



FEMA

STATEMENT

OF

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BEFORE

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RESEARCH AND TECHNOLOGY SUBCOMMITTEE
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES
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*FROM RISK TO RESILIENCE: REAUTHORIZING THE EARTHQUAKE AND WINDSTORM
HAZARDS REDUCTION PROGRAMS*

Submitted

By

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Chairman Collins, Ranking Member Stevens, and members of the Subcommittee: My name is Edward Laatsch, and I am the Director of the Planning, Safety and Building Science Division in the Risk Analysis, Planning and Information Directorate within the Federal Emergency Management Agency (FEMA). Thank you for the opportunity to discuss FEMA's supporting role within the National Earthquake Hazards Reduction Program (NEHRP) and the National Windstorm Impact Reduction Program (NWIRP).

FEMA's mission is helping people before, during, and after disasters. FEMA is not just a response and recovery agency. We also work to mitigate the worst impacts of disasters before they occur. Strengthening the security and resilience of the nation against earthquakes and extreme wind events is a vital aspect of this responsibility.

Earthquakes and windstorms can have devastating impacts. The Puerto Rico earthquake sequence, which included a magnitude 6.4 earthquake in January 2020, resulted in a large population being displaced from their homes and an estimated \$3.1 billion in economic losses. In 2021, deadly tornadoes swept through Western Kentucky, causing an estimated \$305 million in damage to homes, houses of worship, and businesses in Mayfield, Dawson Springs, Bowling Green, and other communities. According to joint analysis by the U.S. Geological Survey (USGS) and FEMA, earthquakes cost the nation an estimated \$14.7 billion annually in building damage and associated losses, while the National Oceanic and Atmospheric Administration (NOAA) reports that severe storms and tropical cyclones have cost an estimated \$41.7 billion annually in the United States from 1980 to 2023.

Although the risk of earthquakes and extreme windstorms varies across the country, no state, locality, Tribal nation, or territory is immune. In addition, population growth and continued urbanization across the United States have led to increases in potential risk. To help address the nationwide risk posed by earthquake and windstorm damages, Congress authorized the creation of NEHRP in 1977 and NWIRP in 2004. The objective of NEHRP and NWIRP is to achieve major measurable reductions in the losses of life and property from earthquakes and windstorms, respectively. According to FEMA's 2020 Building Codes Save Study, the adoption of building codes and standards, which are informed by NEHRP recommendations, have resulted in \$60 million in total losses avoided from seismic events since 2000. Meanwhile, NWIRP has played an important role in mitigating the number of fatalities and total disaster damage caused by Tropical Storms and Severe Weather via the creation of effective mitigation techniques and the promotion of preparedness and mitigation measures.

FEMA is working to support the goals of NEHRP in coordination with the National Institute of Standards and Technology (NIST- Lead Agency), the National Science Foundation (NSF), and the USGS. Similarly, FEMA is supporting NWIRP in coordinating with NIST (Lead Agency), NSF, and NOAA.

FEMA's supporting role within NEHRP includes the translation of results from earthquake research and problem-focused studies into guidance, training, and support services. Our supporting role within NWIRP includes the development of risk assessment tools and windstorm-related data collection and analysis. One of FEMA's primary contributions to both

programs is the improvement and promotion of better building and retrofit practices through guidance, training, support, and participation in the development of model building codes and standards both before and after disasters. In fact, FEMA recently published the NEHRP Recommended Revisions to the Seismic Evaluation and Retrofit of Existing Buildings, which is the culmination of a five-year project that will inform the American Society of Civil Engineers (ASCE) Structural Engineering Institute (SEI) consensus standard process.

Although Congress directs FEMA to establish minimum funding levels for NEHRP, it does not provide the Agency appropriations specifically for its contributions to NEHRP or NWIRP. However, FEMA continues to play an important role in supporting these programs' objectives, including by leveraging funding that can support multipurpose objectives. For example, the FEMA NEHRP Earthquake State Assistance Grant Program, which includes the Individual State Earthquake Assistance and Multi-State and National Earthquake Assistance Grant Programs, provides funding to eligible entities with the intent of increasing and enhancing the effective implementation of earthquake risk reduction. In support of NWIRP, FEMA has improved windstorm safety protection measures by issuing saferoom guidance publications, with the most recent edition released in April 2021, leading to the development of a storm shelter design and construction standard that is used by design professionals across the nation. Moreover, as of November 2020, FEMA has provided approximately \$1.2 billion in FEMA funds towards the design and construction of over 40,000 residential and nearly 2,200 community safe rooms in 25 states and territories.

The development and enforcement of up-to-date building codes is among the most effective strategies available for natural hazard risk reduction, while also being one of the most cost-effective ways to safeguard our communities. Modern building codes and standards provide a range of smart design and construction methods that help protect people both physically and financially—saving lives, reducing property damage, and helping communities recover more quickly. Notably, every dollar invested in building code adoption provides 11 times more in savings by reducing damage and helping communities recover more quickly. Communities that have adopted modern building codes are already saving an estimated \$1.6 billion a year in avoided damage from major hazards, with projected cumulative savings of \$132 billion through 2040.

FEMA also plays a key role in developing guidance and related materials for updates to the seismic and wind provisions of model building codes and associated design standards. This guidance is necessary for engineers, architects, building officials, and owners to understand why earthquake and windstorm damages happen and to learn how to prevent those damages from reoccurring. FEMA has produced many of the NEHRP publications used to document and promote seismic methods and works within code- and standards-development cycles to incorporate consensus recommendations into nationally applicable model building codes and standards.

In addition to FEMA's work with our federal partners, the agency also supports other organizations and initiatives that bring people together to reduce earthquake and windstorm risks. FEMA earthquake mitigation and preparedness activities such as National Earthquake

Technical Assistance Program (NETAP) training and support for the world's largest annual earthquake drill, the Great ShakeOut, are examples of these activities. FEMA also led the development of educational materials in Puerto Rico to inform the determination of best available refuge areas from windstorms in existing buildings. Moreover, FEMA develops, provides, and trains communities in the use of HAZUS, a free software program that estimates risk from earthquakes, floods, tsunamis, and hurricanes using geographic information system-based models. The loss estimates generated by HAZUS enhance earthquake and windstorm preparedness and response planning and help states and localities assess the need for specific risk-reduction strategies.

FEMA also promotes the goals of NEHRP and NWIRP by providing grant funding for eligible projects through our Hazard Mitigation Assistance (HMA) grants. HMA grants provide our State, Local, Tribal, and Territorial (SLTT) partners with a reliable stream of funding for larger mitigation projects through nationwide grant programs. For instance, through the Hazard Mitigation Grant Program, FEMA provides a critical opportunity for SLTT partners to develop hazard mitigation plans and rebuild in a way that reduces, or mitigates, future disaster losses in their communities following a presidentially declared disaster.

I want to specifically thank Congress for both its bipartisan support to the Building Resilient Infrastructure and Communities (BRIC) program's development in 2018, as well as its continued investment in the program. The BRIC program is one of FEMA's cornerstone resiliency efforts, providing a critical opportunity for SLTT partners to invest in a more resilient nation, reduce disaster-related suffering, and lessen future disaster costs. For the Fiscal Year (FY) 2022 BRIC total grant cycle, 54 states and territories, 34 Tribes, and the District of Columbia were selected to receive funding, pending the outcome of the final review process, while projects from 38 states, including the District of Columbia, were selected for final review through the BRIC National Competition. In October 2023, President Biden announced an additional \$1 billion in FY 2023 funding for the BRIC program. This investment will protect lives, result in less complex disaster recoveries, and can help us to break the cycle of disaster damage, reconstruction, and repeated damage.

While FEMA will always be ready to respond when disasters occur, we recognize that true success rests in mitigating the worst impacts of disasters before they happen, reducing both the loss of life and economic disruption. In implementing these and other mitigation programs, FEMA is working to eliminate the barriers that communities with limited capacity may face when seeking mitigation funding. These mitigation efforts are particularly important for underserved communities that are most vulnerable to the impacts of natural hazards.

As we look to the challenges ahead, FEMA looks forward to working with both our NEHRP and NWIRP partners and the Members of this Committee to build a more resilient nation. Thank you for the opportunity to testify. I look forward to answering your questions.