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Regulatory Affairs Division
Office of Chief Counsel
Federal Emergency Management Agency
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Washington, DC 20472-3100

VIA Federal eRulemaking Portal: <http://www.regulations.gov>

RE: Docket ID FEMA-2019-0018/American Society of Civil Engineers comments on the Building Resilient Infrastructure and Communities Policy

The American Society of Civil Engineers (ASCE) is pleased to offer the following comments on the Federal Emergency Management Agency's (FEMA) request for comments on the *Building Resilient Infrastructure and Communities Policy* as posted on April 10, 2020, with the comment period closing on May 11, 2020.

Introduction

Founded in 1852, ASCE is the country's oldest civil engineering organization. Representing more than 150,000 civil engineers from private practice, government, industry, and academia, ASCE is dedicated to the advancement of the science and practice of engineering. ASCE members represent the profession that plans, designs, and builds much of the nation's infrastructure.

To achieve a goal of obtaining and maintaining a state-of-good-repair for all infrastructure at the lowest life-cycle cost, designers and planners are encouraged to incorporate system resilience - the ability of a project or system to withstand and recover to full operability from extreme events quickly and efficiently - into the decision-making process. The increasing frequency and intensity of natural disasters as well as deliberate destructive events, combined with increasing population densities, reliance on technology, and system interdependencies, have demonstrated vulnerabilities in the nation's infrastructure. An important component of resilience is understanding the impact of the loss of infrastructure and the timeline and cost to restore its function following an extreme event.

Every four years, ASCE publishes the *Infrastructure Report Card*, which grades 16 of the nation's major infrastructure categories using a simple A to F school report card format. The Report Card examines the current infrastructure needs and conditions by assigning grades and making recommendations to raise them. ASCE's *2017 Infrastructure Report Card* gave our nation a "D+." Among ASCE's key recommendations to "raise the grade" is to utilize new approaches, materials, and technologies to ensure our infrastructure is more resilient – to more quickly recover from significant weather and other hazard events – and sustainable – improving the "triple bottom line" with clear economic, social, and environmental benefits.

Background

On October 5, 2018, President Trump signed the Disaster Recovery Reform Act of 2018 (DRRA) into law as part of the Federal Aviation Administration Reauthorization Act of 2018. Section 1234 of DRRA authorizes the National Public Infrastructure Pre-Disaster Mitigation fund, which will be funded as a 6 percent set-aside from disaster expenses, to allow for a greater investment in mitigation before a disaster. To implement this authority, the Federal Emergency Management Agency (FEMA) created the Building Resilient Infrastructure and Communities (BRIC) Program and on April 17, 2020, published a draft policy to provide guidelines for how the program is to be administered.

ASCE applauds FEMA for its efforts to implement the transformational provisions of DRRA and for engaging the stakeholder community, including ASCE, in the implementation of BRIC. We are encouraged to see that FEMA has been responsive to its stakeholders by incorporating feedback in the key provisions within the BRIC Proposed Policy.

As the stewards of the nation's infrastructure, ASCE:

- supports sustained efforts to improve professional practices in planning, design, construction, operation, maintenance and reuse/decommissioning that mitigate the effects of natural and man-made hazards;
- develops standards and participates in other national and international initiatives that incorporate resilience as a fundamental performance criterion and encourage mitigating the effects of hazards and improvement of warning systems against impending hazards; and
- collaborates and cooperates with government, citizen, and private agency initiatives and supports activities for hazard mitigation, emergency preparedness, and disaster recovery.

ASCE stands ready to continue to work with FEMA and other federal partners to promote resilience and to protect the public health, safety and welfare.

Comments

ASCE congratulates FEMA for its efforts to date to implement a pre-disaster program that follows the intent of Congress when it enacted DRRA. Congress recognized that it is not sustainable to continue to rebuild the same way following disasters and in order to save lives and prevent economic loss we must focus our efforts to rebuild resiliently. The BRIC program was designed to capitalize on the success of FEMA's Pre-Disaster Mitigation Program and the impacts of traditional mitigation projects. The program also expands resources allowing for federal funding for new, innovative projects related to infrastructure and individual/community resilience that not only reduce risks but are a wise investment of federal dollars and resources. It is encouraging that the Policy and Guidelines published by FEMA will drive the Notice of Funding Opportunity (NOFO) for each annual iteration of the BRIC Program.

1. The BRIC Policy provides broad guidelines for a scalable program which allows for applicants to be creative and transformational in disaster mitigation.

The Proposed Policy represents a broad framework under which a streamlined and scalable grant program can be executed, providing minimal administrative burdens on states and local governments. Under these guidelines, applicants can exercise maximum flexibility and creativity to transform the risk profiles of their communities, regions, and states. However, FEMA must provide potential applicants with clear and concise lessons learned and a "field guide" of best practices to help facilitate the design, application, and execution of high impact disaster mitigation projects.

We understand the total amount of funding will be established along with baseline allocations for states and tribal governments. However, we trust that FEMA will continue its active engagement and responsiveness to stakeholder and constituent concerns and will remain wholly consistent with its published priorities and guidelines. One opportunity to allay concerns would be to eliminate the permissive language in the Requirements section (A)(1). While the law is wholly permissive and leaves the discretion with the Agency, articulating that FEMA "will" versus "may" set aside six percent will lend a sense of confidence in the funding levels and execution of a program to the fullest extent authorized by law.

ASCE commends FEMA for encouraging grantees to consider critical lifeline systems and not just individual components. ASCE supports systems thinking and a larger scale approach. Lifelines are systems and need to be approached as such. While each component is important, all infrastructure systems must work together for the assets to be functional.

2. BRIC enhances the adoption and enforcement of building codes AND requires all projects conform with the latest-published codes, specifications, and standards.

ASCE is pleased that within the BRIC policy, FEMA continues to be a strong supporter of enhanced building codes and standards. This was evidenced by the policy making clear, in line with congressional intent, that BRIC funds can be specifically used to "establish, adopt, and

enforce codes and standards consistent with statute.” Further, the eligibility criteria in (D)(3)(b) requiring that all mitigation projects must “at a minimum, be in conformance with the latest published editions of relevant consensus-based codes, specifications, and standards that incorporate the latest hazards-resistant designs” is an essential piece of the BRIC policy which aligns the execution of the program with objectives to promote the adoption and enforcement of building and infrastructure codes and standards. We know that this will protect the federal investment and ensure the greatest return in avoided future damage.

These requirements also promote and encourage the use of resilient materials and life safety methods in the construction of lifeline infrastructure. The enforcement of these standards dramatically increases infrastructure resilience and does not exclude any particular material as long as the materials and construction techniques meet those resilient standards. BRIC funding can be used to encourage and facilitate the replacement of vulnerable lifeline infrastructure with infrastructure that meets higher standards, using resilient materials and life safety measures so that critical services avoid or reduce damage, service interruptions, and reconstruction costs. This will dramatically increase resilience in many areas around the country.

ASCE encourages FEMA to replicate these efforts in other disaster assistance programs, such as through the full implementation of federal disaster assistance cost-share adjustments, authorized by Congress in the Bipartisan Budget Act of 2018.

ASCE also encourages FEMA to continue to support the widespread adoption and enforcement of up-to-date building and infrastructure codes. Our future depends on resilient infrastructure, and as civil engineers, we are thinking about building infrastructure that will last for one hundred years, or more. To ensure our infrastructure is more resilient and sustainable, we must plan for the future with new technologies, approaches, materials, and policies that focus on long-term dividends rather than upfront costs.

This new program promotes proactive investment in community resilience rather than the constant reactive disaster spending by supporting projects that incorporate ASCE 7: Minimum Design Loads and Associated Criteria for Buildings and Other Structures and ASCE 24: Flood Resistant Design and Construction Standards into building and design. These are accredited, consensus-based engineering standards that serve as the primary reference of structural design requirements in all U.S. building codes.

More specifically, for the overhead electric infrastructure, requiring the following ASCE Standards and Manuals of Practice for all new and replacement projects will increase reliability and resiliency of the transmission and distribution grid:

- ASCE 74, Guidelines for Electrical Transmission Line Structural Loading,
- ASCE 10: Design of Latticed Steel Transmission Structures,
- ASCE 48: Design of Steel Transmission Pole Structures,
- ASCE 141: Wood Pole Structures for Electrical Transmission Lines,

- ASCE 104: Recommended Practice for Fiber-Reinforced Polymer Products for Overhead Utility Line Structures,
- ASCE 123: Prestressed Concrete Transmission Pole Structure, and
- ASCE 113: Substation Structure Design Guide.

ASCE 7 describes the means for determining flood, tsunami, snow, rain, atmospheric ice, earthquake, and wind and other loads and their combinations for general structural design. ASCE 7 was updated in 2017 to reflect our changing world and to make infrastructure more resilient in the face of new challenges. It was updated to reflect the best understanding of the influence of loads on structures and continues to be the foundation for loads specified in most building codes in the United States. The new edition features new wind-speed and seismic maps, new state-coordinated snow data for seven mountainous states, and entirely new chapters on tsunami and fire design.

ASCE 24 sets the requirement and expected performance for buildings and structures built in flood hazard area. Structures built to code are better able to resist flood loads and flood damage.

ASCE 74 applies ASCE 7 specifically to overhead electric and communication lines. The standard addresses how to apply the meteorological events such as wind, ice, and temperatures, as well as other contingency events that often occur on overhead lines. An updated edition is currently in ASCE Publications and will address the increased events due to climate change as well as the public and governmental call for increased reliability and resiliency in the electric grid.

ASCE 10, 48, 141, 104, and 123 all address the detailed and proper methods for structural design and analysis of lattice steel, tubular steel, wood, FRP (fiberglass), and concrete structures used the transmission and distribution grid using the loads developed in ASCE 74.

ASCE 113 addresses the proper way to design and analyze electrical substations.

Some utilities have already voluntarily adopted these standards and practices and have seen a dramatic increase in their reliability and resilience. Others only follow the IEEE National Electrical Safety Code (NESC) which is a safety code, not a design code. The NESC includes specific exemptions for poles under 60 feet from meeting even basic engineering requirements. Further, many wood pole structures were designed using archaic simplified analysis methods, which result in smaller wood poles than required. For this reason, many wood poles are still lost in non-severe thunderstorms. While more intense events like Superstorm Sandy saw 80,000 wood poles destroyed. To compound matters, when poles break, they are usually replaced with the same size pole. Therefore, ASCE encourages FEMA to require upgrading the design methods and selecting the proper structures required today, and not simply use the same size pole that was selected using weaker loadings and poor design methodologies.

Our future depends on resilient infrastructure. As civil engineers, we are thinking about building infrastructure that will last for 50 to 100 years, or more and we are ensuring our infrastructure

is more resilient and sustainable as we plan for the future with new technologies, approaches, and materials. Resilience includes the infrastructure system's ability to withstand or protect against broad-scale impacts from multi-hazard threats and incidents. Is the infrastructure able to quickly recover and provide critical services with minimum consequences for public safety and health, the economy, and national security?

ASCE supports sustained efforts to improve professional practices in planning, design, construction, operation, maintenance and reuse/decommissioning that mitigate the effects of natural and man-made hazards. ASCE is committed to developing standards and participating in other national and international initiatives that incorporate resilience as a fundamental performance criterion and encouraging the mitigation of effects from hazards and improving the warning systems for impending hazards.

3. BRIC will facilitate a competitive program that focuses both on residential resilience and disaster resilient infrastructure.

The BRIC Policy makes clear that FEMA will continue to build upon the successes of traditional mitigation fostered through its Pre-Disaster Mitigation Program and allow for new, innovative, and transformational projects that impact both lifeline infrastructure and individual resilience. FEMA is to be applauded for its focus on the stabilization of lifelines across infrastructure sectors and has continued to focus on increasing the resilience of these lifelines through mitigation. Focusing on these lifelines, such as power, water, and sheltering, allows decision-makers to better identify key risks and facilities and more readily target projects that can help protect or restore critical functions to reduce and eliminate disaster effects.

FEMA has also never been more keenly focused on what resilience means to the individual and household. Under the Proposed BRIC Policy, FEMA will facilitate state-managed Safe Home/residential resilience programs and other programs that promote residential resilience, relying on experts like our partners at the Insurance Institute for Building and Home Safety (IBHS) to provide the technical expertise, data, and validation that can be used to help build programmatic cost benefit approvals by FEMA for projects done to individual structures.

4. BRIC will facilitate partnerships and leverage private sector involvement and investment.

ASCE was encouraged to see the following principle listed in the BRIC Policy: "Promote partnerships and enable high-impact investments to reduce risk from natural hazards with a focus on critical services and facilities, large-scale public infrastructure, public safety, public health, and communities." The most impactful resilience projects will involve multiple strategic partners working together with public and private investment. This also means that FEMA will work diligently to ensure that large infrastructure projects do not deter investment in smaller, community-based projects.

BRIC will be able to take advantage of work already being done by government partners, the private sector, and nonprofits, including best practices, lessons learned, training and education.

ASCE recommends that FEMA consider adding specific language to the BRIC Policy that clarifies that while a nongovernmental entity cannot be a direct applicant for BRIC funds, a state or local government can apply for funds that will be executed in partnership with that entity for the benefit of implementing a cost-effective, risk-reducing mitigation project. FEMA must facilitate the ability of state and local partners to utilize the expertise and knowledge of industry and private sector partners to increase disaster resilience.

5. The BRIC Program and Policy must leverage existing programs and other streams of funding.

Congress established that BRIC was intended to build upon and leverage existing disaster recovery programs that encourage mitigation, such as Public Assistance Mitigation, the Hazard Mitigation Grant Program available post-disaster, and the National Flood Insurance Program, as well as provide for the ability to “blend” multiple lines of funding from various sources, both public and private. In this vein, the BRIC Program should articulate how multiple (i.e. not duplicative) lines of funding can be brought together to maximize the outcomes of these investments.

Conclusion

ASCE once again thanks FEMA for the creation and implementation of the BRIC program that so closely aligns with the goals set by Congress in the Disaster Recovery and Reform Act. ASCE believe the program will support the goal of creating a more resilience national infrastructure. ASCE is also encouraged by FEMA’s target of September 2020 to open the BRIC program application cycle. This represents a significant increase in the reliability of funding for grants to implement mitigation programs that will reduce the loss of lives and property across the nation.

If you need more information or ASCE can be of further assistance, please do not hesitate to contact Martin Hight, ASCE’s Senior Manager for Government Relations at mhight@asce.org or 202-789-7843.