefit our communities and ultimately create a more resilient Nation.

These tools will provide a more consistent approach in identifying potential private resources, accountability for those contributions, and depict a more accurate picture of disaster costs.

### **Cost, Time, and Other Implementation Considerations**

Possible materials could include information on developing resiliency in the consumer base, the benefit of contributions to local match requirements for the whole community, and the tracking resources to help companies understand the importance of using the established processes to ensure that contributions are counted toward the match requirement.

The tool box could include training and communications on:

- 1.) Benefits to private sector entities that own/operate lifelines (e.g., grocery stores, utilities, etc.) of participating with SLTTs in developing local and regional resiliency projects that can include community public relations and brand recognition benefits. For example, a local grocery chain should be interested in resiliency of transportation and power (electricity and fuel) to ensure pre- and post-disaster access to grocery stores and that the food sold in stores post-disaster is safely maintained with proper refrigeration, etc.
- 2.) Outlining the various mechanisms for partnering with local and regional government agencies could include:
  - a. In kind contributions to the local government agency's share of the grant through donated staff time from employees of the lifeline firm participating in developing the BRIC project submitted for federal funding (training and guidelines of how to track this contribution should be included), and
  - b. Monetary project contributions, which can be also used to offset a portion of the local government agency's share of the grant (training and guidelines of how to track this contribution should be included). More and more local governments are seeking private funding to provide for needs not met from their existing tax bases. This includes contributions through 501-C organizations for additional or unmet needs related to educational institutions, privately held critical infrastructure partners, publicly held

infrastructure partners, and a variety of other critical facilities. FEMA should encourage a similar practice for funding resiliency investments that would create consistency in how these contributions are identified and accounted for.

### Allow Regular Use of Economic Impact in FEMA BCA Calculations

**Recommendation 19-21:** The Administrator should allow applicants to use the economic impact of resilience projects as a central benefit in the FEMA BCA calculation. Currently, the FEMA BCA methodology can allow economic and social benefits to be considered only in certain limited circumstances. Economic impact, however, is central to community resilience. For example, in urban environments, there may be a lower probability of disaster but very high adverse impact on the economy (concentrated population, wealth, and built environment).

As a result, the BCA should always consider economic disruption as a feature of cost-effectiveness. Also, if a large size mitigation project is structured using the public-private partnership (P3) model, as the current PDM NOFO calls for, it would potentially include revenue-generating elements that would benefit the local economy. A P3 project, for example, could include costal development with recreational facilities (e.g., theme park, stadium, etc.) which yield positive economic benefits. Due to the high cost of such projects, without incorporating economic impact into the BCA, it will be difficult for certain P3 project to demonstrate cost-effectiveness.

#### Anticipated Impact

This change would allow the funding of large numbers of mitigation investments that may not demonstrate cost-effectiveness under FEMA's BCA software. Incorporating economic impact as a feature of resilience would have a tremendous impact on achieving FEMA's goal of building resilient infrastructure and communities.

#### Cost, Time, and Other Implementation Considerations

This recommendation would increase the number of mitigation projects determined to be cost effective under the FEMA BCA methodology. It would also require updating the BCA software and amending FEMA policy to incorporate economic impact as central to resilience, in addition to physical infrastructure damage.

## CURRENT STATE: FEMA MITIGATION GRANT PROGRAMS DO NOT ADEQUATELY ADDRESS CROSS-JURISDICTIONAL BORDER ISSUES

Many infrastructure lifelines benefit residents of multiple jurisdictions. Examples include flood protection systems crossing multiple jurisdictions, bridges that span two cities, transit systems, water treatment facilities or hospitals that serve people from multiple cities, counties, or even states. The 2019 PDM NOFO allows for "multi-state/tribal" mitigation projects – which is important. However, the NOFO does



not explain how multiple states/tribes could collaborate on a single project. It does not contain guidance on best practice financial authorities or grant management for the delivery of multi-jurisdictional mitigation projects that cut across counties, cities, etc.

Other federal government grant programs that encourage, or even require, multiple jurisdictions to apply for and administer grant funds provide specific guidance on how to administer multi-jurisdictional projects. UASI for example, provides grants to urban areas – or groups of urban areas – that span multiple cities, counties, or even states. We do not believe regionalizing grants is the best approach, but explicitly providing more guidance on how multiple jurisdictions can collaborate on projects would be desirable.

How can FEMA allow for and encourage this? Currently, a jurisdiction may be discouraged from pursuing funds that benefit multiple jurisdictions because the one jurisdiction would have to apply for and administer the project while multiple jurisdictions benefit. Within certain SLTTs, there is some history of multiple jurisdictional approaches to mitigation, but FEMA should do more to provide guidance and support this coordination. We understand that FEMA will fund one multi-state project per applicant, but this does not address the many opportunities for multijurisdictional projects below the state level.

## **DESIRED STATE: FEMA FUNDS LARGE, CROSS-SECTOR MITIGATION INVESTMENTS THAT MOST EFFECTIVELY REDUCE COMMUNITY RISK OF LOSS**

FEMA funds large mitigation projects protecting infrastructure lifelines benefiting the residents of multiple jurisdictions. Examples include flood protection systems crossing multiple jurisdictions, bridges connecting two cities, transit systems, water treatment facilities or hospitals that serve people from multiple cities, counties, or even states.

## **CONSEQUENCES OF PROBLEM: PROJECT DESIGNS ARE ARTIFICIALLY LIMITED AND THE SCOPE OF THE RESILIENCE IMPACT IS ALSO LIMITED**

Since lifeline infrastructure, as well as hazards threatening lifeline infrastructure, do not follow the boundaries of political jurisdictions, it makes sense that mitigation projects funded by BRIC align with the nature of the hazard rather than the contours of political jurisdictions. In the current system, these projects do not get funded, leaving the communities vulnerable.

## **POTENTIAL SOLUTIONS**

### **Encourage Cross-Jurisdiction Collaboration**

**Recommendation 2019a-22:** The Administrator should publish guidance making clear that multiple jurisdictions are allowed to collaborate on individual PDM/BRIC projects by allowing for joint applications, allowing grant awards to be shared among multiple jurisdictions, and even weighing collaborative projects favorably in the award process.

### Anticipated Impact

We anticipate that funding grants to focus on outcomes directly in communities, regardless of political jurisdictions, would allow for much more effective mitigation projects that. Moreover, it would also allow for larger projects to be considered, which would help ensure that local communities are able to comprehensively address the risks they face, rather than addressing them in artificial silos.

### Cost, Time, and Other Implementation Considerations

This recommendation would not have drastic financial or staff time costs. Implementation may not be as simple as flipping a switch but, overall, we believe this is a policy change within current FEMA authorities.

### Seek Approval by Congress of Legislation to Encourage Cross-State Collaboration on Mitigation Projects

**Recommendation 2019a-23:** The Administrator should work through the legislative change process to establish authorities that allow funding of cross-jurisdictional agreements on mitigation projects. One model for this authority could be the Interstate River Compacts that have governed rights and protections, of states along the length of river drainage basins related to water diversion. This model may serve as an example of how a multi-jurisdictional problem, such as multi-state resilience projects, can be addressed.

### Anticipated Impact

Additional guidance on how multiple states/jurisdictions could collaborate on a single mitigation project will lead to more large, multiple jurisdiction mitigation projects. The current lack of guidance is a large barrier for SLTTs who want to address multi-jurisdictional mitigation problems. This would support PDM/BRIC program goals to fund more needed mitigation projects across the Nation.

### Cost, Time, and Other Implementation Considerations

Developing additional guidance is a short-term solution and would not solve issues related to multi-state jurisdictional issues. This is why a legislative change, which will take longer to achieve, is equally critical for multi-state mitigation projects.

## Increasing Total Mitigation Funding Recommendations

### CURRENT STATE: FEDERAL, STATE, AND PRIVATE MITIGATION FUNDING IS INADEQUATE TO ADDRESS THE NEED

The current total of public/private mitigation funding is inadequate to protect and make all national lifelines more resilient. DRRA provides dedicated for PDM and FEMA is capitalizing on this opportunity in the new BRIC program, tackling lifeline resilience head-on. As currently structured, the BRIC program should be revised to allow for funding larger mitigation investments and to encourage multiple-jurisdiction projects applications more strongly.

For the FY2019 PDM grant cycle, there is a \$4 million cap (\$10 million for selected infrastructure projects). A grant of \$4 million, or even \$10 million, per project, is not sufficient to fund large mitigation projects that protect critical lifeline infrastructure. Limiting the maximum grant award hampers the Nation's ability to protect the most critical lifelines – a primary goal BRIC.

Past successful resilience work demonstrates that more funding is needed. However, if FEMA increases or eliminates the cap, it must also ensure that there is a healthy continuum of projects, including less expensive ones benefiting small to medium size SLTTs. The current SLTT set asides were designed to meet this explicit goal.

The amount of funding required for critical lifeline protection exceeds the capacity of any one federal recovery program or private funding source. PDM/BRIC is just one of many federal sources of hazard mitigation funding (FEMA HMGP, FEMA Flood Mitigation Assistance, and FEMA Section 406, Housing and Urban Development Mitigation, Federal Transit Administration/Federal Highway Administration Emergency Relief Programs, Department of Commerce Economic Development Administration, and the National Oceanic and Atmospheric Administration). However, layering funding from multiple government agencies or other private sources is complex, administratively burdensome, and infrequently achieved. This practical inability to leverage multiple federal funding sources thus hinders the Nation in implementing more large resiliency projects to protect critical lifelines. Addressing this issue will significantly impact the Nation's need for greater resiliency funding.

Further, there is a mostly untapped potential for private funding to support resilience, if properly incentivized. Still, SLTTs need assistance in understanding how best to access this funding. Encouraging SLTTs to leverage multiple federal grants and access private funding streams would support implementing larger more impactful mitigation projects.

## **DESIRED STATE: ENABLE JURISDICTIONS TO EFFECTIVELY LEVERAGE MULTIPLE FUNDING STREAMS TO IMPLEMENT LARGER, MORE IMPACTFUL RESILIENCY PROJECTS**

Strengthening lifelines, including those related to transportation, food and water, health and medical, and energy, often cost tens if not hundreds of millions of dollars.

- Example 1: After Hurricane Sandy, numerous major infrastructure resilience projects in New York City (NYC) cost more than \$100 million (flood protection of public hospitals, wastewater treatment, public housing, etc.).
- Example 2: After Hurricane Sandy, FEMA HMGP funded, as one project, \$500 million in resiliency upgrades for flood and scour protection across 105 bridges owned/operated by the New York Department of Transportation.

Infrastructure resilience in vulnerable urban areas will likely benefit the greatest number of people—and these projects tend to be in areas that are more expensive and require larger grants to protect lifeline infrastructure.

While other recommendations like eliminating the project cap would reduce the number of grants awarded and the number of applicants receiving grants, it is necessary to fund projects that will actually protect lifeline infrastructure – those are the larger cross-jurisdictional projects. It could also allow FEMA to focus funds on priority lifelines. The elimination of the funding caps would increase interest in the program in states, counties, and cities that otherwise do not see the program as a critical tool for large increases infrastructure resilience. Supporting jurisdictions to better leverage multiple funding streams will support the completion of a greater number of larger, more impactful mitigation projects.

## **CONSEQUENCES OF PROBLEM: JURISDICTIONS CANNOT FUND NECESSARY MITIGATION INVESTMENTS**

The anticipated funding increases for BRIC as part of the DRRA will significantly increase the pre-disaster mitigation investments that FEMA can support. However, it still will not meet the need for mitigation nationally, especially as a range of hazards increase in intensity and frequency, and not just hurricanes and wildfires. The degree to which the nation can continue to make these investments is directly correlated with the degree to which we can maintain our economic strength in the face of these hazards. The consequence of not continuing to increase the available funding is that small and large communities across the nation will continue to experience severe economic disruption and loss of life as a result of natural disasters.

## POTENTIAL SOLUTIONS

### Eliminate the Project Funding Cap

**Recommendation 2019a-24:** The Administrator should eliminate the funding cap on individual competitive funding PDM/BRIC grants. FEMA could then use its discretion to fund a mix of larger and smaller projects that best advance resilience goals, including more expensive projects.

#### Anticipated Impact

Projects proposed will then be large enough to begin to protect against large hazards. A larger cap will allow for many large mitigation projects to be funded in the years after significant disasters. A funding level of \$600 million may allow for over \$400 million in competitive grants after the statutory allocations. Funding ten \$40 million lifeline infrastructure projects would potentially mitigate more risk nationally than forty \$10 million projects. However, raising the cap would not dictate that the largest projects be funded first. The above recommendation on the award criteria would assure that FEMA would find the mix of both higher and lower cost projects that most effectively mitigated risk. This proposal simply allows FEMA to think big when it comes to protecting lifeline risks.

#### Cost, Time, and Other Implementation Considerations

One implementation option worth considering is that the larger lifeline infrastructure projects will require longer periods of performance. However, the current regime of period of performance which allows extensions seems workable.

### Coordinate Funding Streams Across Federal Stakeholders

**Recommendation 2019a-25:** The Administrator should work with federal partners to further streamline the process for combining mitigation funds from multiple federal programs on one project. This could involve allowing one BCA for one project with multiple federal funding agencies, ensuring that the new Unified Federal Review process, for expedited environmental and historical preservation reviews, is actually implemented on projects with FEMA funding, and otherwise streamlining the compliance and oversight of projects funded by multiple federal agencies.

#### Anticipated Impact

Facilitating the further coordination of funding streams from multiple federal agencies will allow SLTTs to more efficiently leverage multiple funding sources to address larger infrastructure lifeline mitigation projects. There has been recent progress in this area. Notably the federal Unified Federal Review has sped the environmental and historical review of certain projects. Further, HUD has embraced this idea in the NOFO for HUD mitigation funding. But until efforts such as these are widely embraced within the federal family and across all SLTTs, the problem to leveraging multiple federal revenues streams on individual projects will persist.



More progress on facilitating the use of multiple funding streams on individual projects will also speed the pace of recovery. Currently the pace of recovery is held back in many cases by the administrative burden faced by SLTTs performing multiple, duplicative federal requirements on the same project, simply because more than one federal agency has some stake in the project.

### **Cost, Time, and Other Implementation Considerations**

There are multiple obstacles to combining funding from different federal grants, including the requirement to complete multiple applications, differing methods of demonstrating cost effectiveness, and overlapping and differing compliance requirements associated with procurement, environmental/historical preservation, etc.

### **Encourage Private Sector Investment**

**Recommendation 2019a-26:** The Administrator should review the existing range of successful public private partnerships delivering resilience projects, share best practices with SLTTs, and provide technical assistance to help SLTTs pursue appropriate public private partnerships to address mitigation needs in their communities. Options for appropriately leveraging private funds that have been successful in the past include, but are not limited to: a surcharge on certain regulated insurance lines; voluntary contributions to a trust fund by local property owners, resulting in an insurance premium discount; creation of a Resilience Improvement District and implementation of an assessment fee; issuance of environmental impact bonds; and Public-Private Partnership (P3) Cost/Risk Sharing Models. The existence of these successful and varied approaches is not widely known within the mitigation teams at SLTT jurisdictions across the Nation.

### **Anticipated Impact**

Regardless of the increase in PDM/BRIC funding, it is clear that traditional public funding options will remain inadequate to fund all the needed resiliency investments across all SLTTs and multi-jurisdictional projects. It also remains clear that other sources, including private capital, will be very helpful in addressing the large need for greater investment in mitigation. Lack of clarity regarding possible approaches, the legal authorities, and possible governance options available when private capital is involved in funding infrastructure resiliency projects is a barrier that needs overcoming. Private capital partners will be hard to find by SLTTs without a clear understanding on the part of all stakeholders on who will manage these funds and under what legal authorities and internal controls.

When these barriers are appropriately addressed and SLTTs are aware of best practice options, they and their private partners can pursue true P3 models, strategically designed and deployed, with adequate capital, appropriate governance, and enabling legislation, helping build resilient

infrastructures and communities across the Nation. The Milken Institute has identified a number of promising practices for leveraging private investment to support public mitigation projects.<sup>18</sup>

### **Cost, Time, and Other Implementation Considerations**

To attract private sector investment into public infrastructure projects, transparency, accountability, and shared governance (as appropriate) are critical. Further, there needs to be a clear, scientifically validated risk mitigation model that is aligned with the private sector's evaluation of return on investment, which, in this case is measured in terms of mitigated risk and the BCA of the investment.

### **Ensure Adequate Funding Is Set Aside for BRIC**

**Recommendation 2019a-27:** The Administrator should estimate the aggregate amount of the grants from each major disaster no later than 180 days from the disaster declaration utilizing a factor capturing the typical increase in the value of grants that occurs between 180 days after the declaration and the closeout of the disaster, in order to more accurately capture in the 180 day estimate the final true cost of the disaster.<sup>19</sup>

### **Anticipated Impact**

This recommendation will likely result in additional funding being set aside for BRIC because estimates at 180 days are frequently less than the final amount of grants expended.

### **Cost, Time, and Other Implementation Considerations**

The DRRRA calls for the President to set aside an amount equal to 6 percent of the “estimated aggregate amount of the grants” to be made for each major disaster from the Disaster Relief Fund in order to provide funding for BRIC. Furthermore, the DRRRA requires that the 6 percent must be estimated not later than 180 days after each major disaster declaration. However, the 180-day estimate of total grants to be made for a disaster is actually very preliminary and not very accurate. It is common for the 180-day estimate to be roughly 50% of the final grants made in a disaster. In order for the BRIC funding set aside from a disaster to be accurate, FEMA must utilize a factor for the increase in estimated total grants at 180 days to the final estimate of grants for a disaster at closeout.

We believe that developing a methodology to ensure that the 180-day estimate of total grants is as accurate as possible will not take significant staff resources since this recommendation simply provides a pathway to ensure that the 180-day estimate is as accurate as possible. It is also fully in line with the language and intent of the DRRRA.

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<sup>18</sup> Jason Davis and Caitlin MacLean, “Financing Urban Resiliency: Coastal Resiliency in Lower Manhattan,” The Milken Institute, September 17, 2019, accessed October 31, 2019, <http://milkeninstitute.org/reports/financing-urban-resiliency-coastal-resiliency-lower-manhattan>

<sup>19</sup> Robert T. Stafford Disaster Relief and Emergency Assistance Act, <https://legcounsel.house.gov/Comps/Robert%20T.%20Stafford%20Disaster%20Relief%20And%20Emergency%20Assistance%20Act.pdf>

## **CURRENT STATE: THE ADVANCE ASSISTANCE CAP IS TOO LOW FOR LARGE PROJECTS AND SHOULD BE TIED TO FUNDING OF THE FULL PROJECT**

The 2018 PDM NOFO included Advance Assistance (AA) for the first time. This is a step in the right direction, but there are two problems with the way that AA is structured:

1. AA is capped at \$200,000 per award. This is not enough to fund design for large, complex infrastructure mitigation projects (those projects in excess of the \$10 million cap, mentioned elsewhere in these recommendations). Yet it even falls short of funding the conceptual design studies that may be required for a \$10 million mitigation project.
  - a. Example: In NYC, design costs can range 8-15% of project costs. The Red Hook Integrated Flood Protection System is a resilience project that required \$13 million in design costs for a \$100 million project. There are many further examples nationwide.
2. Applicants are provided no assurance that if they receive AA for a project, that they eventually will receive subsequent funding to complete the full project. Without some linkage between AA one year and likely full funding in any subsequent year, the AA benefit is undermined. Applicants, with traditionally challenged mitigation budgets, will be reluctant to pursue an investment in the conceptual design of a project (e.g. hydrologic and hydraulic studies for a flood protection system) when the full project is not likely to get funded. The 25% non-federal share is already a significant cost to grantees and sub-applicants for larger resilience projects. The value of advanced assistance for a project, without any certainty of being fully funded, undermines the ability of grantees and sub-applicants to justify the expense of pursuing AA funding.

## **DESIRED STATE: FEMA USES ADVANCE ASSISTANCE AS AN EFFECTIVE MITIGATION TOOL**

Grant programs focused on infrastructure resilience, such as BRIC, must recognize the requisite time and money required to design such projects. AA can be an effective tool in providing funds for applicants to design and scope mitigation projects – but it is not complete solution.

AA must provide sufficient funding to fully fund design work, and applicants awarded AA must have some reasonable expectation that the projects they design will receive award funding within a reasonable time frame, or they will be disincentivized to participate.

More discussion is needed on whether viable projects that receive AA funding should be guaranteed funding within a reasonable period of years, or whether a scoring preference for the full project, in the next year after design is completed to remove the current disincentive. Another worthwhile option is to explore funding mitigation projects by phase, similar to the manner in which HMGP is administered, but FEMA has indicated on NAC calls that this option was not statutorily allowed.

## **CONSEQUENCES OF PROBLEM: LARGE MITIGATION PROJECTS REMAIN UNFUNDED DESPITE BRIC AND APPLICANTS ARE DISINCENTIVIZED TO PURSUE ADVANCE ASSISTANCE (AA) DESPITE ITS AVAILABILITY**

The AA cap is too low to provide funding for the types of conceptual design studies that are required for large mitigation project grants. The AA funding is not linked to eventual funding of the full mitigation project. These two facts conspire to undermine the desire for grantees and applicants to think “big” when it comes to large, lifeline, resiliency investments. This will be a critical problem in years when DRRA funding allows the total BRIC funding to exceed perhaps \$600 million. The utility (risk reduction) to the Nation of funding a large number of \$10 million grants could possibly be lower than funding a smaller number of larger projects.

What grantee or sub-applicant will seek to conceive, design, and implement a large lifeline resiliency project when AA, if awarded, does not cover the full costs of large project and there is no strong likelihood that the full project will be funded? Designing and delivering larger, lifeline, resiliency projects is where SLTTs need help from the federal government. This is also one of the critical missions of the BRIC program. Adequate funding, both for AA and for large, lifeline, resiliency projects is crucial to BRIC success.

## **POTENTIAL SOLUTIONS**

### **Eliminate the Project Funding Cap and Tie AA to Project Funding**

**Recommendation 19-28:** The Administrator should eliminate or significantly raise the cap on AA for mitigation projects and provide a preference for AA-funded projects to receive project funding in subsequent years.

#### **Anticipated Impact**

This would allow the funding of more, large value mitigation projects in the competitive portion of the funding and it would remove a disincentive that currently exists for grantees and sub-applicants in applying AA funding to the design and implementation of large lifeline mitigation projects.

#### **Cost, Time, and Other Implementation Considerations**

This would provide adequate, needed funding for designing complex mitigation projects and incentivize participation in the AA program, which would improve the quality of mitigation projects and reduce disaster risk.

## **CURRENT STATE: FEMA IS DENYING MITIGATION PROJECTS DUE TO USE OF AN OUTDATED BENEFIT COST ANALYSIS (BCA) DISCOUNT RATE**

FEMA’s current BCA methodology uses a discount rate from 1992 (7%) which results in many valid mitigation projects failing to win approval and receiving funding. To estimate a passing benefit cost ratio

of a mitigation project in current dollars, FEMA's default methodology divides the discounted the stream of mitigation project benefits (damages averted) by the discounted stream of construction costs for the mitigation project. If the resulting ratio of discounted benefits to costs is greater than 1, the project passes. If not, the project fails the Benefits Cost Ratio (BCR) test. The future values of the benefits and the costs are discounted to the present using specific percentage call a discount rate. The stream of benefits lasts over the life of the investment (e.g. 30 to 50 years). The stream of costs lasts over the life of the construction of the project, typically 3 to 10 years, depending on the size of the project. FEMA's current methodology is required to use a 7% discount rate to discount both the benefits and construction costs back to the present value.

Using the artificially high discount rates in the FEMA BCA methodology limits FEMA's ability to approve mitigation projects that are, in fact, cost-effective. For an example of the impact of the 7% discount rate compared to a 3% discount in the present value of the benefits recently completed in NYC on a very large mitigation project, see page 6 of the report.<sup>20</sup> The current FEMA discount rate (7%) was last changed in 1992, in a time of much higher interest rates on all debt, include federal debt. The current FEMA discount rate (7%) is more than twice the prevailing federal market rates (1%-3 %, depending on the term of the debt).

## **DESIRED STATE: FEMA USES A LOWER DISCOUNT RATE THAT REFLECTS MITIGATION BEST PRACTICES**

In order to fund the larger and more comprehensive projects that FEMA has said they want to fund, FEMA should use a reasonable discount rate in the FEMA Cost Benefit Analysis methodology far below the current 7% rate. This reasonable discount rate could be at 2%-3% (US 30-year t-bond) or even as low as -1%. This would align with the current interest rates on Federal long-term investments or with the practice of other countries that are aggressively addressing natural hazard mitigation and would much more accurately reflect the future value the benefits of these mitigation projects.

## **CONSEQUENCES OF PROBLEM: VALID MITIGATION PROJECTS FAIL THE BCA COST REASONABLENESS TEST**

Using an artificially high discount rate means that many cost-effective mitigation projects do not achieve a high enough present value of benefits to be deemed cost effective. The benefits that these projects will achieve in the future, in terms of reduced damage to public assets, reduced loss of life, and reduced economic disruption are, because of the very high discount rate that FEMA uses, not reasonably valued. When the benefits from each year in the future are discounted back to the current year value, the unrealistically high 7% discount rate devalues them too aggressively relatively to the

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<sup>20</sup> East Side Coastal Resiliency, Benefit Cost Analysis Executive Summary," New York City Government, August 2019, accessed October 31, 2019, [https://www1.nyc.gov/assets/cdbqdr/documents/amendments/ESCR\\_BCA\\_082019.pdf](https://www1.nyc.gov/assets/cdbqdr/documents/amendments/ESCR_BCA_082019.pdf)



shorter duration up-front costs. FEMA should use a more reasonable discount rate to truly drive effective mitigation investments Nationally.

## POTENTIAL SOLUTIONS

### Require Use of Annually Updated Interest Rates in FEMA BCA Calculations

**Recommendation 19-29:** The Administrator should require the use of annually updated discount rates in BCA calculations, as published in Appendix C of OMB Circular A-94. This recommendation may require coordination with OMB to determine the proper application of updates to Circular A-94.

#### Anticipated Impact

This simple change would allow the funding of large numbers of mitigation investments that are currently deemed not cost effective because of the use of a discount rate that is out of step with current market rates for federal investments. Implementation of this change would have a tremendous impact on the FEMA goal of a mitigation moonshot.

#### Cost, Time, and Other Implementation Considerations

This proposal would result in an increase in the number of mitigation projects determined to be cost effective under the FEMA BCA methodology. It would make all the other recommendations included in this submission more critical, particularly those addressing the need for great mitigation funding.

## **Immediate Needs Recommendations**

### **CURRENT STATE: MASS SHELTERING AND HOUSING IN URBAN AREAS REMAINS A CHALLENGE AND THE STEP PROGRAM WAS AN EFFECTIVE SOLUTION**

Emergency sheltering after disasters is a consistent challenge nationally. In densely populated urban areas, the only option available may be for people to shelter-in-place in their homes. The critical goals of emergency sheltering are to protect the health and safety of disaster survivors, to maintain their presence in their own communities, thereby increasing the speed with which both the disaster survivor families and their communities are able to recover from the disaster. In dense urban areas, a STEP-like program has been the only effective tool because manufactured housing, hotels and cruise ships have proved ineffective.

### **DESIRED STATE: ALL JURISDICTIONS HAVE ACCESS TO THE NECESSARY HOUSING TOOLS**

Local governments need a range of options suited to the local circumstances in order for the community to effectively recover, particularly in the areas of the country that experience winter's freezing temperatures. A STEP-like program, while perhaps not appropriate in all jurisdictions, is vital to many areas to ensure that all residents are provided adequate emergency sheltering options, protecting health and safety after disasters.

### **CONSEQUENCES OF PROBLEM: SOME URBAN JURISDICTIONS FACE CHALLENGES IN DISASTER HOUSING WITHOUT ACCESS TO A STEP-LIKE PROGRAM**

To convey the serious need for the STEP and its success, we reviewed program results of NYC's Rapid Repairs program. As a result of Super Storm Sandy, over 150,000 city residents had homes that suffered significant damage, threatening their displacement. Tens of thousands of families stayed in their damaged homes despite the onset of winter, with freezing temperatures, and unsafe living conditions threatening their health and safety.

In NYC's Sandy disaster response, the normal mass sheltering options available were incapable of delivering the capacity needed. FEMA recognized this as demonstrated in its decision, despite the numerous other options, not to initiate its own housing mission. This was likely due to the expense and complexities associated with a housing mission in a complex urban environment.

This crisis led the city and FEMA to launch the NYC Rapid Repairs Program under FEMA's STEP Pilot Program. Rapid Repairs successfully restored essential services (power, heat, and hot water) to approximately 20,000 homes within 3 months of construction start (roughly 5 months after the disaster declaration), allowing 54,000 Sandy survivors to shelter safely in their own homes. Rapid Repairs was

successful and a cost-effective mass sheltering solution. This led to other jurisdictions implementing the STEP Program since Sandy in the following disasters by the following applicants:

- DR-4085-NY (City of New York, Nassau County, and Suffolk County)
- DR-4086-NJ (State)
- DR-4277-LA (State)
- DR-4332-TX (State)
- DR-4337-FL (Monroe County)
- DR-4339-PR (Territory)
- DR-4340-VI (Territory)
- DR-4393-NC (State)

Rapid Repairs cost the city \$640 million, about \$30,000 per household, most of which was reimbursed by FEMA (90% cost share). Analyses completed by NYC and FEMA in 2013 validated the reasonableness of the Rapid Repair Program cost, even at the final unit cost which was more than the initial \$10,000 cap on approved costs. At the time, FEMA had solicited a housing repair contract from the FEMA TAC, exploring a FEMA managed housing mission. Due to the uncertainties related to the work in the City's dense neighborhoods, and other factors, the independent cost estimate at the time was \$90,000 per unit, roughly three times NYC's actual cost. Also, FEMA estimated the cost per family for a manufactured housing unit (trailer) at that time to be over \$173,000 per family, almost six times the NYC cost per family. Beyond the cost issue, there is no room to install 20,000 manufactured housing units in NYC.

An analysis was also done of the six-month cost per family of a hotel stay at the Government Services Administration rate for a NYC hotel of \$263/night; the estimate was over \$980 million, about 150% of the NYC Rapid Repair costs. Although NYC is a jurisdiction with a large hotel industry, hotel room availability is also very scarce and very expensive, particularly in the fall. The Rapid Repairs Program provided critical emergency sheltering in a dense urban environment at a cost that was far below the other options available. Failure to maintain some version of the STEP Program means FEMA is turning away from a promising, demonstrably practical, and cost-effective mass sheltering option for large populations of disaster survivors in urban areas.

## POTENTIAL SOLUTIONS

### Amend Legal Authorities to Allow a STEP Version 2 Program in Jurisdictions with Mass Sheltering Needs (in Urban Areas)

**Recommendation 2019a-30:** The Administrator should work through the legislative change process to develop amendments, or changes, to authorities in Section 403 of the Stafford Act related to emergency sheltering, and other authorities, which would enable the authorization of a STEP Version 2 program for selective deployment by FEMA in disasters and regions where it was deemed the best available solution to mass sheltering needs.

### **Anticipated Impact**

Nationally, FEMA, grantees, and subgrantees need a mass sheltering program designed to be effective in dense, urban areas. FEMA's Sheltering and Temporary Essential Power (STEP) Pilot Program allowed disaster survivors to shelter in place, in their homes, in their own community. This is the key outcome that all emergency managers want from an emergency sheltering program. In most high-density urban areas, particularly in the northeast, other approaches to mass sheltering (hotels, manufactured housing, cruise ships, and mass/congregate shelters) are ineffective or not practical. Finally, the STEP Program has proven to be cost effective when compared to these other mass sheltering options.

### **Cost, Time, and Other Implementation Considerations**

This proposal would likely take some time and effort on the part of FEMA's Office of the Chief Counsel, and additional FEMA resources to work through the legislative process, if statutory changes are required to enable a new STEP Version 2. However, until this recommendation is implemented, FEMA has withdrawn the only mass sheltering program that is likely to be effective in very dense urban areas.

## **CURRENT STATE: DETERMINATION OF A COMMUNITY FLOOD IN PROGRESS DESIGNATION & RESCINDING OF SUCH DESIGNATION IS CHALLENGING**

The determination of a Flood in Progress (FIP) is not consistently designated within NFIP communities. Information as to a FIP designation is not widely advertised nor is there a method for establishing a FIP date prior to an incident. These dates are also not established uniformly to a community, to include an established criterion for when a FIP ends. Moreover, the information is not widely accessible to citizens, realtors, and insurance agents, etc. Generally, insurance adjusters make the FIP determination upon visiting a site after an insurance claim is filed.

The Biggert-Waters Flood Insurance Reform Act of 2012 established a FIP definition. Prior to this change, the date a structure was impacted by flood waters was the criteria of flood impact to the structure.

A FIP as currently defined is a FIP on the earlier of either:

1. The date the community in which the insured property is located first experiences a flood as defined in this policy; or
2. The date and time of an event initiating a flood that directly or indirectly affects areas downstream or in a floodway and ultimately results in the damage to the insured property. Events that may initiate such a flooding event include, but are not limited to, the following:
  - a. A spillway is opened;
  - b. A levee is breached;
  - c. Water is released from a dam; and
  - d. Water escapes from the banks of a waterway (stream, river, creek, etc.).

3. The applicability of this exclusion will be evaluated upon the assertion by a policyholder of the right to be paid for a loss under this policy.

According to: SEC. 100227. FLOOD IN PROGRESS DETERMINATIONS.

(a) REPORT.—(1) REVIEW.—The Administrator shall review—(A) the processes and procedures for determining that a flood event has commenced or is in progress for purposes of flood insurance coverage made available under the National Flood Insurance Program; (B) the processes and procedures for providing public notification that such a flood event has commenced or is in progress; (C) the processes and procedures regarding the timing of public notification of flood insurance requirements and availability; and (D) the effects and implications that weather conditions, including rainfall, snowfall, projected snowmelt, existing water levels, and other conditions, have on the determination that a flood event has commenced or is in progress.

(2) REPORT.—Not later than 6 months after the date of enactment of this Act, the Administrator shall submit a report to Congress that describes—(A) the results and conclusions of the review under paragraph (1); and existing water levels, and other conditions, have on the determination that a flood event has commenced or is in progress.

FEMA should use this information to clearly define processes to clarify and make consistent when a FIP designation is in place within a specified NFIP Community and when the designation is rescinded.

## **DESIRED STATE: COMPLETE CLARITY AROUND FIP DESIGNATIONS**

Clearly establish a FIP designation for a specific NFIP Community and establish a specific end date for a FIP. Provide a public platform/mechanism to allow individuals to determine if a FIP is in effect for their specific NFIP Community.

## **CONSEQUENCES OF PROBLEM: HOMEOWNERS ARE UNABLE TO APPROPRIATELY MANAGE THEIR RISKS**

Currently, separate insurance companies who have insurance adjustors working in the various flood areas or impacted “community” make their own determinations as to when a FIP begins. There is no clear FIP determination indicator – several factors are used by the various individual companies to determine a FIP date. One example of such an indicator used by an insurance company recently was a Facebook Post. Different companies come up with different FIP dates for the same community, therefore it lacks consistency from homeowner to homeowner and agency to agency.

There is also no website or mechanism for a citizen, local floodplain coordinator, State NFIP coordinator, FEMA staff, realtor, or insurance agent selling a flood insurance policy to learn if there is a current FIP designation in a specific NFIP Community.





A FIP is not concluded until an insurance adjuster is at a property working a specific incident claim. Therefore, if the policyholder then experiences a flooding event (after the 30-day waiting period of a new policy) they are told by the insurance company that their flood insurance claim is denied as there is a current FIP designated already somewhere within the community they reside. Given this, it is possible people may purchase property, obtain a flood insurance policy, and not know a FIP is possible within the community until after they have sustained damages and filed a claim. This leads to uninformed individuals potentially purchasing property under false insurance coverage pretense. There is also no clearly established date as to when a FIP designation ends and no public facing website which would allow individuals to determine if a FIP is in effect.

## POTENTIAL SOLUTIONS

### Establish a Consistent FIP Designation for NFIP Communities

**Recommendation 2019a-31:** The Administrator should ensure there are clear administrative rules in place which would ensure FEMA determines an official Flood in Progress designation and end date determination, so the specific date is consistent for all policies in the impacted NFIP Community. The policy is a federally backed flood insurance and, therefore, there should be a consistent FIP date established, as well as an end date determination used by all companies working within that impacted NFIP Community.

#### Anticipated Impact

This recommendation would facilitate consistency at the NFIP community level for FIP designations and time periods. An insurance adjuster should not make such a determination at the time of a claim. An educated public should be allowed to make more informed decisions.

#### Cost, Time, and Other Implementation Considerations

The principle cost and time requirements for this recommendation would be for FEMA to review current administrative rules and establish a process by which FEMA establishes a FIP designation and subsequent end date. This process appears to have been a requirement of the Biggert-Waters legislation when FIP was established.

### Review and Revise Current Flood Insurance Policy Correspondence and Practices

**Recommendation 2019a-32:** The Administrator should review and revise flood insurance policy owner correspondence to ensure these clearly explain a FIP designation and advise the policy owner where to find a FIP designation. Letters should also be sent to policy owners when a FIP designation is put in place within an NFIP Community. Copies of this correspondence or a separate letter advising the State NFIP coordinator should also be sent; as the State coordinator can ensure local floodplain administrators are aware of the FIP. Correspondence should also be sent to individuals when a FIP designation is lifted for a community.

### **Anticipated Impact**

This recommendation would facilitate proper communication of a FIP determination to policy owners and the State NFIP coordinator so proper notifications to the local NFIP administrator can be made.

### **Cost, Time, and Other Implementation Considerations**

The principle cost and time requirements for this recommendation would be for FEMA to review and revise current flood insurance policy owner correspondence and draft additional letters as needed. Annually, all policy owners receive a renewal notice which must be signed and returned with payment. General FIP language could be added to these letters so the policy owner is better informed. There would be a cost for the FIP letters being sent to impacted policyowners when a FIP designation is put in place.

### **Develop a Public Facing Mechanism for FIP Determinations**

**Recommendation 2019a-33:** The Administrator should develop a public facing website to advise citizens of flood in progress communities. Perhaps the newly developed NFIP data system with Pivot could include this public information feature.

### **Anticipated Impact**

This recommendation would facilitate proper public communication of a FIP for a specific NFIP Community. This would allow potential buyers to verify if a FIP is in place prior to making a purchasing decision.

### **Cost, Time, and Other Implementation Considerations**

As with the other recommendations in this section, FEMA would need to review what systems currently in place could be used for this information depository. There would be a cost to adding this feature to a current system, such as the Pivot or perhaps the Flood Insurance Rate Map site could be used.