



**National Advisory Council  
Report to the FEMA Administrator  
*November 2020***



**TABLE OF CONTENTS**

Letter from the NAC Chair.....5

Executive Summary .....6

Preamble.....9

Vision .....10

Focus on Equity .....11

    Use Equity as the Foundation .....12

        Problem: Programs are Not Targeted to Those in Greatest Need .....12

        Recommended Solutions .....13

            01 – Create an Equity Standard.....13

            02 – Direct Mitigation and Preparedness Funds to Improve Equity in Outcomes .....14

    Understand and Build Social Capital in Underserved Communities .....15

        Problem: Ineffective Program Delivery Limits Addressing Long-Term Solutions .....15

        Recommended Solutions .....16

            03 – Improve Cultural Awareness in Employees .....16

            04 – Ensure the FEMA Workforce Reflects the Populations It Serves .....17

            05 – Measure Social Capital and Work to Increase It.....18

            06 – Include Social Capital in Training Programs .....18

    Address Native American Tribal Concerns .....19

        Problem: Emergency Management in Indian Country Continues to Limit Effective Response and Recovery .....19

        Recommended Solutions .....19

            07 – Understand Emergency Management Capacity in Tribal Nations .....19

Focus on Outcomes.....20

    Adopt a Common Language for Risk and Outcomes.....20

        Problem: Funding Does Not Buy Down Risk Most Effectively, Efficiently and Equitably, and Is Frequently Either Redundant or Missing in Key Areas .....20

        Recommended Solutions .....21

            08 – Introduce Common Data-Driven Models for Risk Across SLTT and Federal Levels .....21

            09 – Use a Streamlined Funding Approach that Aligns to Mission Goals.....22

    Educate Leaders for Better Outcomes .....23

        Problem: The Function of Emergency Management Is a Mystery to Many That Rely on Emergency Management in Times of Crisis .....23

        Recommended Solutions .....23



- 10 – Educate Incoming Political Leadership About Emergency Management.....23
- 11 – Train Emergency Managers to Educate Leaders.....24
- Embrace Data Science for Better Outcomes .....25
  - Problem: Lack of Data Science Resources .....25
  - Recommended Solutions .....26
    - 12 – Enhance Partnerships with Leaders in Research and Data Science in other Federal Agencies, the Private Sector and Academic Research University Programs .....26
    - 13 – Invest in a FEMA-Wide Data Management System to Track and Monitor Outcomes .....26
    - 14 – Develop Scientific and Technology Professional Development Training for Emergency Management .....27
- Focus on Coordination.....28
  - Continually Improve Coordination .....28
    - Problem: FEMA and the Emergency Management Community Nationally are Primarily Reactive 28
    - Recommended Solutions .....29
      - 15 – Review FEMA Headquarters Versus Regional Responsibilities .....29
      - 16 – Establish FEMA as a Cabinet-Level Agency Reporting Directly to the President.....30
      - 17 – Establish Unified Coordination .....31
- Resource Management and Supply Chain.....32
  - Problem: Resources Are Either Duplicative or Inadequate .....32
  - Recommended Solutions .....33
    - 18 – Create a National Supply Chain Strategy .....33
    - 19 – Enhance National Disaster Supply Chain Support & Coordination .....34
    - 20 – Expand Disaster Supply Chain Coordination .....34
    - 21 – Support Establishing SLTT and Private Sector Stockpiles .....35
    - 22 – Increase Private Sector Supply .....36
    - 23 – Better Use Mutual Aid and Shared Resources .....36
- Focus on What Works.....37
  - Manage Consequences, Cascading Effects, and Lifelines .....37
    - Problem: Emergency Managers Are Not Trained to Look for and React Properly to Cascading Impacts Within Lifelines .....37
    - Recommended Solutions .....38
      - 24 – Expand FEMA Lifelines to Include Cascading Effects .....38
      - 24a – Establish an Interactive, Intuitive, Consequence Management Tool for SLTT Stakeholders to Identify Their Lifeline and Cascading Disaster Vulnerabilities .....38
      - 24b – Train for Consequence Management and Cascading Impacts .....38



24c – Address Cascading Impacts of a Cyber Attack .....	39
24d – Improve Public and Private Sector Coordination on Critical Lifelines .....	39
Foster Innovation in Technology and Collaboration .....	40
Problem: Legacy Methods of Technology Adoption, Acquisition, and Solution Development Hamper the Mission .....	40
Recommended Solutions .....	42
25a – Create an Expeditionary Entrepreneurial Team for Technology, Collaboration, and Acquisition Innovation .....	42
25b – Partner with Industry to More Effectively Use Technology by Launching a Recurring FEMA Challenge to Inspire the Creation of Transformative Solutions .....	43
2020 Afterword .....	45
Acknowledgements .....	46
NAC Geographic Representation .....	49
Glossary .....	50
References .....	51



## LETTER FROM THE NAC CHAIR

November 30, 2020

I am pleased and honored to present this report from the National Advisory Council (NAC) to Administrator Gaynor. The recommendations in this report represent a consensus of the members of the NAC on some of the most critical challenges facing the field of emergency management. In the last year, the NAC has continued their important work despite emergency management professionals across the nation battling on the front lines of COVID-19, responding to six hurricanes which made landfall and wildfires that devastated communities in the west.

The strength of the NAC is in our diversity of members and a commitment to seeing equitable, coordinated, and outcome driven solutions for the field of Emergency Management. This report confronts these issues directly and represents the NAC's final consensus on them.

In recent years, the NAC has presented their recommendations in a memorandum format, concisely delivering issue statements and recommendations to the Administrator. However, by shifting to a more thorough report format, we have included more context, anticipated impact, and implementation considerations.

Sincerely,

A handwritten signature in blue ink, appearing to read "Nim Kidd".

Nim Kidd

Chief, Texas Division of Emergency Management

Vice Chancellor, Texas A&M University System



## EXECUTIVE SUMMARY

In November of 2019, the National Advisory Council was, for the first time, charged with questions that would take a full year to answer instead of the traditional six months. Administrator Gaynor asked the NAC to address the following:

1. What should be the future vision of emergency management and FEMA in 2045? How should FEMA and its non-federal partners address an outlook of increasing disasters and downward pressure on federal funding?
2. Given the downward federal budget pressures and upward natural hazard trends, what are the best ways to build capacity in response, recovery, preparedness, and mitigation at the local, tribal, territorial, and state levels?
3. What actions should FEMA take to ensure marginalized and vulnerable communities can recover quickly? How can FEMA better structure its programs to meet the needs of the most vulnerable populations, especially women and children?

After receiving the charges, the NAC scheduled meetings to collaborate with subject-matter experts from a variety of academic disciplines, to discuss a report format, and to develop a report schedule. By March the first worldwide pandemic since 1918 had taken a foothold in the United States and began to spread nationwide, triggering an unprecedented national emergency response. In May of 2020, widespread protests and rioting began, sparked by the death of George Floyd. In July of 2020, the wildfire season began in California and fires grew to historic proportions, straining state emergency response capabilities, while triggering mass evacuations and rolling blackouts to preserve life and critical infrastructure. Simultaneously, the Atlantic hurricane season broke records early with two named storms in May before the 'official' season began on June 1. The season ultimately broke many records, including the most named storms. The Pacific storm season also broke records, most notably with Typhoon Goni becoming the strongest landfalling storm in recorded human history with sustained winds of 195 miles per hour.

Administrator Gaynor's charges, not only the need for a long-term vision but also the need to build capacity nationally and to truly address equity, began to seem truly prescient. Instead of a 25-year plan, the NAC is describing actions we must take now if we are to be successful in emergency management for future events. The NAC decided to answer the charges in a four-part report as follows:

### Focus on equity

Emergency management is part of the social safety net across all phases from response to recovery. As such, first responders do not rescue people who can evacuate themselves, they only rescue people who need help. Recovery programs, however, seem to do just that. They provide an additional boost to wealthy homeowners and others with less need, while lower-income individuals and others sink further into poverty after disasters. In 2045, emergency management is equitable across the full spectrum, including preparedness, recovery, and mitigation, with resources going to those who need them.

### Focus on outcomes



By embracing data-driven and risk-informed decision-making, we envision that FEMA is innovative in the allocation of funding, development of guidance and programs, and in the establishment of priorities. FEMA uses scientifically validated principles to guide decision-making and investments, where research is embedded at all levels of the disaster management cycle. FEMA will prioritize funding based on risks as determined locally, as well as by the DHS National Risk Management Center and by the Department of Energy Defense Critical Electric Infrastructure.

### **Focus on coordination**

We envision a collaborative FEMA that coordinates with the whole of government, private sector, and community- and faith-based organizations to harmonize actions, leverage programs, and marshal the expertise of various entities in supporting the resilience of communities and to effectively manage disasters and large-scale emergencies. In 2045, FEMA will be a cabinet-level agency, with its primary focus on mitigation activities and catastrophic risks such as the advancing impacts of climate change.

The field of emergency management has matured substantially to include schools of Emergency Management at many universities across the U.S. and internationally, including research-focused universities. There should be collaboration across fields such that emergency management is included in public health, planning, and other related disciplines and that public health, planning, and other disciplines are included in emergency management. These universities are producing a cadre of diverse and highly skilled emergency managers.

### **Focus on what works**

We envision a nimble and adaptive FEMA that expands its intellectual assets and professionalized human capital to fully address existing and emerging threats impacting the nation, including climate change, cybersecurity, and terrorism, among others. FEMA does this by partnering with research universities and industry innovators, as appropriate. FEMA continues to use lean and agile methodologies, reduce waste, inefficiency, and unnecessary barriers and delays, leverage emerging technologies and artificial intelligence to improve response strategies and reduce the cost of inefficient systems.

For the year 2045, we envision an equitable, collaborative, innovative, and adaptive FEMA that leads, along with partners and SLTTs, and provides them with the tools, resources, and assets to address existing and emerging threats in a cost-effective manner. This should be achieved within the framework of a federally supported, state and tribally managed, and locally executed disaster management architecture. FEMA has effectively built capacity, especially in local jurisdictions, by focusing on collaborative planning to build resilient communities. This leaves FEMA free to deal with future catastrophic and black swan events like the COVID-19 pandemic.

When we envisioned the future of Emergency Management and FEMA in 2045 it became abundantly clear from our research and the unfolding events of 2020 that Equity was the lynchpin to tie together our recommendations. Research already proves that disasters disproportionately affect those who are already socio-economically marginalized in a community, subjecting them to even greater depths of poverty. Current experience with the COVID-19 pandemic has revealed that these same marginalized communities also suffer disproportionately higher morbidity and mortality rates as well. Events in 2020, including the nationwide protests and unrest, also made it clear that this inequity will eventually lead to



social disruption. Social Capital is one of the building blocks of community resilience both during and after any disaster and, while it is difficult to measure currently, it is one of the reasons some disadvantaged communities are able to effectively deal with and recover from disasters while others struggle.

In addition to using a foundation of equity and increasing social capital, the NAC believes that to achieve our vision of FEMA 2045 it is necessary that every level of government and all industry sectors should share and be able to speak the same risk language. If, in 2045, we are to manage decreasing funding across increasing disasters, we need to be able to work with other agencies, both governmental and private. If we speak different languages, including around risk, we will be unable to work together to analyze and discuss risk, resilience, and recovery.

By 2045, FEMA's programming and funding should use innovative methods to incentivize state and local agents to mitigate the risks they are most likely to face. To achieve this, post-disaster recovery funding should be at least partially dependent on implementation of disaster mitigation protocols at the state and local level. Communities should be continually working to address future climate risk and maximize recovery funding to become stronger and prevent repetitive losses. Ideally, such protocols would be tailored to localized risks. For example, wildfire recovery in California should be conditioned upon appropriate zoning decisions that mitigate risk of loss in areas susceptible to wildfires. Similarly, hurricane relief in Florida should be conditioned upon mitigation practices, such as coastal setbacks that rely on modernized and accurate flood maps. Robust mitigation policies at the state and local level are critical to reducing risk, but also pave the way for a stable and healthy insurance market. Further, FEMA's funding incentives and research efforts should be conducted in concert with the insurance industry, whose market pricing should appropriately reward individuals and communities who mitigate risks from localized hazards.





## PREAMBLE

2020 has been a defining year for U.S. resilience and emergency management. While the trendline of declared national disasters has steadily increased, 2020 marks an entirely new pattern. Like the rest of the world, the United States is facing a pandemic the likes of which has not been seen in 100 years. With the rapid spread of COVID-19 impacting communities across the nation, disaster declarations have been triggered in all fifty states and territories. In addition, the 2020 Atlantic hurricane season was record breaking in its own right, with 30 named storms, of which 12 made landfall in the contiguous United States, breaking the record of nine set in 1916. Further, with six hurricanes making landfall, 2020 tied 1886 and 1985 for the most in one season.

The 2020 fire season in the western United States has also been the worst recorded. Communities now may be forced to redefine the roles of public-private critical infrastructure, as electrical utilities weigh financial ruin on the one hand and turning off the lights for millions of people to mitigate fire risk on the other. This redefines how community resilience and, thereby, emergency management must evolve for the country and our citizens, particularly the most vulnerable.

When considering the landscape of risk across the United States, emergency managers are increasingly faced with catastrophic disasters that involve widespread physical damage as much as they may be faced with "blue sky" disasters like COVID-19 or consequences from a cyber-attack that involve no visible damage to the physical infrastructure. The confluence of tangible and intangible risks, as well as the evolving demands facing the risk management professional, places FEMA at the center of nothing short of a national resilience transformation at an unprecedented scale. Investments in resilience however, accrue, unlike traditional disaster response. This allows us, over time, to claim a national return on these investments in the form of true resilience to complex risks, irrespective of their cause, severity or onset.

The links in our national chain of resilience, however, are increasingly frayed and call for efforts from the local to the national levels to strengthen our safety nets. Emergency management is a last line of defense. Yet, all too often, the depth and breadth of the disaster risk landscape quickly overwhelms state-level first response capabilities, which often finds first responders themselves in the line of sight of an increasingly turbulent world. Strengthening national resilience will require the emergence of a new modus operandi, wherein the sum of the parts along the resilience value chain are more closely linked - beginning at the household level and extending all the way up to Federal-level coordination through an evolved and future-proof FEMA. The charges that were handed down to FEMA's National Advisory Council, the 35-person multidisciplinary advisory body that was formed after Hurricane Katrina, demonstrates the agency's understanding of the case for change.

Evolving an agency like FEMA, with more than 21,000 dedicated professionals, along with the thousands of emergency management professionals across the country, is not an easy assignment, yet, it is necessary. The same holds true for placing FEMA at the nexus of technology-powered innovation that ensures every American, everywhere, has access to real-time threat and hazard information and forms part of a national early alert system that can support infectious disease contact tracing as much as geo-referenced natural hazard warnings. Rolling these tools out at scale in the middle of a disaster, as was the effort in combating COVID-19, is no more useful than trying to buy insurance when the proverbial house is on fire. These types of links, along with the community equity



that builds trust in emergency response as a vital national institution, must be in place pre-disaster and cannot be rolled out while the waters are rising, fires are raging, and response resources are mobilizing. Rather, the case for change, along with the future-state recommendations outlined in this report, call for a comprehensively enhanced emergency response model; one that, when combined with household, community, local, tribal, territorial, state and federal resources, can make the United States a model for a national resilience framework.

## VISION

At the November 2019 NAC Meeting, Administrator Gaynor asked the NAC to describe a Vision for the Emergency Management Community for 2045. What is the north star toward which the field should work for the next 25 years? Here is the NAC response:

By the year 2045, Emergency Management achieves equitable outcomes through a federally supported, state- and tribally- managed, and locally executed approach. FEMA is a transformational force, collaborating and innovating to address existing and emerging threats, using financially prudent and efficient outcome-focused methods. Emergency Management unites the whole community and coordinates regionally to harmonize actions, leverage programs, and marshal expertise. FEMA supports communities to equitably build resilience and effectively manage disasters and large-scale emergencies, both foreseen and unforeseen. Embracing data-driven and risk-informed decision-making, FEMA improves funding allocations, guidance development, priorities establishment and program effectiveness. FEMA expands its intellectual assets and professionalized human capital, in a nimble and adaptive fashion, to fully address threats impacting the nation.

FEMA would be best supported if the national emergency management framework were to embrace the following guiding vision, mission and principles.

- **Vision 2045:** Collectively strengthening every link in the chain of national emergency management, making the United States and its citizens completely prepared, risk-aware and resilient.
- **Mission 2045:** Coordinating a nationally effective real time identification, management, mitigation, response and recovery framework for existing and emerging threats to the United States, its people, their lives and livelihoods.
- **Guiding Principles:** Equity, Resilience, Efficiency, Professionalism, Accountability, Science-based, Data-driven, Collective Endeavor



## Focus on Equity

The core definition of equity is to provide the greatest support to those with greatest need to achieve a certain minimum outcome. It is separate from equality, which is providing the same resources to everyone regardless of need. One of the core tenets of emergency management is to work to stabilize and heal communities from the disruption caused by disaster. As such, it is important to recognize the role that equity plays in communities' ability to mitigate, prepare, respond, and recover from a disaster, and by extension, FEMA's role in supporting that effort.

While it is not the role of FEMA to dismantle a series of systems that cause inequity, it is within the role of FEMA to recognize these inequities (and the disparities caused by them) and ensure that existing or new FEMA programs, policies, and practices do not exacerbate them. Further, as state and local emergency management agencies are also seeking guidance on how best to incorporate equity-centered principles in their outreach and work, FEMA has an opportunity to serve as a standard bearer.

While it can be difficult to understand concretely, there are immediate adjustments that FEMA can make to incorporate equity in emergency management. In fact, some measures have already been made and can highlight equity-focused policy. As an example, consider repairing a storm-damaged home so that people can get inside. A person without a disability might easily repair damaged front stairs with the typical disaster assistance available, while someone in a wheelchair would require extra funding to install the ramp they would need.

As an equity-focused policy, the Disaster Recovery Reform Act (DRRA) allowed FEMA to provide more money to people with disabilities to make this kind of repair. Prior to this, FEMA legally could only provide the same amount of funding to everyone, irrespective of whether someone needed more funding based on a systemic or structural need. This change - providing more support to people with more need - is an equitable shift.

For disaster preparedness, mitigation, response and recovery to drastically improve in 2045, emergency management must understand equity and become equitable in every approach and in all outcomes. The exacerbated impacts of disasters on underserved and historically marginalized communities across the United States showcases existing inequity. The drastically increased morbidity and mortality rates during the pandemic of elderly people, poor people, and people of color provide a clear example of this.<sup>1</sup> People of color are suffering up to five times the hospitalization rate and two times the death rate of white people. The disparity is even more unnerving when one looks at the rate of children dying. According to CDC, "of the children who died, 78% were children of color: 45% were Hispanic, 29% were Black and 4% were non-Hispanic American Indian or Alaska Native."<sup>2</sup> Underlying issues that result in poor outcomes for already disadvantaged communities must be addressed. We

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<sup>1</sup> Centers for Disease Control and Prevention, "COVID-19 Hospitalization and Death by Race/Ethnicity," August 18, 2020. Accessed November 10, 2020. <https://www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-discovery/hospitalization-death-by-race-ethnicity.html>

<sup>2</sup> Jane Greenhalgh and Patti Neighmond, "The Majority Of Children Who Die From COVID-19 Are Children Of Color," National Public Radio, September 16, 2020, accessed November 10, 2020. <https://www.npr.org/sections/coronavirus-live-updates/2020/09/16/913365560/the-majority-of-children-who-die-from-covid-19-are-children-of-color> :

attempt to capture these underlying issues in summary with the words of Dr. Kathleen Tierney, from her research on the social roots of risk, who writes:

Disasters are often depicted as great levelers, victimizing rich and poor alike. The effects of disasters on populations are anything but random... The disaster vulnerability of individuals and groups is associated with a number of socioeconomic factors that include income, poverty, and social class; race, ethnicity, and culture; physical ability and disability; language competency; social networks and social capital; gender; household composition; homeownership; and age... The same factors that disadvantage members of society on a daily basis also play out during disasters. As disaster researcher Elaine Enarson notes, "the everyday living conditions of the nation's poorest, sickest, most dependent, and most isolated residents directly and indirectly increase the exposure of these residents to physical hazards and to the social, economic, political, and psychological impacts of disaster events."<sup>3</sup>

Under Federal civil rights laws and the Robert T. Stafford Disaster Relief and Emergency Act (Stafford Act), FEMA, State, local, Tribal, and Territorial (SLTT) partners, and non-governmental relief and disaster assistance organizations engaged in the "distribution of supplies, the processing of applications, and other relief and assistance activities shall [accomplish these activities] in an equitable and impartial manner, without discrimination on the grounds of race, color, religion, [national origin], sex, age, disability, English proficiency, or economic status."<sup>4</sup> Civil rights laws and legal authorities remain in effect, and cannot be waived, during emergencies. It is the opinion of the NAC that FEMA does not meet the equity requirements of the Stafford Act.

## USE EQUITY AS THE FOUNDATION

### Problem: Programs are Not Targeted to Those in Greatest Need

Many FEMA programs do not consider the principle of equity in financial assistance relief. Damage assessments are based on property ownership, which immediately focuses on the wealthier parts of a community, and disadvantages renters and the homeless population. The Public Assistance Program most benefits communities that can afford to pay the required match and can navigate the complexities of the contracting agencies. The Individual Assistance Program is more accessible to those with time, income, and access. The National Flood Insurance Program inadvertently assists the wealthier segment of the population by serving only those who can afford to buy flood insurance.

By perpetually assisting larger communities that already have considerable resources, the smaller, less resource-rich, less-affluent communities cannot access funding to appropriately prepare for a disaster, leading to inadequate response and recovery, and little opportunity for mitigation. Through the entire disaster cycle, communities that have been underserved stay underserved, and thereby suffer needlessly and unjustly.

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<sup>3</sup> Kathleen J. Tierney, *The social roots of risk: Producing disasters, promoting resilience*, (Stanford, CA: Stanford Business Books, 2014), 141.

<sup>4</sup> Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93-288, as amended, 42 U.S.C. 5121 et seq., and Related Authorities, § 308.

Research conducted by Howell and Elliott attempted to measure the effects of natural hazard damages and the resulting social and wealth inequalities experienced post hazard. Their findings indicated that, “holding disaster costs constant, the more Federal Emergency Management Agency money a county receives, the more whites’ wealth tends to grow, and the more blacks’ wealth tends to decline, all else equal. In other words, how federal assistance is currently administered seems to be exacerbating rather than ameliorating wealth inequalities that unfold after costly natural hazards.”<sup>5</sup>

FEMA has the opportunity to improve access to and minimize the complexity of programs by looking at how disaster relief programs are delivered and make those changes necessary to distribute support in a more equitable way.

### **Current State: FEMA Provides Funding Based on Damage**

Overall, FEMA assistance is implemented such that people, municipalities, tribes, and states with relatively more resources can access the most program assistance. According to Domingue and Emrich, FEMA Public Assistance is affected by the social vulnerability of counties, which leads to inequitable outcomes in some circumstances.<sup>6</sup> Those who do not have access to existing resources, information or technology are less able to access necessary programs for preparation, mitigation, response and recovery than they should be entitled to, and there is not a clear standard by which to assess need in communities.

### **Desired State: FEMA Provides Assistance Based on Need, Equitably**

No one should become homeless because of a disaster. Children need to be able to continue in school and daycare; enabling their guardians to return to work, thus aiding in community recovery. These things do happen though, and they happen at different rates to different sectors of society. Social and physical determinants of health provide a framework to measure these disaster impacts and determine where gaps exist before, during, and after disasters.

The ultimate goal is that resources and programs are prioritized to communities and individuals with the greatest need. FEMA’s core values of Compassion, Fairness, Integrity, and Respect must lead toward a way of doing business that is more equitable and accessible to all communities, especially those with fewer resources.

## **Recommended Solutions**

### **01 – Create an Equity Standard**

**Recommendation 2020-01:** The Administrator should, by the end of 2021, create an “equity standard” by which to judge whether grants (both disaster and non-disaster) increase or decrease equity over time. The Administrator should identify and incorporate equity-based performance measures into the process and support the importance of breaking data down by race/income/etc., where possible. Also, the Administrator should incorporate social and physical determinants of health, as defined by CDC and Healthy People 2030, into funding decision-making matrices. One option to create this standard would

<sup>5</sup> Julia Howell and JR Elliott. “As Disaster Costs Rise, So Does Inequality.” Socius, January 2018.

<sup>6</sup> Simone Domingue and Christopher Emrich, “Social Vulnerability and Procedural Equity,” American Review of Public Administration 49:8, page 910.



be through a Federal Advisory Committee focused specifically on how to measure equity and apply it in the grants process.

#### Anticipated Impact

This recommendation is to assure disaster preparedness, mitigation, and recovery efforts reach the most vulnerable and at-risk in the community by tying eligibility for funding to goals and metrics. This can most *effectively, efficiently, and equitably* be accomplished by reprioritizing jurisdictions that receive funding based upon specific parameters. The most impactful FEMA funding programs should be identified with goals, metrics, recommended templates established, and a communication plan created for state and local governments in place by December 31, 2021.

The recommendation requires a paradigm shift in the way FEMA prioritizes its program funds and efforts in terms of preparedness, response, and recovery. By shifting their focus to the most historically underserved populations, FEMA can drive significant improvement. Metrics are important not just to measure the need but to measure the outcome. In some places our field puts forth many resources but does not meet the desired outcome.

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

According to Domingue and Emrich, “FEMA should consider a robust characterization of communities utilizing a suite of socioeconomic characteristics rather than depending only on one variable (losses).”<sup>7</sup> Collins and Gerber also discuss a range of mechanisms to allocate funding, including formula-dominated, competitive-dominated, and alternative models. They ultimately conclude that “competition undoubtedly has benefits in many contexts, but our findings suggest that grant contracting is problematic when social equity performance is a salient administrative or policy goal.” As an example of a specific metric, FEMA should consider including the County Health Rankings in the equity standard. These, while not specific to disasters, support the use of social and physical determinants of health.<sup>8</sup>

## 02 – Direct Mitigation and Preparedness Funds to Improve Equity in Outcomes

**Recommendation 2020-02:** The Administrator should assess the current process of distributing mitigation and preparedness funds to SLTTs, to determine which policies, regulations and legislation need to be revised, so the outcomes are more equitable. Grant notices and funding prerequisites should be based upon THIRA/SPR community participation relative to applicable hazard mitigation programs. Funding initiatives would require SLTT emergency management agencies to identify culturally, economically and socially at-risk communities to assure equitable planning, preparedness, mitigation and recovery outcomes. Preparedness and mitigation resources should be targeted to communities that are most in need of federal funding to build resilience in those communities.

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<sup>7</sup> Simone Domingue and Christopher Emrich, “Social Vulnerability and Procedural Equity,” *American Review of Public Administration*, 49:8, page 909.

<sup>8</sup> Carlyn M. Hood, Keith P. Gennuso, Geoffrey R. Swain, Bridget B. Catlin, “County Health Rankings: Relationships Between Determinant Factors and Health Outcomes,” *Am J Prev Med* 2016;50(2):129–135  
Timothy J. Anderson, Daniel M. Saman, Martin S. Lipsky, and M. Nawal Lutfiyya, Anderson et al. “A cross-sectional study on health differences between rural and non-rural U.S. counties using the County Health Rankings,” *BMC Health Services Research* (2015) 15:441.



### Anticipated Impact

The implementation of this recommendation should result in prioritizing underserved and historically marginalized populations and ensuring that they can recover quickly from disaster. The effort should be focused on communities with inadequate access and support, assuring that they can obtain the assistance needed to both recover and become more resilient to future events. All FEMA funding programs should be coordinated, with goals and metrics established and a communications plan for state and local governments in place, by December 31, 2021.

## UNDERSTAND AND BUILD SOCIAL CAPITAL IN UNDERSERVED COMMUNITIES

### Problem: Ineffective Program Delivery Limits Addressing Long-Term Solutions

FEMA does not assist communities that require the most assistance to respond and recover from disasters as well as they could. This is the opportunity gap that can be resolved through dedicated work incorporating equity into emergency management.

It is imperative that FEMA leads the effort to build social capital and equity between communities and their state/local emergency management systems. This can be done by developing consistency in programs and services, while also creating conversations about how to incorporate equity into emergency management. It can be done by embodying equity principles into all of FEMA, and this cascade of actions makes it possible for all individuals to access programs and services.

The three areas of social capital are 1) Trust, 2) Social Norms, and 3) Networks. Emergency management programs at the local, state, and federal level should implement practices and programs that build social capital. Emergency management can attain this by strengthening community networks, enhancing social connectivity and equity, and building trust between community members and emergency management agencies.

Recognizing that FEMA's disaster programs provide direct support to communities after events, there is a need for FEMA employees and reservists to understand how best to support communities based on their needs.

To avoid exacerbating existing disparities through the administration of FEMA programs, the agency should intentionally set clear directives and policies in its governance structure. FEMA should develop and deliver professional education programs to all levels of staff and develop goals and metrics that can be included in funding and evaluation programs.

### Current State: Social Capital is Key to Resilience and is Lacking in Many Communities

Relevant research in community outcomes following disasters clearly indicates a correlation between the degree of social capital in a community and the ability to recover. Overwhelmingly, research illustrates that those communities with higher social capital tend to recover faster and have better overall outcomes, while those with lower degrees of social capital tend to suffer longer and some do not fully recover at all. Communities without a high degree of social capital struggle to effectively, efficiently,

and equitably recover, because resources are prioritized to respond to higher value assets and communities first.<sup>9</sup>

At the same time, emergency management programs do not define, articulate, or emphasize the three critical areas of social capital in their plans, assessments, trainings, and educational programs. Without any emphasis on social capital in these program areas, there is no clear path forward for communities and emergency management agencies to measure their current status, identify gaps, and mitigate the factors that impede increasing social capital.

### **Desired State: Thriving Communities with Deep Social Connections Form the Core of Resilient Regions**

If a community can show that it is resilient and has high social capital, it can attract businesses and people to move and stay there. If a community lacks this, companies and people who can, will move away, weakening the infrastructure and resources available at the community level. Without a change in focus, communities will continue to struggle post-disaster and through recovery. Recognizing the number of counties currently in recovery from a disaster, the overall resilience of communities will be compromised. Additionally, networking is the bridge between systems; local to local, local to state, state to federal, etc. If these networks are broken, failures will occur and communities will be less likely to prepare for what will happen, respond to it when it does, and recover effectively, efficiently, and equitably.

## **Recommended Solutions**

### **03 – Improve Cultural Awareness in Employees**

**Recommendation 2020-03:** The Administrator should deliver, or cause to be delivered, a program for ALL employees, starting with FEMA leadership, on the issues of cultural competence (i.e., disability, religion, ethnicity) and racial diversity, equity, and inclusion, that is provided at initial onboarding and in continuing education. Trainings currently offered to FEMA employees should be reviewed and tested to determine if they are meeting the objectives of developing cultural competence and awareness. If current training is determined to be inadequate, meaning the training does not instill actions that indicate an understanding of diverse cultures and the benefits of diverse cultures, an improved training should be developed and delivered. The training/program provided should be interactive with expectations that employees will grow to not only become aware of cultural differences, but also develop cultural humility. The program could be ongoing, with elements of what is learned built into job expectations, which would be one way to measure the trainings' impact.

The cultural awareness training program should have performance metrics to assess effectiveness and impacts through internal assessments and external feedback. Training should be reinforced before FEMA personnel are deployed for the specific vulnerabilities of the communities they will encounter, as well as through continuing education throughout a FEMA employee's career.

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<sup>9</sup> Daniel Aldrich. *Building Resilience: Social capital in post-disaster recovery*. (Chicago, IL: University of Chicago Press, 2012).



#### Anticipated Impact

This recommendation aims to thread the concept of cultural humility into the workforce at FEMA, which will ultimately guide more informed and effective disaster policies that do not exclude or minimize any demographic or section of a community. A professional development program designed to meet this goal should be in place by July 1, 2021.

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

The Administrator should enforce the mandate that all FEMA employees complete IS-20: Diversity Awareness and IS-368: Including People with Disabilities & Others with Access & Functional Needs by December 31, 2021. However, these established trainings could be determined inadequate to establish a workforce with a strong understanding of different cultures and racial diversities. Training should always be a benefit to an organization, and a workforce with cultural humility will prove to be an asset that is difficult to determine “cost”. This should form a large effort to emphasize the importance of local relationships with all cultures. This is directly related to the recommendations being made regarding Native American Concerns.

### 04 – Ensure the FEMA Workforce Reflects the Populations It Serves

**Recommendation 2020-04:** The Administrator should set clear directives and policies requiring the agency's Human Resources processes to emphasize diversity, equity, and inclusion in all practices at FEMA. This effort involves being explicitly intentional about recruiting an inclusive workforce and providing fair and equitable opportunities for professional development that lead to a diverse leadership and workforce throughout the organization. Additionally, the Administrator should set clear directives to develop an internship and recruitment strategy to become more reflective of the culturally diverse population across the United States other relevant actions include:

- a) Institute cultural awareness as part of FEMA's vision by having diversity and inclusion guide professional development and training for existing employees to bring them up to the level defined.
- b) Leadership needs to have a high-functioning knowledge of equity, inclusion, and diversity.
- c) Provide recommendations on the membership of a taskforce to identify cross-agency membership that should be involved in developing goals and metrics in support of diversity, equity, and inclusion.

#### Anticipated Impact

The impact will be that FEMA will have clear guidance and direction to ensure the workforce reflects the people being served. This will ensure that diversity and inclusion are ingrained in all FEMA regions and divisions.

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

This recommendation aims to make FEMA more reflective of the culturally diverse population across the United States, whom it serves. There are many groups FEMA can recruit from specifically. For example, FEMA should continue its existing efforts to recruit from Historically Black Colleges and Universities (HBCUs), including the Divine Nine and the National Pan-Hellenic Council. FEMA should also work with other similar organizations to ensure they recruit a workforce that truly reflects the populations they serve. A plan to meet these objectives should be developed by July 1, 2021, so that it is completed prior to the 2022-2026 FEMA Strategic Plan.



## 05 – Measure Social Capital and Work to Increase It

**Recommendation 2020-05:** The FEMA Administrator should identify metrics by the end of 2022 to measure how communities are building social capital, including overall trust in institutions, analysis of social norms and social equity, and the strength of networks between partners critical to emergency management. These metrics will include:

1. What does trust look like in emergency management?
2. What networks are most important in emergency management?
3. What social norms are established and practiced?

By 2030, FEMA will include the metrics into emergency management program assessments. By 2045, we will be able to illustrate an increase of 25% in social capital through the developed metrics.

### Anticipated Impact

Increased social capital in communities improves disaster outcomes at all levels. By fostering trust in communities, response operations will be more effective. Community members will be more likely to follow emergency notification instructions and will be more willing to assist others. The understanding of social norms will lead to greater equity in programs and services, and the development of networks will ensure that the right resources and information get to the right place at the right time.

### Cost, Time, and Other Implementation Considerations

The materials and training documents created and delivered to change emergency management programs would drive the major cost of implementing these recommendations. It will also take significant time to effectively build social capital.

## 06 – Include Social Capital in Training Programs

**Recommendation 2020-06:** The FEMA Administrator should integrate the three primary components of social capital (building trust, understanding social norms and cultures, and expanding networks) into all relevant FEMA curriculum by the end of 2022. By 2030, social capital building will be embedded in all relevant emergency management training programs for better overall future outcomes from disaster. By 2045, 95% of FEMA-trained emergency managers will have training in social capital building.

### Anticipated Impact

The impact of addressing social capital within training programs will be a sustained increase in understanding and building social capital at all levels of emergency management. Lack of social capital in communities, and a lack of understanding of those communities by FEMA, will likely lead to failed delivery of FEMA programs. This recommendation aims to solve that problem.

### Cost, Time, and Other Implementation Considerations

The materials and training documents created and delivered to change emergency management programs would drive the major cost of implementing these recommendations. It will also take significant time to effectively build social capital.





## ADDRESS NATIVE AMERICAN TRIBAL CONCERNS

### Problem: Emergency Management in Indian Country Continues to Limit Effective Response and Recovery

#### Current State: A Lack of Understanding of Native American Culture

Native American culture is foreign to many at FEMA, including some who work with tribal nations. The result is that tribes, as well as other underserved and underrepresented communities, do not get the services and support needed to be resilient. The COVID-19 pandemic made this clear, impacting tribal communities much more severely than other communities across the nation.<sup>10</sup> It is a simple issue of fairness, one of FEMA's core values. There are 574 federally recognized tribes in the United States, and they all have individual concerns and challenges. There should be more staff dedicated to tribal issues to improve the apparent cultural divide.

#### Desired State: All FEMA Employees Understand the Communities They Serve

Tribal communities are a central partner in FEMA efforts to increase resilience nationally. FEMA leadership and employees understand the range of considerations, such as technology gaps and technical assistance needs, in these communities and in others throughout the nation and how they impact resilience.

## Recommended Solutions

### 07 – Understand Emergency Management Capacity in Tribal Nations

**Recommendation 2020-07:** FEMA should conduct a thorough survey of emergency management capabilities in Indian Country by January 2022. This survey should gather specific information on the number of full-time emergency management staff in each tribal nation, their grant management capacity, their planning capacity, and other key resilience factors. This recommendation is a reiteration of NAC Recommendation 2018-35 from the May 2018 NAC meeting, which also encouraged greater understanding of tribal capacity and which has not been fully implemented.

One way FEMA could accomplish this is by creating a Native American Working Group staffed with experts who could help gather this information. Members of the working group would include advisors and advocates with a working knowledge of Indian Country, emergency management, and capacity building. Moreover, this group should report directly to the Administrator.

#### Anticipated Impact

Traditional tools like the Threat and Hazard Identification and Risk Assessment or the Hazard Mitigation Planning Process are not broadly used in Indian Country because few tribal nations have the staffing to complete them. This recommendation aims to create a deeper quantitative and qualitative understanding of the challenges facing Indian Country. Without understanding the strengths and

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<sup>10</sup> Centers for Disease Control and Prevention, "COVID-19 Among American Indian and Alaska Native Persons — 23 States, January 31–July 3, 2020," *Morbidity and Mortality Weekly Report*, August 19, 2020, accessed November 16, 2020, [https://www.cdc.gov/mmwr/volumes/69/wr/mm6934e1.htm?s\\_cid=mm6934e1\\_w](https://www.cdc.gov/mmwr/volumes/69/wr/mm6934e1.htm?s_cid=mm6934e1_w)

weaknesses of tribal emergency management programs, FEMA cannot effectively build capacity and increase resilience.

## Focus on Outcomes

### ADOPT A COMMON LANGUAGE FOR RISK AND OUTCOMES

#### Problem: Funding Does Not Buy Down Risk Most Effectively, Efficiently and Equitably, and Is Frequently Either Redundant or Missing in Key Areas

Preparedness funding is not streamlined, is not flexible, is distributed slowly, and grantees cannot extend a period of performance easily. Without understanding a common risk picture, funding goes toward “wants” instead of “needs”. A clear picture of risk empowers communities to buy down the highest risks for an area. Different agencies contribute to a disjointed risk picture, define risk differently, and often cannot share information.

#### Current State: Risk Assessments Do Not Reflect Risk and Do Not Motivate Investments in Resilience

The Threat Hazard Identification and Risk Assessment (THIRA) does not actually capture risk; therefore, it cannot support funding allocations to *effectively, efficiently, and equitably* reduce risk. Other risk assessments that use dollar value damages as the primary metric for risk consequence measurements immediately disadvantage rural communities and others that may not have abundant built infrastructure. Examples include our sovereign tribal partners, historically marginalized, and other underserved communities.

Moreover, there has never been a clear standard set for the required “performance” in Emergency Management Performance Grants (EMPG). While in the early stages of EMPG grant program, significant funding was pushed out, for the past decade funding has mostly declined. Deeper cuts will likely jeopardize resilience.

A small county-level emergency manager, for instance, cannot plan for long-term resilience if funding cannot be counted on year-to-year. Most counties already view the paperwork and required funding match as too large a requirement to justify applying for the funding. If preparedness funding programs are cut, states and local communities with limited emergency management staff will disappear entirely.

Further challenges include difficulty coordinating due to disparities in funding between partners in potential multi-jurisdictional projects, and a lack of good alternative sources of funding, leaving meaningful resilience initiatives out of reach. Instead of planning for emerging risks and issues, emergency management is left with little funding to be anything but reactionary.

The inability to speak with a common risk lexicon makes it nearly impossible to buy down risk, when trying to consider multiple levels of government and working across the private sector as well.

## Desired State: All Levels of Emergency Management Understand Risks and Focus Investments on the Highest Risk Areas

Sustained year-to-year funding is supremely important. With sustained funding, communities can work together to address emerging threats and hazards.

Risk should be local-centric. Risks manifest at the community level, so should be understood and addressed at that level first. Communities should originate the primary risk analysis, which is communicated to the state and then the federal level. The locally executed, state and tribally managed, and federally supported mantra of emergency management should apply to risk analysis, as well.

Every level of government and across industry sectors should share and be able to speak the same risk language. There should be one standard that everyone uses to analyze and discuss risk. This should extend to all National Planning Frameworks and the entire emergency management doctrinal structure (e.g. NIMS, ICS, and other policy frameworks). The risk language that is used should include equity as a foundational concept. The available funding to buy down risk is blended with and from public-private partnerships, which is perhaps supported by the creation of a National Funding Framework, which includes all public and private stakeholders.

## Recommended Solutions

### 08 – Introduce Common Data-Driven Models for Risk Across SLTT and Federal Levels

While FEMA advocates that emergency management priorities should be determined by data and the level of risk posed by a potential hazard, determination of risk is not a focus in the current reactive approach. There are multiple issues in emergency response that cannot be answered by after action reports, hot washes, or ‘lessons learned’ compendiums; however, these remain the standard. While information from these may be helpful, they remain situation-specific and largely anecdotal. A systematic approach to collecting and reporting data that builds causal evidence can more *effectively*, *efficiently*, and *equitably* influence policy change.

**Recommendation 2020-08:** FEMA should promote the use of scientifically validated, data-driven, and standards-based risk models. Further, it should serve as a repository for the dissemination of such data dictionaries, tools, and models for the benefit of SLTTs. FEMA will maintain a dashboard of the latest cutting-edge science/information as the central location in the Federal government for setting a secure, standardized risk assessment requirement.

#### Anticipated Impact

This action should result in FEMA:

- a) requiring SLTTs to have the same risk assessment standards across the United States and throughout all sectors. We recommend adopting industry-standard, science-based and best-available asset and risk management standards. The NIST Community Resilience Planning Guide is one possible example;<sup>11</sup>

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<sup>11</sup> National Institute for Standards and Technology, “Community Resilience Planning Guide for Buildings and Infrastructure Systems Volume 1,” Washington, DC. May 2016.



- b) engaging the Government Accountability Office (GAO) to perform an assessment of all disaster related federal funding and risk assessments to identify overlap and work towards decreasing duplication of effort;
- c) identifying a data-driven scientific model for capturing all risk. FEMA should develop a toolbox available on their website for use with and by SLTT stakeholders to ensure common language and tools for risk assessments that allow the use of local data and resources;
- d) establishing baseline minimum standards for completing risk assessments to ensure like comparison between similar assets (sectors, lifelines, etc.) across all levels of government partners. FEMA should encourage government partners to meet and exceed standards. This will not supersede any sector specific requirements; and
- e) developing and publishing a risk dashboard to the citizens, not just SLTT governments. This will allow individuals to understand their own risk. This dashboard will also provide guidance on mitigation and action items to decrease risk. For instance, purchasing flood insurance or clearing vegetation around a home to improve defensible space against wildfires. Such a tool could provide information on local organizations who can assist SLTTs and individuals in these efforts.

Finally, this action should result in SLTTs taking a unified approach to performing risk assessments. All aspects of risk, including enterprise and supply chain assessments, among others, are identified. Common language and process reduces disconnect.

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

One consideration is ensuring Personally Identifiable Information (PII), protection and secure access of vulnerability assessments. This may require possible funding to accomplish; gathering and submitting data, especially within a standardized, secure and organized format, is costly for the agencies at the state, local, territorial and tribal level, and should be a cost assisted by the federal government.

Another consideration is applying security processes and measures that FEMA has employed for secure data usage as a minimal standard.

Timeline: The GAO assessment should be requested immediately (2020-2024). Concurrent with the GAO request, FEMA should begin the process of discerning the standardized risk assessment. Implementation should begin with the FEMA 2022-2026 Strategic Plan.

### 09 – Use a Streamlined Funding Approach that Aligns to Mission Goals

**Recommendation 2020-09:** FEMA must reduce the cost, complexity and burden on SLTTs of accessing and implementing federally funded resilience and readiness programs. FEMA should create a simplified funding stream matrix, a “one-stop shop”, to ensure the equitable and efficient coordination of efforts and funding resources across multiple federal stakeholders and funding agencies, to support SLTT capacity to create readiness and resilience.

#### Anticipated Impact

This recommendation should reduce the cost, complexity, and burden of resilience programs, freeing more resources for SLTT partners. For example, local emergency managers would not have to apply separately to multiple federal programs. They would apply once for federal grant money and then access the funding they need. This would require extensive coordination at the federal level but would



make resources drastically easier to access for communities. As another example, the NIST Community Resilience Planning Guide is a helpful resource for communities because it crosses traditional organizational siloes, like planning and emergency management, to produce a whole community assessment of the risks the community is facing, whether they are traditional hazards like hurricanes or non-traditional ones like aging.

#### [Cost, Time, and Other Implementation Considerations](#)

The FEMA 2018-2022 Strategic Plan focuses on reducing the complexity of FEMA writ large. This recommendation highlights that SLTT partners face a significant burden of cost and time meeting requirements placed by the federal government and her agencies, which could be reduced.

The Administrator should engage the Government Accountability Office (GAO) for a survey spanning all federal executive functions that perform risk assessments and provide disaster funding, in order to identify overlap and work towards decreasing duplication of effort. The survey, and subsequent analysis of gaps and overlaps by FEMA, should be completed no later than 2024. FEMA should engage in a concerted effort to serve as the coordinator with partner agencies.

## **EDUCATE LEADERS FOR BETTER OUTCOMES**

**Problem: The Function of Emergency Management Is a Mystery to Many That Rely on Emergency Management in Times of Crisis**

**Current State: There Is Inadequate Education of Leadership About Emergency Management**

When a disaster strikes and leaders are not aware of the functions of emergency management, precious time is lost trying to fill that knowledge gap. Emergency managers are often their own advocates and must effectively communicate the value of supporting their programs. All too often, the first time that information about emergency management is communicated to a leader is during the crisis.

**Desired State: Political Leaders Are Well-Informed About the Functions of Emergency Management**

Emergency managers have access to good materials and training to advance their programs and effectively promote and communicate about their functions. In times of crisis, there is no need to add to the burden of educating emergency management functions. Leaders know what emergency management is and is not for, and emergency managers are given greater support and trust to do their jobs because knowledge of the profession is a given.

### **Recommended Solutions**

#### **10 – Educate Incoming Political Leadership About Emergency Management**

The regular transitions in leadership of elected officials and political appointees, at all levels of government, call for standardized orientation of emergency management processes. Furthermore, SLTTs vary widely in how they practice and execute emergency management; likewise, regional responsibilities of coordination amongst federal agencies (HHS, DHS/FEMA, etc.) also vary widely,



making the understanding and coordination of emergency management complex, cumbersome, and confusing.

**Recommendation 2020-10:** The FEMA Administrator should establish a Taskforce to review the training materials and programs used to orient incoming executives, newly elected Mayors, Governors, White House officials, and Cabinet leaders.

#### Anticipated Impact

This action should result in:

- a) Identifying opportunities by 2024 for improvements in curriculum, workshops, and training through National Governors Association, National Emergency Management Association (NEMA), International Association of Emergency Managers (IAEM), Emergency Management Institute (EMI), Center for Domestic Preparedness (CDP), Naval Postgraduate School Center for Homeland Defense and Security (NPS CHDS), and other such partners for enhanced coordination;
- b) Educating leaders on how to leverage the all-hazards “Incident Management” construct and doctrine by 2028;
- c) Expanding curricula for training on incident management processes;
- d) The development of core competencies needed for elected officials, with a focus on equity; and
- e) Facilitating planning, training and exercises including diverse stakeholders as appropriate for the scenario.

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

Leveraging existing training materials and expanding them to include specific training on disaster management, prevention, and resilience minimizes the potential development expense. Exercise development and costs associated with conducting those exercises should be considered eligible under preparedness programs.

### 11 – Train Emergency Managers to Educate Leaders

It is important for emergency managers to learn how to communicate the principles and processes of emergency management to elected officials and political leadership. While the foundational principles of emergency management are well understood within the community of emergency managers, they do not necessarily translate clearly to the world of political leaders, elected officials, and the general public. There is an imminent need to train emergency managers on simplified public communications and understanding of political realities within which they operate.

**Recommendation 2020-11:** The FEMA Administrator should direct the Emergency Management Institute (EMI) to provide emergency managers with the required education and training to effectively communicate principles and processes of emergency management, and the need for such programs to be approached with equitable outcomes as a core result, to elected officials and political leadership.

#### Anticipated Impact

This action should result in:



- a) Reviewing existing curricula offered by CDP, and to the extent applicable EMI, to identify any gaps by 2024;
- b) Reviewing the quality of existing training programs within EMI, with the goal of developing guidance on how emergency managers could train and support non-emergency management staff in their jurisdiction;
- c) Developing new courses and workshops, if needed, to fill this need for education and professional development of emergency managers by 2028; and,
- d) Training opportunities for program and project management for non-EMs by 2032.

The creation of an environment where political appointees, elected officials, and the general public have a much better understanding of the profession of emergency management will contribute to a more effective disaster response. Further, this enhances the ability of emergency managers to communicate more efficiently, enhancing their own effectiveness while decreasing confusion.

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

Costs will occur with course material development and logistics associated with conducting training. Time considerations will need to be considered for these factors and course facilitation. Implementation should be considered as a “train the trainer” option to allow local SLTT partners to identify course participants and provide training on an as-needed basis.

## EMBRACE DATA SCIENCE FOR BETTER OUTCOMES

### Problem: Lack of Data Science Resources

There is a lack of data-supported evidence to guide and improve emergency management. While FEMA maintains some publicly available databases, these are limited in scope and are more output than outcome focused.

### Current State: Emergency Management Lacks Data Resources to Guide Proactive Decision Making

Multiple opportunities exist to advance data science and technology in emergency management, in order to replace the standard after action reports, hot washes and ‘lessons learned’ compendiums that are not generalizable. Using data to address challenges in emergency management can be achieved by working alongside data scientists to develop and support data measurement methodologies.

### Desired State: FEMA Helps Communities Reduce Future Risks Through Risk-Informed Planning and Decision-Making

The goal is to advance the field of emergency management by leveraging all stakeholders to communicate and integrate data-driven approaches within an all-hazard perspective into disaster lifecycle management.

In 2045, FEMA will be *effectively, efficiently, and equitably* executing its mission by providing technical assistance and financial support in addressing catastrophic nation-wide events. Using their national-level experience, FEMA will share best practices, lessons learned, and data analytics to help communities reduce future risks. Risk-informed planning and decision-making helps planners examine all hazards or threats and produce integrated, coordinated, and synchronized plans.

To do this well, FEMA requires consistent, reliable, and high-quality data analytics to inform decision-making and risk management before, during, and after disasters. In the 2018-2022 FEMA Strategic Plan, FEMA committed to improving its analytics capabilities to enable the use of data-driven approaches in decision-making. Consistent data management and improved infrastructure can reduce delays and decrease costs in FEMA mission delivery – allowing assistance to arrive in a timely fashion.

In 2045, FEMA will further this goal using scientifically validated principles to guide decision-making and investments. Using these principles, FEMA helps people understand and mitigate risks to life and property and motivate them to act – individually and collectively – to reduce these risks, build capabilities, and prepare for disasters. This collective effort reflects a national system of emergency management rooted in resilience and readiness capacity and maintenance, where everyone understands their role, responsibility, and contribution.

## Recommended Solutions

### **12 – Enhance Partnerships with Leaders in Research and Data Science in other Federal Agencies, the Private Sector and Academic Research University Programs**

**Recommendation 2020-12:** The Administrator should collaborate with federal agencies to develop a roadmap with defined metrics for interagency partnerships whose focus is developing data science and use of data, including NIH, CDC, NASEM, NIST, DARPA, and NSF, among others. The roadmap should be developed within 6 months of the release of these recommendations. Successful adoption of this recommendation shall be the creation and implementation of at least 2 collaborative agreements annually for the purposes stated herein, with the first to be implemented within 18 months from the release of these recommendations. These partnerships and the products they produce will have lasting positive benefits for FEMA and its stakeholders.

#### Anticipated Impact

This action should result in:

- a) Developing collaborations with data science, data analytics and innovative technology firms in the private sector, academic research universities, and think-tanks; and,
- b) Designing and developing technologies with intentionality to address biases and ensure equity.

### **13 – Invest in a FEMA-Wide Data Management System to Track and Monitor Outcomes**

**Recommendation 2020-13:** We recommend that FEMA invest in a comprehensive, enterprise data management (EDM) infrastructure to support data collection, dissemination, and analytics for outcome measures. The implementation timeline should be 3-5 years. This will serve across the entire disaster lifecycle. While the investment in this EDM infrastructure would not be small, the potential savings in more effective disaster lifecycle management could be enormous. FEMA does maintain some publicly available databases; however, these are limited in scope and generalization and focus on outputs rather than outcomes.

In 2045, FEMA will be able to make real-time decisions for disaster mitigation, preparedness, response, and recovery based on accurate and complete data from previous disasters and events.

The actions to implement this recommendation should include:



- a) Identifying existing data, databases, and repositories of public and proprietary data across the FEMA enterprise, including existing information systems;
- b) Establishing data governance, processes, and data use agreements to facilitate internal and external data sharing;
- c) Determining the availability of data that can be made **publicly available to stimulate open-data and data-driven innovations** in emergency management, and enhance FEMA's compliance with The Foundations for Evidence-Based Policymaking Act (or OPEN Government Data Act, Pub. L. 115–435); and
- d) Developing a roadmap for data-driven decision support tools and analytical products to facilitate disaster lifecycle management across the federal government, SLTTs and the private sector, where appropriate.

#### **14 – Develop Scientific and Technology Professional Development Training for Emergency Management**

Our vision for 2045 is that, using science and research as its foundation, emergency management leaders are developing and implementing scientifically-based programming, activities and tools to address its most pressing issues, including the advancing impacts of climate change. Current professional training offerings do not sufficiently advance the field of emergency management with science, innovation, and emerging technologies.

**Recommendation 2020-14:** The FEMA Administrator should collaborate with academic and research institutions, including Federally Funded Research and Development Centers (FFRDCs), to develop scientific and entrepreneurial training programs for professional development of FEMA staff and emergency management professionals nationwide, with the goal of having the first training program developed by 2023.

##### **Anticipated Impact**

This action should:

- a) improve evidence-based decision making before, during, and after disasters;
- b) bring new and emerging research & technologies into FEMA;
- c) reduce complexity;
- d) enhance coordinated disaster lifecycle management across all levels, driven by a common data management system;
- e) prepare for catastrophic disasters by better understanding and predicting the impacts of disasters on communities; and
- f) help reduce the siloing that exists between and among agencies.



## Focus on Coordination

### CONTINUALLY IMPROVE COORDINATION

#### Problem: FEMA and the Emergency Management Community Nationally are Primarily Reactive

Our nation's emergency management structure is primarily reactive. FEMA itself struggles to get ahead of problems and address them proactively. Recognizing the need for strong current response operations, FEMA should focus on coordination across the emergency management enterprise.

Lack of SLTT support for mitigation planning undermines the ability to adopt mitigation measures when the opportunity arises. A symptom of an underlying lack of human resources in mitigation planning is that contract support is the widely deployed solution. Use of contractors does not engender the highest level of institutional understanding of the plans developed, and increases costs associated with planning. Lacking the in-house understanding, plans may not be actionable when the time comes to utilize them.

Emergency management is falling behind, rather than getting ahead of foreseeable problems and addressing them proactively. Communication breakdowns and lack of coordination hampers effective preparation, as well as response. The lack of capacity to plan mitigation efforts hinders moving towards a more resilience state, which then keeps SLTTs stuck in a reactive state. Rebuilding several times is more costly in the long run than building back to a higher construction standard in the first instance. Although there can be issues with building back that introduce additional planning cost, it is the lack of capacity to plan that inhibits the best use of funds when building back. The result is a cycle of inadequate planning that leads to non-optimal funding use. For example, through mitigation planning it may become obvious that using mitigation funds to relocate a school out of a flood zone is an optimal investment option, but without appropriate planning, the option of moving will not be considered.

#### Current State: Emergency Management Faces Profound Coordination Challenges

According to the FEMA Diversity Dashboard, there are nearly 10,000 employees at FEMA Headquarters compared with just over 4,000 throughout FEMA's 10 regional offices. This indicates an imbalance between Headquarters and Regional personnel. There is likely an imbalance between HQ and Regional resources, as well.

Regions have demonstrated effective response capabilities, including most recently during the COVID-19 pandemic. However, they need more operational and decision-making capacity, which is currently concentrated at FEMA HQ. Moreover, different regions enact different policies, which hinders communities in effectively delivering emergency management outcomes. Severe resource limitations also lead to SLTT emergency managers being underfunded or funded only to part-time. A part-time emergency manager is inadequate support for a community to develop the plans needed. A lack of consistent coordination across FEMA Regions further exacerbates the issue. Policies differ between Regions, and between Regions and HQ. For example, grant policies sometimes differ across regions.





## Desired State: All Levels of Emergency Management are Empowered to Handle Threats and Hazards Through Improved Preparation and Coordination

The goal is to achieve a whole of government approach to emergency management, with a strong federal-level agency that is well-coordinated through Regional Offices with state, local, tribal, and territorial partners. Since all disasters begin locally, regions and HQ operate under the same policies designed to help SLTTs succeed. Emergency management at all levels is proactive through the disaster life cycle, addressing issues as early as possible and in a well-coordinated fashion. In the desired state, mitigation programs are the primary focus, rather than being an afterthought to reduce the risk. FEMA employees are regionally located and help local communities do more effective mitigation planning.

Regional coordination is considerably improved at all levels, benefiting even the states with the least capacity. Required resource needs and support are clearer. FEMA employees located in the Regional Offices support regional coordination. FEMA Integration Teams support communities with limited capacity, helping focus those communities on root problems and helping local communities develop an all-hazards approach.

## Recommended Solutions

### 15 – Review FEMA Headquarters Versus Regional Responsibilities

**Recommendation 2020-15:** National, state, tribal, local, and private sector responses to COVID-19 have brought the need for regional coordination into greater focus. In 2045, we envision an emergency management system in which local, state and regional emergency management offices are equitable, empowered, enabled, and appropriately supported to meet needs in an agile and a locally contextual manner, leading to greater self-reliance and resilience. We recommend that the FEMA Administrator conduct a formal review and gap analysis of the areas of responsibility of FEMA Regional Offices versus FEMA Headquarters, with a goal of delegating authority, resources and decision making as close to the local level as possible. We further recommend that this review include coordination with other agencies at federal, regional, state, and local levels.

#### Anticipated Impact

This action should result in:

- a) Identifying opportunities for improvement of what functions and responsibilities can be more effective if pushed from FEMA HQ to the regional level;
- b) Enhancing greater collaboration with regional offices and programs of various other federal agencies for enhanced “whole-of-government” collaboration;
- c) Determining what capacity needs to be built at the regional levels, and what training resources need to be made available, to *effectively*, *efficiently*, and *equitably* implement both FEMA’s and other connected federal agencies’ programs in support of the SLTTs; and
- d) Obtaining greater balance of FEMA staffing at the regional and HQ levels.

With this recommendation, FEMA headquarters, regions, and field operations should operate from a place of close alignment and communication. Enhanced local and regional capacity can lead to greater resilience at the community level, while reducing dependency on the federal government. Greater

delegation to FEMA Regional offices as well as SLTT stakeholders allows FEMA HQ to focus on national level management for mitigation, preparedness, response, and recovery.

Done well, FEMA will gain added capability to respond to large and multijurisdictional incidents while expanding capacity; as regional, state, and local emergency management increasingly handle incidents within their communities autonomously.

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

Enhancing regional capacity is expected to reduce costs and time to the federal government of managing multiple disasters simultaneously. This will allow FEMA to focus on response to large and multijurisdictional incidents, while expanded capacity and authority allows regional, state, and local emergency managers to handle incidents within their communities independently.

### 16 – Establish FEMA as a Cabinet-Level Agency Reporting Directly to the President

To better improve FEMA response and coordination responsibilities, Congress and the President should re-establish and empower FEMA as a cabinet-level department. In doing this, FEMA would be best positioned to serve the emergency management needs of the nation and its citizens. The continued rise of mega-disasters has underscored the need to elevate the agency. The federal response to major disasters since 2001, along with the on-going response to the COVID-19 pandemic, have thoroughly exposed the weaknesses in our emergency management system, processes, and existing structure. The rapid response that is required to appropriately manage major disasters, and the sustained focus on mitigating future events, requires a cabinet-level agency with direct and regular access to the President.

**Recommendation 2020-16:** We recommend that the FEMA Administrator – with support from the National Emergency Management Association (NEMA) and the International Association of Emergency Managers (IAEM) – work with the U.S. Congress and the White House to establish an **Empower FEMA Taskforce**. This Taskforce would develop and submit a review and analysis on what a FEMA transition to a Cabinet-level Agency might look like.

#### Anticipated Impact

This action should result in:

- a) Establishing the **Empower FEMA Taskforce**, comprised of experts from academia, industry, past leaders in federal government, and such groups as the National Academy of Public Administration, U.S. Chamber Foundation, among others, with relevant background and expertise;
- b) Developing a roadmap with actions and timelines to be reviewed by experts within but not limited to FEMA NAC, IAEM, and NEMA leadership to broaden the base of support;
- c) Leveraging the political and technical leadership of FEMA NAC, IAEM, and NEMA for advocacy with relevant stakeholders and Congressional leaders that have oversight, authorization, appropriation authority; and
- d) Drafting a set of legislative, legal, regulatory and procedural instruments that need to be pursued in order to successfully accomplish this transition.

Cabinet-level elevation would give the current FEMA Administrator a more prominent role, potentially enhancing their effectiveness in Washington and beyond.

### Cost, Time, and Other Implementation Considerations

The Empower FEMA Taskforce would have upfront costs but would have the potential to reduce management costs in the long term. The main cost drivers would be assigning existing federal employees to work on this group. Employees should come from FEMA as well as from other federal agencies and Congress. The group governance would need to be appropriately established, if approved.

## 17 – Establish Unified Coordination

Unified Command can only be achieved through unified coordination. As the 1993 NAPA report<sup>12</sup> concluded, “***the nation needs a well-organized, effective emergency management system; the panel found it does not have one.***” The federal government’s response to the recent mega-disasters and catastrophes have seen different federal agencies taking incident command roles with varying levels of disarray, false starts, dysfunction, and missteps. The lack of clarity on who the lead agency is when responding to certain types of disasters continues to result in poor coordination, confusion, duplication of effort, and inferior outcomes. To its credit, over decades of failures and successes, FEMA has developed expertise in disaster communications, supply chain logistics, and networks of multi-level relationships for private sector coordination. There is an imminent need for our elected officials to recognize FEMA as the Nation’s lead agency for Unified Coordination across all hazards, not only for weather-related and environmental disasters, but also for other scenarios. FEMA will remain the lead agency and work collaboratively with other governmental agencies during times of bioterrorism, infectious disease and/or health-related disasters, and situations that would require significant reliance on supply chain acquisition, distribution, emergency housing, or other logistical needs.

**Recommendation 2020-17:** With strong support from prominent emergency management organizations like NEMA and IAEM, we recommend that the FEMA Administrator convey the strongest intent of the FEMA NAC to the U.S. Congress and the White House to establish a ***Unified Coordination Taskforce*** to implement FEMA as the lead agency for Unified Coordination, beginning immediately after the full implementation of the ***Empower FEMA Taskforce*** recommendations, and completing by 2024. Federal incident command rests with the appropriate lead agency.

### Anticipated Impact

Under the leadership of the FEMA Secretary, and with support of other cabinet secretaries, the White House, and other organizations including the National Association of Counties, National League of Cities, and the Conference of Mayors, this action should result in:

- a) establishing the ***Unified Coordination Taskforce*** comprised of experts from academia, industry and past leaders in federal government with relevant background expertise;
- b) working closely with other cabinet secretaries, and the White House, develop a roadmap with actions and timelines to be reviewed by FEMA NAC, IAEM, and NEMA leadership to broaden the base of support; and

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<sup>12</sup> “*Coping with Catastrophe, Building an Emergency Management System to Meet People’s Needs in Natural and Manmade Disasters*,” National Academy of Public Administration, Report to the U.S. Congress, February 1993.

- c) drafting a set of legislative, legal, regulatory and procedural instruments that need to be pursued in order to successfully accomplish the transition to a true Unified Command System for emergency management in the United States.

When complete, this will result in an emergency management process that is standardized and predictable across all hazards and disasters – Stafford Act and non-Stafford Act alike – with FEMA providing its leadership and Unified Coordination in consultation with agencies who might provide subject matter expertise based on the type of the incident. This will result in greater clarity, clearer communication, superior coordination with internal and external stakeholders, and enhanced understanding of who is in charge, while delineating roles and responsibilities of all parties involved.

We expect such unified FEMA-led coordination to minimize the likelihood of failures and operational mishaps when agencies who are not actively involved in emergency management on a daily basis, who do not have networks of relationships at all levels of government and the private sector, are forced to or are expected to lead major disaster response operations.

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

We do not expect Unified Coordination to result in increased costs. Rather, over time, we expect cost savings, as the nation is better positioned to leverage expertise of FEMA instead of replicating emergency management structures and processes across various agencies.

Based on the outcomes of the *Empower FEMA Taskforce*, there will be a need for close collaboration and management of time-dependent actions with the U.S. Congress and other external stakeholders on legislative, legal, regulatory and procedural instruments that need to be pursued in order to successfully accomplish the envisioned transitions.

## RESOURCE MANAGEMENT AND SUPPLY CHAIN

### Problem: Resources Are Either Duplicative or Inadequate

Apart from well-organized mutual aid systems, SLTT governments may not be aware of each other's resource capabilities, potentially resulting in duplicate, inadequate, or poorly distributed resources. SLTT governments may become overly dependent upon federal resources, which limits the ability of FEMA and other agencies to prepare for and respond to large consequence events, or simultaneous large consequence events.

Just-in-time delivery supply chains are not designed to accommodate a large-scale disaster. Matériel and equipment may not be available in large enough quantities, and the transportation network may be compromised by the disaster due to vulnerable interdependencies and cascading effects. Government stockpiles may be outdated or quickly exhausted by a large event or simultaneous events.

### Current State: Supply Chains Lack Coordination

The capacity of the emergency management system in the United States is currently based on the following:

- a) Independent local and tribal government resource capabilities that are loosely coordinated and shared through locally established mutual aid systems;

- b) State and territorial government resource capabilities that provide resource support to local governments upon request, or when state/territorial governments have statutory authority to initiate response due to the type or magnitude of an incident; state and territorial government resources are loosely coordinated and shared through EMAC or upon request to FEMA;
- c) Federal resources are provided or coordinated by FEMA as the result of a Presidential declaration or at the request of state, territorial or tribal governments.

Supply chains in the United States are privately operated by a complex system of manufacturing, warehousing, transportation, sales and logistics management. The system is predominantly based on a just-in-time delivery concept, which means that products are manufactured, shipped and warehoused based on normal, predicted sales experience. Federal agencies, the military and SLTT governments stockpile limited quantities of disaster supplies and equipment but are increasingly dependent upon private sector suppliers when a disaster occurs.

### **Desired State: Jurisdictions, Including the Federal Government, Can Easily Understand and Share Available Resources**

By 2045, the resource capabilities of the emergency management system in the United States should be structured so that:

- a) SLTT governments have the resource capabilities to manage most disaster events, including immediate and mid-term sheltering needs, except for so-called “mega-disasters” that exceed regional or national resources;
- b) Federal, state, territorial, tribal and local government resources are clearly identified, typed, and positioned so that they are readily available based on the best-available predictive tools and technologies;
- c) Federal, state, territorial, tribal and local government resources are coordinated to eliminate duplication of effort and to close gaps in resource availability;
- d) Private sector supply chains and government stockpiles interface closely with federal and SLTT disaster planning, response and recovery efforts to ensure the availability of matériel and resources when needed. Private sector supply chains are incentivized accordingly.

## **Recommended Solutions**

### **18 – Create a National Supply Chain Strategy**

**Recommendation 2020-18:** Create regional or state level distribution of lifeline supply chain ecosystems (e.g., PPE for health care facilities, fuel distribution points, etc.), from which private sector supplies are ingested and from which supplies are distributed to facilities.

#### **Anticipated Impact**

This action should result in:

- a) A recognition of existing capabilities at the SLTT levels to integrate existing capabilities into a national strategy and identify gaps at all levels; and
- b) Creation of a single point for coordination or monitoring of ordering in each region.



## 19 – Enhance National Disaster Supply Chain Support & Coordination

**Recommendation 2020-19:** The FEMA Administrator should seek the establishment of a National Disaster Supply Chain Resilience Operations Center by 2022, to be responsible for intelligence gathering and sharing; identifying resource needs and gaps; planning for disaster supply chain impacts (domestic and global); and coordinating the deployment of the disaster, critical infrastructure, and lifeline support supply chains.

- a) Create a National Counter Terrorism Center (NCTC)-like entity working across government in collaboration with the Intelligence Community and Department of Defense, with the capacity to handle classified information.
- b) The United States needs a national strategy for relationship management with disaster and lifeline supply chain stakeholders. This Operations Center shall manage Defense Production Act authorities (under section 708) for building and maintaining community resilience and stabilizing the unique supply chain environment of each lifeline. It shall review national and SLTT pre-disaster contracts to assess any potential risks to the supply chain.

## 20 – Expand Disaster Supply Chain Coordination

Our national response to mega-disasters (i.e. disasters that exceed regional or national resources) with broad impacts and cascading effects, such as Hurricane Katrina, Deepwater Horizon, Super-storm Sandy, 2016 floods, and the COVID-19 global pandemic, reinforce the need for states to reduce their dependency on FEMA headquarters and to work collaboratively with each other and the private sector, with support of the federal government, to develop regional capacity to address regional needs. The federal government has a distinct role to play in this **federally supported, regionally coordinated, state and tribally managed, and locally executed** disaster management solution. The federal government – working across different agencies – must facilitate supply chain coordination, national/regional stockpile management, logistics and distribution, as well as public-private partnerships at regional levels. This must be balanced with the continuing need to decentralize HQ responsibilities to allow for more rapid response.

**Recommendation 2020-20:** The FEMA Administrator should work with relevant stakeholders in the public and private sectors to develop a paradigm for supply chain coordination and capacity building.

The intent of this recommendation is to ensure effective and equitable resource allocation, to avoid the competition for resources that may occur during an event, and to ensure private sector participation in disaster supply chain planning and implementation.

### Anticipated Impact

This action should result in:

- a) The FEMA Administrator determining the roles and responsibilities of each level of government for disaster supply chain management. We urge the Administrator to create a draft summary (1-2 pages) no later than February 2021 and a final report no later than July 2021 reviewing existing supply chain management efforts of different federal agencies, non-governmental organizations (NGOs) and private sector entities;



- b) By December 2022, the FEMA Administrator should establish a training and exercise program for federal, state, territorial, tribal and local governments for effective and equitable disaster supply chain management. Private sector stakeholders could potentially be included in the training as well. The goal of the training and exercise program is to ensure that critical supplies and resources are available for use during the response and recovery phases of a disaster, and to promote engagement with private sector supply chain stakeholders. This should be the first step in a FEMA initiative to create incentives and guidance (e.g. grants, technical assistance, planning criteria) for the establishment of SLTT, NGO and private sector disaster supply chain plans, policies and procedures. In addition, this initiative could highlight the value of the national and state-level Business Emergency Operations Centers (BEOCs) to enhance the flow of critical lifeline products and services through Just-in-Time private sector supply chains.
- c) Conducting critical and objective analysis by external experts of the efficacy, efficiency and success of disaster supply chain management efforts during mega-events, such as Hurricane Katrina, Super-storm Sandy, and the COVID-19 pandemic, among others;
- d) If warranted, developing a roadmap that would enable enhanced stockpile capabilities at the regional level supported by public/private partnerships.

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

The initial phase of this initiative should focus on awareness and training capabilities to strengthen SLTT knowledge of disaster supply chain operations. A disaster supply chain curriculum could be developed by EMI. In the absence of additional targeted grant funding, incentives and guidance should be incorporated into existing grant and reimbursement programs. This should be included in the 2022-2026 FEMA Strategic Plan.

## 21 – Support Establishing SLTT and Private Sector Stockpiles

**Recommendation 2020-21:** The FEMA Administrator should work with other federal agencies by 2028 to develop training and awareness programs that encourage and guide state, territorial, tribal and local governments and private health care systems (including hospitals and nursing homes) to establish their own strategic stockpiles of disaster supplies and material. Relevant NGOs should also be encouraged to maintain their own stockpiles.

#### Anticipated Impact

The goal of this recommendation is to ensure that federal agencies, SLTTs, and the private sector can work together in a coordinated manner with clear lines of authority and responsibility that promotes the equitable sharing of resources. This should be the first step in an initiative to create incentives and guidance (e.g., grants, technical assistance, planning criteria, CMS criteria, group purchasing capabilities, etc.) for the establishment of SLTT and private sector stockpiles that are readily available for smaller scale events or until national stockpiles and resources can be activated for major events.

If successful, this initiative will reduce dependence on FEMA resources for smaller events and for the initial phases of mega-disasters.

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

Funding and the resources to manage SLTT and private sector stockpiles will be a significant barrier to implementation. Federal staff would need to be assigned to work on group purchasing contracts which would benefit SLTTs and private sector entities.

## 22 – Increase Private Sector Supply

**Recommendation 2020-22:** The FEMA Administrator should encourage businesses that manufacture and/or sell essential and disaster-related equipment and supplies to increase the rapid availability of such supplies and equipment or to quickly transition to the manufacture or selling of disaster-related equipment. Private sector strategies could include stockpiling, rapidly increasing manufacturing capacity, and global resource acquisition agreements.

### Anticipated Impact

The intent of this recommendation is to encourage the establishment, understand impediments and expand use of public-private partnerships by 2024 to strengthen the disaster supply chain and to make it more equitable.

### Cost, Time, and Other Implementation Considerations

Case studies that demonstrate the value and return on investment (ROI) of private sector disaster business ventures could motivate manufacturers and sellers of equipment and supplies. Improving supply chain resilience and the increasing supply availability reduces recovery time, which in turn could significantly reduce insurance and government relief costs. Moreover, as the Thriving Together Springboard notes, we should “Dedicate a permanent stream of government funding for value-chain innovation among regional suppliers to create shorter, more resilient supply chains.”<sup>13</sup>

## 23 – Better Use Mutual Aid and Shared Resources

**Recommendation 2020-23:** By October 1, 2022, the FEMA Administrator should assess mutual aid systems to determine how they can be better utilized and made equitable for all events. This assessment should include consideration of the following:

- a) How can FEMA better assist SLTT governments when mutual aid resources are overwhelmed?
- b) How can state, territorial, tribal and local governments be encouraged to develop more robust mutual aid capabilities and resources that can eliminate duplicate or excess capacity and gaps at the SLTT level?
- c) How can remote work technologies be more effectively leveraged to reduce the need for in-person deployment of support personnel, both for personnel safety and for cost-savings?

### Anticipated Impact

This recommendation will create a report that is intended to reduce dependence on FEMA resources during the initial phases of a disaster, support the efficient and equitable distribution and availability of mutual aid resources at the SLTT levels, and reduce the presence of on-site personnel for support and assessment duties.

### Cost, Time, and Other Implementation Considerations

Real-time situational awareness and resource inventory technologies coordinated with up-to-date risk assessments and predictive tools will support the effective implementation of this recommendation. The

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<sup>13</sup> Well-Being Trust. “Thriving Together—A Springboard for Equitable Recovery & Resilience in Communities Across America.” Well-Being Trust. 2020. [www.thriving.us](http://www.thriving.us).



lessons learned from the use of remote work technologies during the COVID-19 pandemic should be applied to determine ways to reduce the need for on-site personnel.

We strongly encourage the Administrator to seek the feedback of regionally-focused SLTT partners in the development of this report.

## Focus on What Works

### MANAGE CONSEQUENCES, CASCADING EFFECTS, AND LIFELINES

#### Problem: Emergency Managers Are Not Trained to Look for and React Properly to Cascading Impacts Within Lifelines

Without a shift in focus from basic emergency response to a focus on disruptive risk, the nation will be ill-prepared to manage catastrophic disaster consequences and lifeline cascading impacts in the future. It is important to assess and bake in resilience best practices into community economic development and recovery planning, and the private sector business case for resilience. A focus on cascading failures and a focus on our interconnected world is essential. The heart of resilience is the intersection between the built and social environments and cascading events, and unintended consequences are tied to this area.

Lifelines focus on disruptions, not hazards. A wildfire, for example, may lead to a power outage; the cascading impact of a power outage may become more problematic than the original fire disaster. Therefore, the goal should be to identify risks during mitigation planning to prevent disruptions, or to recover lifeline functionality quickly to mitigate cascading consequences.

The focus should be more on potential cascading disruptions in their entirety rather than the immediate disaster at hand. Also, not all cascading events or disruptions are limited to lifelines. Lifelines require a level of priority, but overall consequence management is becoming the heart of local emergency management. The disaster or incident is managed by first responders while the consequences are often left up to the emergency manager to address. More emphasis, therefore, should be on training and preparing emergency managers to look at the potential cascading events and lifeline protection.

#### Current State: Consequence Management and Knowledge of Cascading Impacts Are Critical but Lacking Throughout Emergency Management

Traditionally, emergency managers have focused efforts on emergency response activities; however, data shows the most significant impacts of disasters are the cascading effects and consequences of major lifeline disruptions and other critical infrastructure and associated impacts on community resilience.

#### Desired State: Emergency Managers Need to Have A Solid Understanding and Working Knowledge of Disruptive Risk and Lifelines

Local, state, tribal, territorial, and Federal Emergency Management Agencies understand the vulnerabilities and interdependencies in their communities and shall build detailed plans and programs

to address disruptive risk that arises from connectivity of critical infrastructure and key lifelines which impact community resilience.

## Recommended Solutions

### 24 – Expand FEMA Lifelines to Include Cascading Effects

**Recommendation 2020-24:** The FEMA Administrator should expand the FEMA Lifelines to include disruptive risks that arise from connectivity of critical infrastructure and the cascading events that follow. Lifelines also tie into physical and social determinants of health and wellbeing and can be mapped to consequences when evaluating. This recommendation is an overarching recommendation which contains several sub-recommendations for action in order to fully address these issues.

#### 24a – Establish an Interactive, Intuitive, Consequence Management Tool for SLTT Stakeholders to Identify Their Lifeline and Cascading Disaster Vulnerabilities

**Recommendation 2020-24a:** The FEMA Administrator should embrace lifelines and continue their use and development through 2045. FEMA should work with federal partners, including the Cybersecurity and Infrastructure Security Agency, the Department of Energy, the Department of Transportation, the National Institute of Standards and Technology, and others to facilitate a better understanding of risks, planning and preparation at the SLTT levels related to cascading disasters and their impacts, to include cybersecurity.

#### 24b – Train for Consequence Management and Cascading Impacts

**Recommendation 2020-24b:** The FEMA Administrator should establish a training and exercise program by December 2022 for Federal, state, territorial, tribal and local governments on consequence management and cascading impacts of lifeline failures. We recognize that FEMA is developing training programs related to lifelines that, in part, may address the concerns reflected here. We wish, however, to ensure that any final training product reflects the full content of this recommendation.

In addition, we recommend the FEMA Administrator establish specific training and exercise programs for federal, state, territorial, tribal and local governments related to fully integrating the public/private sector by December 2022. The goal of the training and the exercise programs is to ensure emergency managers understand, in addition to the potential of cascading impacts, how and when to partner with the private sector to solve complex emergency management challenges and potentially prevent cascading events.

FEMA should also revisit the FEMA Lifelines to include disruptive risk that arises from connectivity of critical infrastructure and the cascading events that follow. The goal of the training and exercise program is to ensure emergency managers can plan effectively for second and third-order events and to begin the shift away from emergency managers as first responders. Instead, the focus of an emergency manager should be to develop local capacity for response and recovery from lifeline disruptions. Training of emergency managers in the area of consequence management is needed to achieve this. By including this level of training, the goal is to have many emergency managers proficient in consequence management by 2030. This training needs to be embedded in all relevant emergency management training programs for better overall future outcomes from disasters, and for there to be an

overall decrease in second and third order event issues. The goal is to have 90% of emergency managers trained in consequence management by 2045.

#### 24c – Address Cascading Impacts of a Cyber Attack

**Recommendation 2020-24c:** The FEMA Administrator should work with CISA relative to consequence management and cascading impacts of a potential cyber-attack. The FEMA Administrator should establish a Cybersecurity Taskforce, with CISA, to conduct a review of cybersecurity risks, including threat analysis and capabilities. FEMA should work with CISA to ensure that there are adequate disaster response plans to deal with the consequences of cyber-attacks. Homeland security grant program requirements may be an area for this team to focus on.

The ability of FEMA to lead the federal government in science-based and data-driven decision making depends heavily on its ability to collect, secure, share, manage, and disseminate data and information. Cyber-attacks in the digital world by nation-state actors, cybercriminals or terrorist organizations on critical IT systems, databases, public or private sector networks, and critical infrastructure lifeline systems can quickly escalate into disasters in the physical world with possible cascading local, regional, national, and global effects.

#### 24d – Improve Public and Private Sector Coordination on Critical Lifelines

**Recommendation 2020-24d:** The FEMA Administrator should define public sector and private sector roles and responsibilities in lifeline systems by December 2022, including an assessment on where the private sector may be better suited to manage emergency activities over the government. This should be driven down to the local level. The private sector occasionally can respond faster, although they may need encouragement to increase equity.

FEMA should focus on integrating them into the emergency management system. The FEMA Administrator should develop a plan for integrating the private sector into emergency management operations by December 2022, including the emergency management roles at the local, state and federal levels.

The FEMA Administrator should drive the ESF14 construct down to the local level nationwide by December 2022 to ensure adequate understanding of the roles and responsibilities of emergency managers and private sector partners.

#### Anticipated Impact

These actions should result in:

- a) More prepared emergency managers who consider cascading events and lifeline disruptions;
- b) An emphasis on consequence management as part of core training program curriculum;
- c) Integration of public and private sectors to overcome disruptions to lifelines and critical infrastructure to mitigate cascading events;
- d) A joint Cybersecurity Consequence Taskforce, to include CISA, that is functioning and able to identify cybersecurity threats quickly and work to solve these concerns; and





- e) The federal government and SLTTs actively seek out the collaboration of infrastructure and technology stakeholders in order to build a whole community model that addresses cascading consequences.

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

This recommendation will require additional resources in the development of recommended training, exercising and the development of a joint Cybersecurity Consequence Taskforce.

## FOSTER INNOVATION IN TECHNOLOGY AND COLLABORATION

### Problem: Legacy Methods of Technology Adoption, Acquisition, and Solution Development Hamper the Mission

We are living in a time of emerging problems and emerging solutions, and it is therefore critical for FEMA to develop the capacity to solve tomorrow's problems, without changing the organizational structures entrusted with solving today's problems. FEMA has the opportunity to move from the current reactive approach to a proactive model through the creation of an entrepreneurial "ninja team" with a startup mindset that is supported from the highest levels. The group should work outside of traditional bureaucratic structures to seek out and collaborate with non-traditional partners. When standing up the Department of Defense Southern Command (SOCOM) innovation hub, current U.S. Navy Assistant Secretary of the Navy Hondo Geurts wrote that the Department of Defense's future technology edge will be predicated on its ability to sense and exploit the rapid identification and deployment of novel applications that are greatly superior to legacy products and methods, or what the venture capital community refers to as "killer apps." This innovation approach could serve FEMA effectively as well.

Without the creation of the proposed team, with an appropriate mission and reporting structure, FEMA will not be positioned to identify emerging problems, to develop innovative relationships with non-traditional partners, to rapidly innovate solutions for acute problems, to develop or adopt transformative solutions and technologies, to benefit from projects funded by other agencies through Small Business Innovation Research (SBIR) or Other Transactional Authority (OTA) mechanisms by other agencies, and will not have input into the development of dual-use technologies that can benefit the FEMA or SLTT emergency management mission.

### Current State: There Exists a Vibrant Government Acquisition and Innovation Ecosystem That Could Greatly Benefit the FEMA Mission and Long-Term Vision

FEMA can acquire cutting edge and emerging technology and build leadership in interagency entrepreneurial acquisition and the government innovation ecosystem. FEMA's technology strategy and acquisition process are structured to support and expand current strategies and needs defined by the FEMA operational directorates. The requirements defined by operational directorates have an inherent and natural bias for maintenance of the status quo, or incremental changes from the current position. Additionally, FEMA's acquisition of technology is based upon the traditional government purchasing model that solicits existing commercial products from traditional government solution providers. This process is slow, and leaves FEMA with little capacity for rapid technology acquisition, innovative problem solving, work with non-traditional actors, or technology foraging in support of long-term strategic objectives.



Elsewhere in government, a vibrant acquisition and innovation ecosystem is creating new opportunities for the exploration of technology advances and relationships with the private sector, often focusing on high-impact problems. Recently, the Department of the Navy offered up to \$10 million in non-dilutive capital to attract new small business partners that can identify technology advances in areas of critical interest. AFWERX leveraged their experience with acquisition innovation to lead an effort to fund solutions to COVID-related challenges. Since many of these funding mechanisms specify dual-use technologies, collaboration with other agencies can provide solutions to challenges faced by FEMA and emergency managers nationwide.

**Desired State: FEMA Will Adopt A Robust Innovation, Design, and Acquisition Team That Implements Transformative Solutions, and Integrates the Most Relevant and Updated Technology, Ideas, and Collaborations into Response and Emergency Management Operations**

Across the U.S. government, federal and military organizations have created independent offices, programs, or entities that are tasked with the mission of rapid acquisition of new technologies, often dual-use, and to embrace new relationships with the private sector that can identify, create, or enhance new technological solutions that can result in exponential advances in capabilities. Often resembling the office of a venture capitalist firm or Silicon Valley startup, these organizations report to C-level management, often to the agency Administrator or Cabinet Secretary, to ensure that they are not unnecessarily encumbered, and can *effectively, efficiently, and equitably* execute the long-term vision.

Existing outside of the operational directorate structure provides complete horizontal perspective and access across the organization, without being arbitrarily limited by current systems or procedures, or encumbered by current operations unless specifically tasked to address an operational problem. Reporting to senior leadership ensures that long-term objectives are aligned with FEMA's strategic goals, provides the necessary authorization and autonomy for all necessary activities, maintains access to necessary resources, and provides the seniority to effectively collaborate with senior SLTT counterparts, as well as with the private sector. This team could be launched as a pilot, with the goal of creating a permanent Office of Innovation.

The new team should have the mandate, authority, and resources to explore and accelerate innovations in procurement and acquisition, including collaboration with startups and the venture world (example: [DIU](#), [AFWERX](#), [Vulcan-SOF](#)), as well as developing innovative solutions to high-impact problems (example: [18F](#), [Defense Digital Service](#), and FEMA's own [Hurricane Sandy Innovation Team](#)). [UNICEF's Office of Innovation](#) has a similarly broad mandate, including projects that range from developing solutions in the field during responses to issuing funding challenges to create new technological capabilities relevant to their mission. This team would also be positioned to exercise any OTA or relevant Defense Production Act (DPA) authorities granted to FEMA for its own acquisition of innovative game-changing solutions. Also, if there is a National Technological Framework, in 2045 local responders will be able to interface with county, state, federal, tribal and territorial members.

In summary, FEMA has the capacity for entrepreneurial and proactive technology acquisition to more effectively, efficiently, and equitably deliver the mission.



## Recommended Solutions

### 25a – Create an Expeditionary Entrepreneurial Team for Technology, Collaboration, and Acquisition Innovation

**Recommendation 2020-25a:** We are living in a time of unprecedented challenges and complex problems, and a rapidly evolving landscape of emerging solutions. It is important to therefore develop the capacity at FEMA to solve tomorrow’s challenges to achieve significant or transformative outcomes. To that end, by the end of 2021 the FEMA Administrator should create an expeditionary entrepreneurial “ninja team” that operates with a startup mindset. The new team’s mandate will be to focus on solving high-impact problems, and to seek out, evaluate, and experiment with new technologies, ideas, and best practices. This team will collaborate with other innovative government acquisition programs that are involved with technology development and acquisition that may be relevant to FEMA or emergency management, including dual-use military and civilian technologies. It will have the mandate and resources to engage in applied innovation, defined as the modification or integration of legacy and emerging technologies for new purposes. The team shall have the ability to engage in an operational role during an emergency, as assigned by the Administrator, focusing on innovation in a non-traditional capacity, emphasizing relationships and high-impact solutions. The team will also develop new and innovative collaboration, including use of an enterprise approach and experimentation with innovative methods of acquisition and interaction with the private sector, academia, and research organizations.

#### Anticipated Impact

With the goal of accelerating innovation and busting silos that exist across government agencies and beyond, this team would collaborate with peer innovation offices to build powerful cross-agency collaborative –collaboratives. These would be a coalition of passionate, motivated, informed, and inspired public servants, entrepreneurs, and researchers who collaborate to solve emerging problems by synergizing a vast array of professional and lived experiences in creating solutions.

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

We believe that it is critical that this team exist independently outside of FEMA’s operating directorates and staff divisions, reporting directly to senior leadership, focusing on high-impact projects that advance FEMA’s most important priorities as well as benefit SLTT emergency management. To ensure effective authority and autonomy to innovate with technology, acquisition, and operations, the team should report directly to the immediate Office of the Administrator or Deputy Administrator. The importance of reporting to executive leadership has been proven through the effectiveness of similar organizations across the U.S. government and other international bodies, with examples that include the Defense Digital Service (reports directly to the Secretary of Defense), the UNICEF Office of Innovation (reports directly to top two leaders, the Assistant Secretary General & Under Secretary General), and AFWERX (reports directly to the Air Force Vice Chief of Staff). If this is not possible, it should report directly to the Associate Administrator for Mission Support due to their responsibility over both technology and acquisition. This structure would enable the team to engage and collaborate with similar organizations and offices of innovation across the federal government, military, private sector, and the academic community. Innovators do not always check traditional hiring boxes. Due to the complexities and rigidity of the federal government hiring process, especially for SES roles, consideration should be given to non-traditional hiring methods for leadership and team members (examples: Defense Digital Service, Presidential Innovation Fellows).



## 25b – Partner with Industry to More Effectively Use Technology by Launching a Recurring FEMA Challenge to Inspire the Creation of Transformative Solutions

**Recommendation 2020-25b:** The newly-created team (under 25a) shall create a FEMA Challenge, modeled on those created by other government and DoD innovation units (such as the [AFWERX Challenge](#)) in order to partner with industry, the start-up ecosystem, academia, and other government agencies to seek out emerging and innovative solutions to grand challenges. FEMA should commit to securing funding for the top three winners, whether through government-provided funding (e.g. dual-use military or Department of Homeland Security Small Business Innovation Research), creative partnerships with the private sector (e.g. venture capitalists), or a combination of both.

At a minimum, this action should result in:

- a) The creation of challenges that focus on defining transformative problems, without proscribing specific or desired solution methodologies or technologies;
- b) The creation of models to accelerate the adoption of new and emerging technologies;
- c) Support the development of solutions to address the challenges identified in other NAC recommendations, including the open-data challenges described in recommendation 2020-12 and 2020-13.

### Anticipated Impact

Implementing these recommendations will position FEMA to be a robust acquisition and technology solution innovator, able to rapidly address the needs of survivors and SLTTs in a more collaborative, cooperative manner, addressing needs that arise which require rapid scalability, adaptability, and agility to address and resolve. It will streamline FEMA across all areas that require quick-turn acquisitions or innovative technology solutions, while improving customer experience and stakeholder engagement, presenting the opportunity to permanently enshrine the changes with the creation of a new Office of Innovation. By 2030, FEMA's technology will be predicated on its ability to sense and exploit the rapid identification and deployment of novel solutions.

### Cost, Time, and Other Implementation Considerations

This would require the creation of additional FTEs within the Office of the Administrator or designated reporting structure.

The team should reserve a component of its staffing for employees selected to rotate in from FEMA operational directorates to serve for a period. This model has been successful with NavalX and Kessel Run. It will maintain a strong connection to stakeholder needs, bring in new ideas, and ensure that information about the office's capabilities reach all areas of the organization. This will help achieve the goal of ensuring that all of FEMA should be technology enabled by 2045, embedding it into the organizational culture. This should be embedded into not only FEMA but all its SLTT members as well as members of the local responders from towns and cities. This will be embedded into local and state educational materials as well.

The team should exist independently outside of FEMA's operating directorates and staff divisions, reporting directly to senior leadership, focusing on high-impact projects that advance FEMA's most important priorities as well as benefitting SLTT emergency management. To ensure effective authority



and autonomy to innovate with technology, acquisition, and operations, the team should report directly to the immediate Office of the Administrator or Deputy Administrator.

If the team cannot report as stated above, the team should report directly to the Associate Administrator for Mission Support due to responsibility over both technology and acquisition. This structure would enable the team to engage and collaborate with similar organizations across the federal government, private sector, and the academic community. The team shall have the ability to engage in an operational role during an emergency, as assigned by the Administrator, focusing on innovation in a non-traditional capacity, emphasizing relationships and solutions. The team will also develop new and innovative collaboration methods, including use of an enterprise approach and experimentation with innovative methods of acquisition and interaction with the private sector, academia, and research organizations.



## 2020 AFTERWORD

The FEMA Administrator provided the NAC with three specific charges for this report, clearly outlining a vision for FEMA over the next 25 years. Within the NAC meetings and early discussions, the group understood the limiting nature of creating recommendations based upon specific hazards. By focusing on only one hazard, there is the likelihood that a recommendation could solve one problem while creating another.

Therefore, the NAC agreed to look at all recommendations without a specific hazard in mind and to ensure the vision for the future would allow FEMA the flexibility and adaptability to manage any event, as well as the cascading impacts from that event, into the future. The NAC recommendations were well underway when the COVID-19 Pandemic struck the United States in March 2020. COVID-19 caused primary, secondary and tertiary challenges in all jurisdictions throughout the United States and forced FEMA to look at assistance programs in a new light. This event and others throughout 2020 tested the NAC recommendations and caused the Council to evaluate their efficacy in our new environment.

As we have seen in the last year, it is mostly the consequences of a hazard and the cascade of events that follow a disaster that cause the most harm within communities. A lack of trust in some cities and social equity issues have led to civil unrest in 2020, the likes of which we have not seen since the 1960s. Supply chains have been disrupted in the food, medical, and fuel sectors, leading communities to fight for resources or medical personnel having to make due with hand-made solutions provided by individuals instead of manufacturers. Information management about the pandemic led to additional trust issues between government and community members leading to disagreement about national policies to keep Americans safe. In the later months of 2020, large-scale wildfires and hurricanes followed by flooding have clarified the long-term effects of climate change. 2020 also brought to light institutional inequities in programs and resource distribution that must be corrected if FEMA hopes to decrease future disaster losses and effects.

Overall, the COVID-19 Pandemic, climate-related hazards, and civil unrest throughout the country reaffirmed the recommendations outlined in this report. Equity is a foundational concept, emphasizing the need for systemic changes in order to support those most requiring assistance. Social capital is outlined within this lens because research has been shown it to be a main contributor to the effective recovery of a community post-disaster. It also assists communities in decreasing losses pre-disaster. While the NAC members recognized supply chain as a critical feature for the future of FEMA, the pandemic highlighted additional weaknesses within these systems that require a national approach to improve. In order to face the challenges of the future, FEMA must also use research and technology to create data-driven solutions and to allow innovation in all programs.

The recommendations recognize that FEMA cannot sustain current operations with the increase in billion-dollar disasters nationwide. Local capacity is critical to the success of any federal disaster program. More importantly, however, local capacity is critical to the success of a community to prepare for, respond to, mitigate against, and recover from the disasters of the future. Finally, the pandemic and other recent events have confirmed one of the NAC's primary goals in crafting this report – to create a FEMA that is hazard agnostic and adaptable to our changing environment, able to meet any future challenge.





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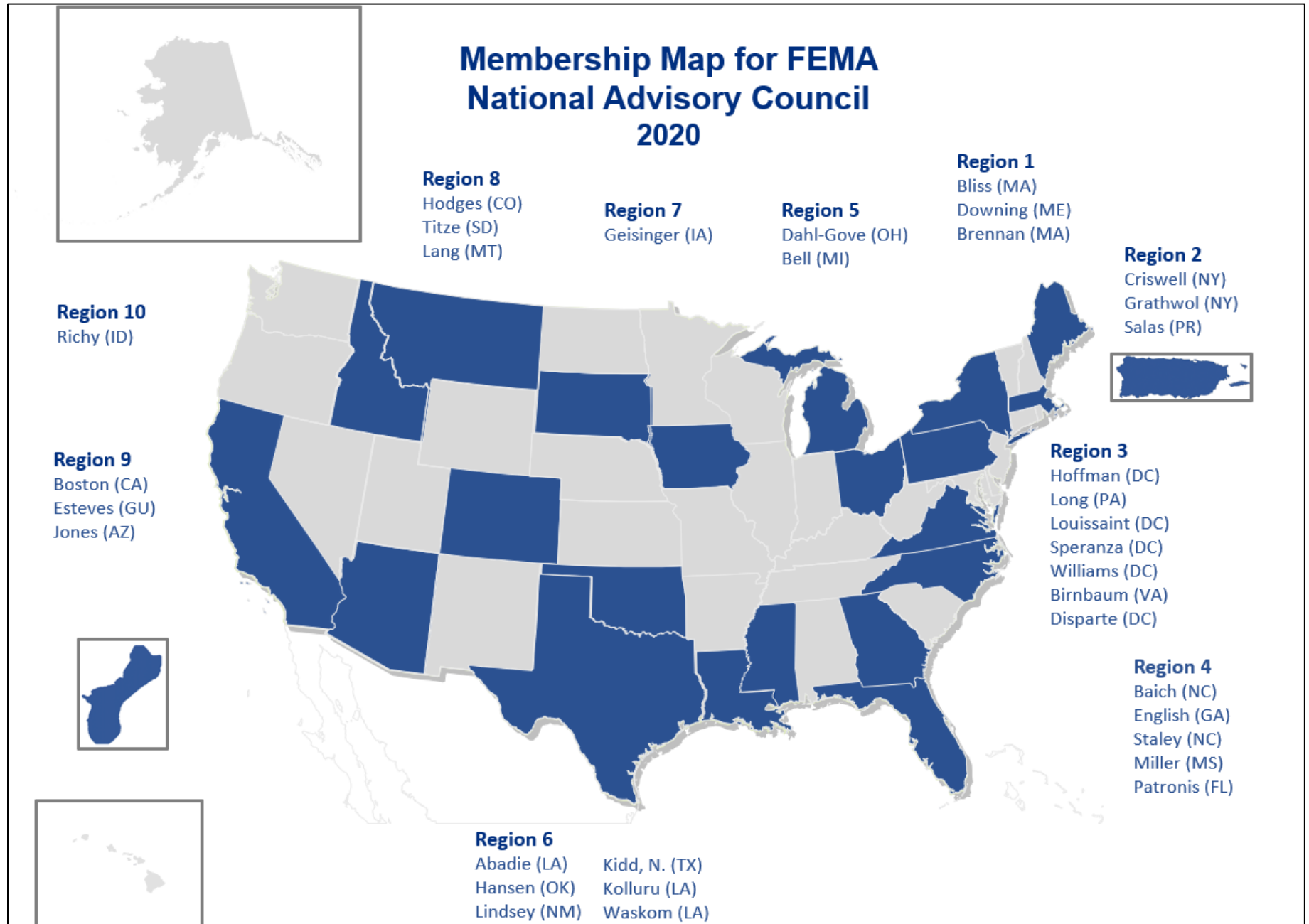
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## NAC GEOGRAPHIC REPRESENTATION





## GLOSSARY

**Community** is a unified groups of individuals with a common purpose before, during and after emergencies and disasters.

**Equality** generally refers to the same level of resources being provided, independent of need. This contrasts with **equity** where more resources are provided to those with greater need and less resources are provided to those with less need.

**Equity** is a state whereby all people achieve at certain minimum outcome. For example, equity in housing would mean that everyone in a community meets a minimum housing threshold (i.e. that they are not homeless). See also equality.

**Network** is a group or system of interconnected people or things.

**Social capital** refers to the networks of relationships among people who live and work in a particular society, enabling that society to function effectively. This includes social norms, trust and networks.

**Social cohesion** is the ability of a community to ensure the welfare of its members, which minimize inequalities and social division.

**Social determinants of health** is a public health framework of five core areas that researchers have shown to strongly drive health outcomes. The areas are: economic stability, education access and quality, health care access and quality, neighborhood and built environment, social and community context.

**Social norms** is a part of social capital that involves the identification of cultures and norms in the fabric of a community.

**Whole of government** refers to all departments and all levels in government.

**Whole of community** refers to all stakeholders in a community or region, whether government, private sector, NGO, faith-based, or other partners in emergency management. It is the most broad and inclusive term.



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