

The National Earthquake Hazards Reduction Program (NEHRP) Overview

Reducing Earthquake Risk

Earthquakes cannot be prevented, but their impacts on life, property, and the economy can be managed. Congress first authorized the National Earthquake Hazards Reduction Program (NEHRP) in 1977 (Public Law 95-124) to “reduce the risks of life and property from future earthquakes in the United States.” The most recent reauthorization was Public Law 115-307, signed in December 2018.

The role of NEHRP is to coordinate the federal government’s earthquake-related activities and provide the scientific and engineering information, knowledge, and technologies needed to prepare for earthquakes and reduce the costs of losses and recovery. To fulfill this role, NEHRP partners with the community of earthquake professionals in academia and in business, government, technical, professional and codes and standards organizations involved in risk reduction.

A Federal Partnership

Focusing on building codes and standards, technical guidance, awareness and education, NEHRP is a collaborative effort among FEMA, the National Institute of Standards and Technology (NIST), the NEHRP lead agency, the National Science Foundation (NSF) and the United States Geological Survey (USGS). These agencies coordinate to improve the understanding of earthquake hazards and risk and to reduce the nation’s vulnerability to earthquakes.

The agencies research the causes and effects of earthquakes to produce technical guidance, develop earthquake-resistant design, construction standards, and techniques and educate the public about earthquake hazards and mitigation. Visit [NEHRP Agencies](#) for more information.

FEMA

Under NEHRP, FEMA is responsible for developing effective earthquake risk reduction tools and promoting their implementation, as well as supporting the development of disaster-resistant building codes and standards. FEMA’s NEHRP state assistance team coordinates with FEMA regions, states, territories, nonprofits, institutions of higher education, and other public and private partners.

National Institute of Standards and Technology

NIST, in addition to serving as the lead NEHRP agency, develops, evaluates and tests earthquake resistant design and construction standards and practices for implementation in the building codes and engineering practice. The NIST Engineering Laboratory (EL) Materials and Structures Division conducts NEHRP’s applied research activities.



FEMA



National Science Foundation

NSF supports research in earth sciences, engineering social, behavioral and economic sciences to understand the causes and impacts of earthquakes. Research grants to universities other organizations support NSF's NEHRP-related support. These grants are awarded primarily through the agency's Directorate for Engineering and Directorate for Geosciences.

United States Geological Survey

USGS operates and supports earthquake monitoring, data analysis and notification facilities. It also provides earthquake hazard assessments and conducts and supports targeted research on earthquake causes and effects. The Earthquake Hazards Program Office and USGS Headquarters lead the agency's NEHRP work. USGS scientists throughout the country conduct research and monitoring activities. Universities working on grants, state geological surveys and other organizations also support the USGS.

NEHRP MISSION

The mission of NEHRP is to develop, disseminate, and promote knowledge, tools, and practices for earthquake risk reduction—through coordinated, multidisciplinary, interagency partnerships among the NEHRP agencies and their stakeholders—that improve the Nation's earthquake resilience in public safety, economic strength, and national security.

Cooperating Organizations

The NEHRP agencies support and work with many non-profits and institutions of higher education. These organizations and many others are essential in furthering the work of NEHRP.

NEHRP GOALS

- GOAL 1: Improve understanding of earthquake processes and impacts.
- GOAL 2: Develop cost-effective measures to reduce earthquake impacts on individuals, the built environment, and society-at-large.
- GOAL 3: Improve the earthquake resilience of communities nationwide.

Technical Guidance

Based on research conducted by the NEHRP agencies, FEMA develops technical design and construction guidance manuals, digital tools and training materials on seismic safety. State and local governments, building code officials, architects, engineers and building industry professionals use these materials to:

- Design and build homes, businesses and infrastructure
- Retrofit existing buildings

- Promote the use of building codes in at-risk areas.

FEMA provides the following types of information:

- Guidance and best practices on seismic design, construction and upgrade techniques
- Procedures for identifying, documenting, and ranking earthquake hazards and assessing the resultant risks to buildings and infrastructure
- Techniques for evaluating and assessing types of structures damaged by earthquakes
- Methods for estimating seismic upgrade costs and benefit-cost models for upgrading government buildings
- Recommended improvements to design and construction standards for structures in earthquake-prone areas
- Performance-based design and construction guidance for building owners, managers, and regulators to best determine how a building will perform in an earthquake of specific parameters

Grant Funding to States and Territories

- NEHRP agencies also provide grant funding directly to states and territories for a wide variety of earthquake risk mitigation and outreach activities and projects.
- Information on the FEMA NEHRP State Assistance grant program can be found [here](#).

Public Education Materials

The NEHRP agencies, with their partners, produce the following types of earthquake safety materials:

- Brochures and web-based materials for homeowners and businesses
- Techniques for upgrading homes and reducing hazards in homes and businesses
- Earthquake curricula for grades K-6 and 7-12 and safety criteria for school administrators
- Tools to assist disaster educators, incident managers, and others to organize earthquake safety programs

For more information on FEMA's NEHRP activities and its resources, visit [FEMA Earthquake](#).