

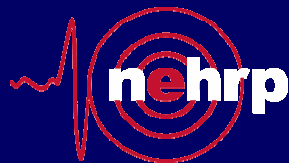
National Earthquake Hazards Reduction Program

... a research and implementation partnership

NEHRP Annual Report

Overview for Advisory Committee on Earthquake Hazard Reduction

October 2007



FEMA

NIST
National Institute of
Standards and Technology



USGS
science for a changing world

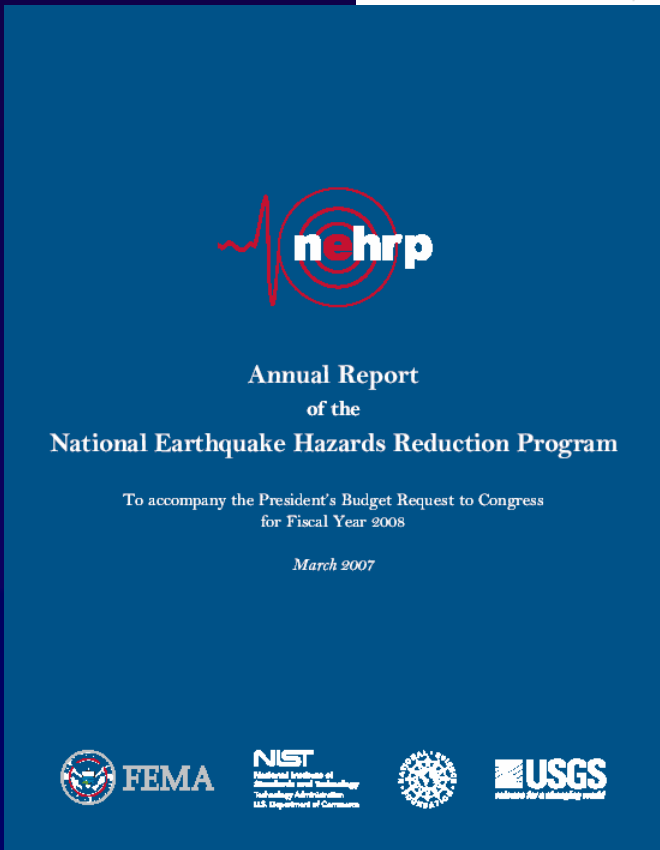
national **earthquake** hazards reduction program

Presentation Overview

- Background
- 2007 Report
- Lessons Learned
- Looking Forward



Report was completed in March 2007 and transmitted to Congress by the ICC - Directors of NIST, OSTP, FEMA, NSF, OMB, and USGS.



Introduction

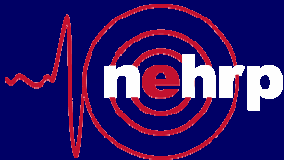
Congress first authorized the National Earthquake Hazards Reduction Program (NEHRP) in 1977, with the goal of reducing losses from earthquakes nationwide. Congress has reauthorized NEHRP numerous times since then, most recently in 2004 (Public Law 108-360). The Coordinating Committee (ICC) for NEHRP is the President's budget request to Congress, and the Committee on Resources of the House of Representatives and the Committee on Science and Transportation of the Senate.

Coordination responsibilities from the National Institute of Standards and Technology (NIST) to establish the program for Fiscal Year (FY) 2006. The program provides cost-share funds and support for FY 2007, provides program information for FY 2008. It also describes program information in Law 108-360.

NEHRP: These agencies and their primary

CONCY

Department into effective earthquake loss reduction. The program provides seismic safety of new and existing structures, provides information about building codes, disaster-resilient communities, helps state and local governments estimate potential losses due to earthquakes, and provides awareness of earthquake loss.



Background

- Requirement: Public Law 108-360, 25 October 2004

“The Interagency Coordinating Committee shall transmit, at the time of the President’s budget request to Congress, an annual report to the Committee on Resources of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.”



Background (continued)

Such a report shall include:

- A.** The Program budget for the current fiscal year for each agency and for each major goal established by the legislation.
- B.** The program budget for the next fiscal year...
- C.** A description of the activities and results of the Program during the previous year, including an assessment of furthering the goals of the strategic plan.



Background (continued)

Such a report shall include (continued):

- D.** A description of the extent to which the Program has incorporated the recommendations of the Advisory Committee.
- E.** A description of related activities, with budgets, carried out by NEHRP agencies.
- F.** A description of activities, with budgets, related to the FEMA state grants and assistance program.



Report Structure

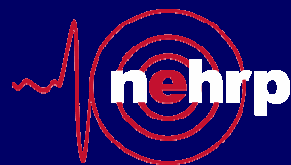
- Preface, Executive Summary, Introduction
- Report Approach, Structure, and Features – Links new statutory activities to program goals of existing strategic plan
- NEHRP Budget for FY 2007
- NEHRP Budget for FY 2008 (proposed)
- Activities and Results for FY 2005 and FY 2006
- Related non-NEHRP agency activities
- State reports on activities under FEMA grants



2007 Budget

Table 1. NEHRP 2007 Enacted Budget Listed by Statutory Program Activity

Statutory "Program Activity"	Funds Allocated to Activity (\$M) ¹				
	FEMA ²	NIST	NSF	USGS	Total
1. Develop effective measures for earthquake hazards reduction. ³	3.5	0.9		29.6	34.0
2. Promote the adoption of earthquake hazards reduction measures. ⁴	2.0	0.3		3.5	5.8
3. Improve the understanding of earthquakes and their effects. ⁵	3.6	0.5	30.0	10.4	44.5
4. Develop and operate ANSS (USGS), NEES (NSF), and GSN (USGS & NSF).					
ANSS				8.0	8.0
NEES			21.3		21.3
GSN			3.5	3.9	7.4
Total	9.1	1.7	54.8	55.4	121.0



2008 Budget

Table 2. NEHRP 2008 Requested Budget Listed by Statutory Program Activity

Statutory "Program Activity"	Funds Allocated to Activity (\$M) ¹				
	FEMA ²	NIST	NSF	USGS	Total
1. Develop effective measures for earthquake hazards reduction. ³	3.5	4.0		30.3	37.8
2. Promote the adoption of earthquake hazards reduction measures. ⁴	2.0	0.5		3.6	6.1
3. Improve the understanding of earthquakes and their effects. ⁵	3.6	1.9	30.0	10.6	46.1
4. Develop and operate ANSS (USGS), NEES (NSF), and GSN (USGS & NSF).					
ANSS				8.0	8.0
NEES			22.2		22.2
GSN			3.5	4.0	7.5
Total	9.1	6.4	55.7	56.5	127.7



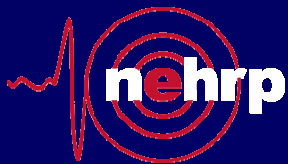
2006 – 2007 Program Highlights: **Effective measures for earthquake hazards reduction**

- **Performance-Based Seismic Design**
- **Recommended provisions for new and existing buildings**
- **Homebuilders guide**
- **Blast benefits of seismic design**
- **HAZUS – MH**
- **Regional consortia – CREW, CUSEC, WSSPC**
- **New seismic hazard map for Alaska**
- **Urban seismic hazard maps – Memphis and San Francisco Bay areas**
- **Scenario loss modeling**
- **Development of national seismic hazard map**



2006 – 2007 Program Highlights:
Promote the adoption of earthquake hazard reduction measures

- **Joint activity – 1906 San Francisco Earthquake Centennial**
- **Promoting Seismic Safety – Guidance for Advocates**
- **EERI web-based Mitigation Center**
- **NEHRP web site links of all NEHRP agencies**
- **Inter-agency Committee on Seismic Safety in Construction**
- **Revision of “Putting Down Roots in Earthquake Country”**



2006 – 2007 Program Highlights: **Improve understanding of earthquakes and their effects**

- **Mid America Earthquake Center – MAEviz, DEEPSOIL, 3-D Damage Characterization.**
- **Multidisciplinary Center for Earthquake Engineering Research – base isolation, rehab of acute care centers, risk analysis of highway systems**
- **Pacific Earthquake Engineering Center – strong motion database, software for engineering analysis and design including PBSO, existing concrete buildings, building safety benchmarking.**
- **EERI post-earthquake studies**



2006 – 2007 Program Highlights:

Improve understanding of earthquakes and their effects

- **Southern California Earthquake Center – community modeling of SoCal earthquake region, southern San Andreas Fault study.**
- **Incorporated Research Institutions for Seismology**
- joint support of global network with USGS, data center, field studies, education and outreach.
- **Natural Hazards Center- research and communication of knowledge on mitigation and preparedness.**
- **Parkfield prediction experiment – data analysis**
- **Community model of SF Bay area earthquake region**
- **Detailed soil stability maps of SF Bay area**



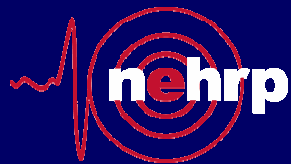
2006 – 2007 Program Highlights: Develop, Operate, and Maintain NEHRP Facilities

- **Advanced National Seismic System (ANSS) – new instrumentation, NEIC improvements, regional earthquake monitoring, cost-benefit study.**
- **Network for Earthquake Engineering Simulation (NEES) – consortium of 15 universities established and operating, cooperation with E-Defense, Sumatra field studies, NEESwood.**
- **Global Seismographic Network (GSN) – Sumatra response, tsunami monitoring expansion, telemetry upgrade.**



2006 – 2007 Program Highlights: Related non-NEHRP activities

- EarthScope
- Grand Challenges for Disaster Reduction – Subcommittee on Disaster Reduction
- US – Japan Panel on Wind and Seismic Effects



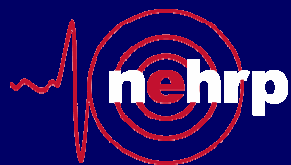
2006 – 2007 Program Highlights: Grants to Promote Implementation

- Alaska
- Arizona
- Arkansas
- California
- Hawaii
- Indiana
- Missouri
- Nevada
- Oregon
- Puerto Rico
- Southern California
- Utah
- Washington



Lessons Learned

- **Structure was awkward.**
- **Took too long – 6 months. Reworked development schedule.**
- **Possibly too wordy – need tighter control of, or attention to, content?**
- **Layout and production was good.**
- **Needs excitement – we've got a good story to tell.**



2008 Annual Report Status

- Outline has been developed to use new Strategic Plan goals and to focus more on key activities, less on details
- Agencies now gathering data
- Key target dates:
 - First draft to PCWG: 10/31/07
 - NIST review of first draft: 11/19/07 – 12/12/07
 - DoC review: 12/13/07 – 12/31/07
 - OMB/OSTP/Agency review: 1/2/08 – 1/14/08
 - Release: Early Feb 08





Future earthquake engineers shake building models in fun educational programs (Photo credit Tana Hutchinson, PEER).

