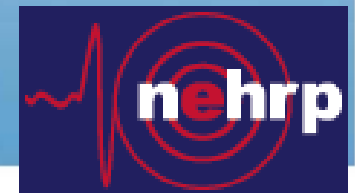


# FEMA Update – ACEHR Committee Meeting November 2012

**Edward Laatsch, P.E.**  
**Chief, Building Science Branch**  
**Federal Insurance and Mitigation**  
**Administration**



FEMA



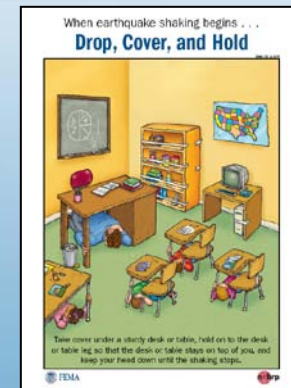
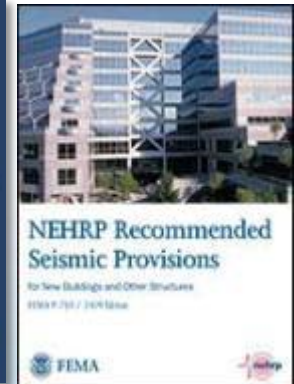
# Outline

- Staffing and Budget Update
- Recent Accomplishments
- 2013 Priorities
- 2012 ACEHR Recommendation Responses
- Challenges and Opportunities

# FEMA Role in NEHRP

## NEHRP Objectives & Activities

1. Guidance Development (new and existing buildings)
2. Building Codes and Standards
3. Training (current, planned and future strategy)
4. Outreach (strategic communication)
5. State and Local Coordination (NETAP, EMPG, State Assistance)
6. Partnerships (consortia, EERI)
7. Disaster Support – learning from EQ



# FEMA NEHRP Activities

**FEMA has nine responsibilities under NEHRP -**

- 1. Promote implementation of research results**
- 2. Promote better building practices**
- 3. Operate program of grants & assistance to enable States**
- 4. Support implementation of comprehensive earthquake education and awareness program,**
- 5. Assist Federal agencies, & private sector groups in preparation & dissemination of seismic design guidance & development of performance-based design guidelines**
- 6. Develop, coordinate, & execute the National Response Plan**
- 7. Develop approaches to combine earthquake hazards reduction with other natural and technological hazards.**
- 8. Provide preparedness, response, and mitigation recommendations to communities after an earthquake prediction has been made.**
- 9. Enter into cooperative agreements or contracts to establish demonstration projects on earthquake hazard mitigation.**

# How We See Ourselves

## Building Science *for Disaster-Resilient Communities*



Mitigation  
Works

# Who We Are – FEMA NEHRP HQ

**Edward Laatsch, P.E.** – Branch  
Chief

**Tammy Roy** – Management  
Analyst

**Claudette Fernandez** – EQ State  
Assistance/NETAP/Implement  
ation

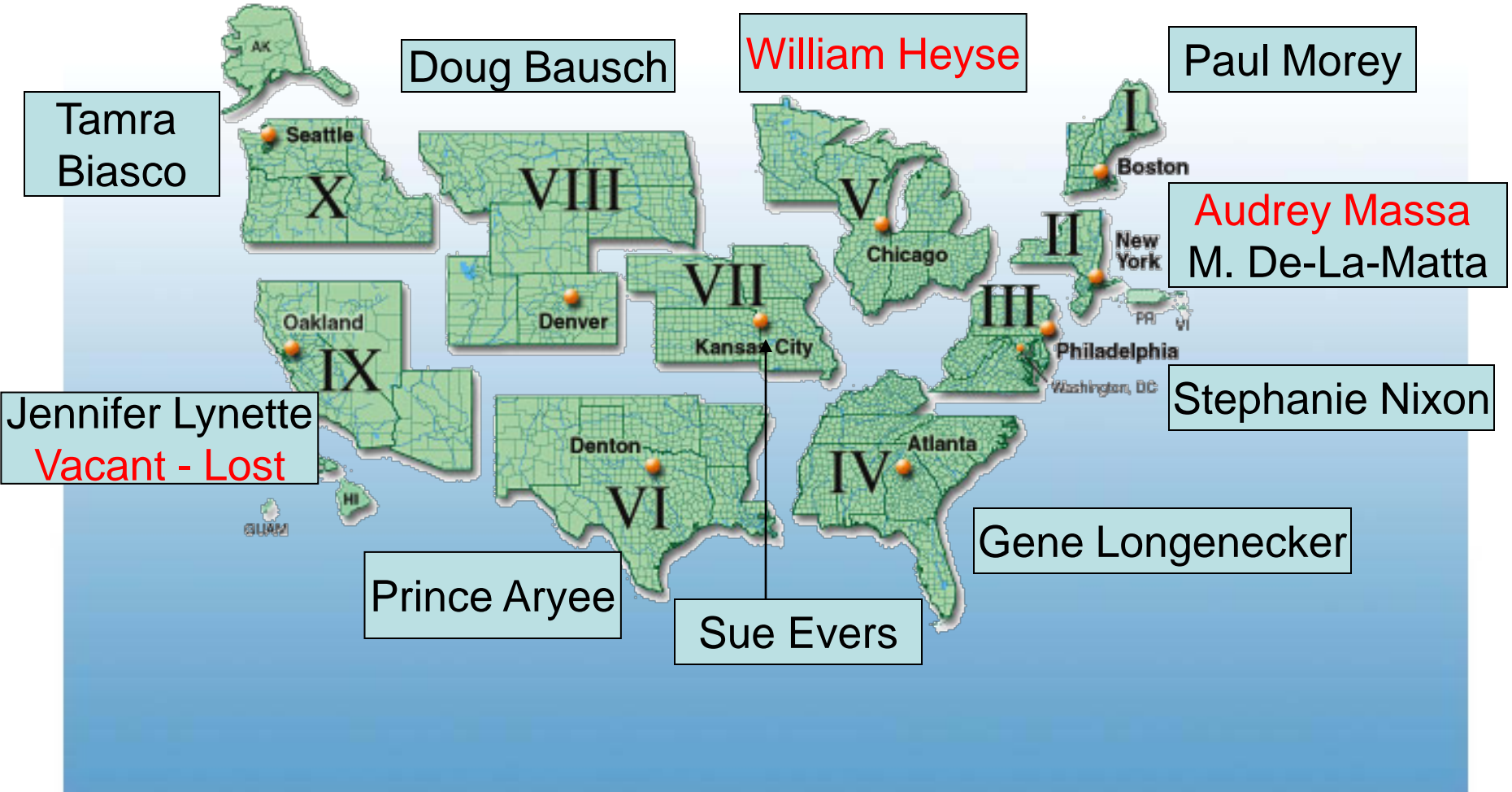
**Mai Tong** – EQ New Buildings  
Guidance/Building Science

**Mike Mahoney** – Codes/Special  
Projects (PBSD, R Factors,  
Tsunami, etc)

**Erin Walsh** – Guidance  
Development/Losses  
Avoided/Resilience

**Wendy Phillips** –  
Consortia/Implementation &  
Outreach

# Who We Are - Regional EQ Program Managers



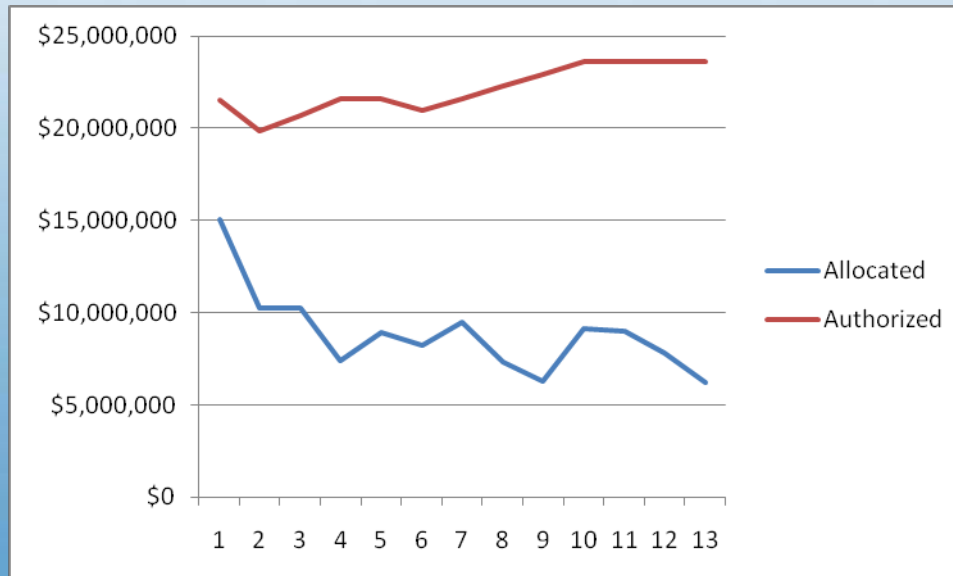
# FY 2013 Staffing

- One position at HQ frozen/lost due to agency reductions in S&B
- One Regional position frozen/lost to agency reductions in S&B
- Two regional EQ Program manager positions recently filled



# FY 2013 Budget

- \$5.2M allocated FY 2013 NEHRP
  - \$8.98M program funding in FY 2010
  - \$7.79M program funding in FY 2011
  - \$6.91M program funding in FY 2012



# Historical Accomplishments

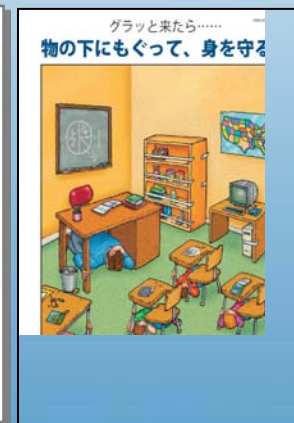
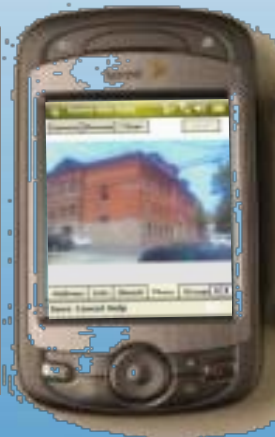
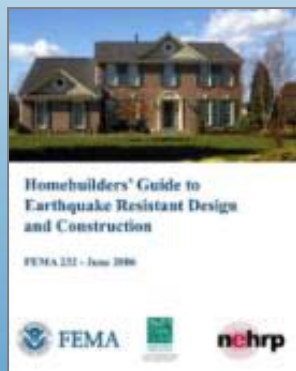
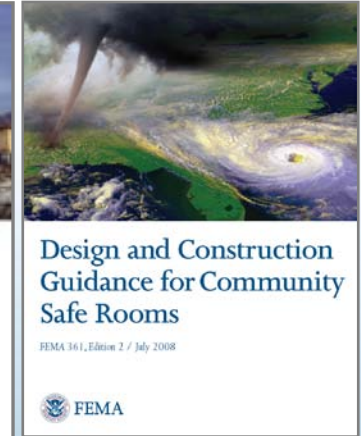
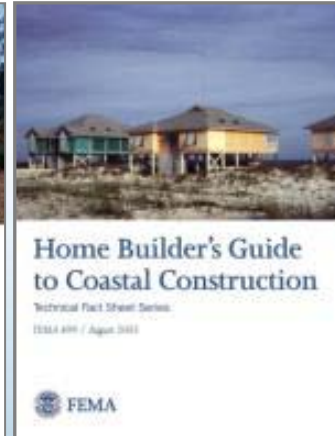
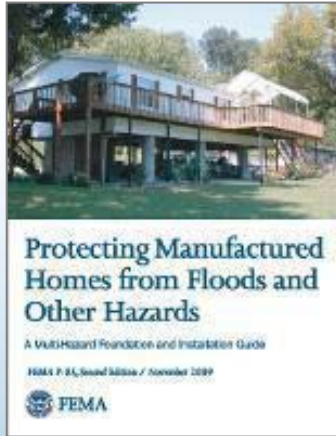
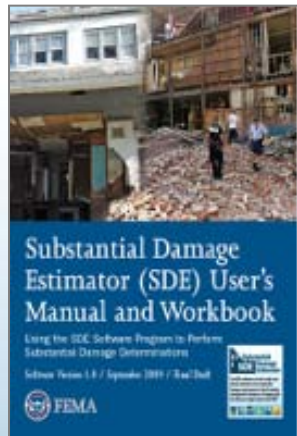
1. NEHRP Recommended Provisions
2. Nation's disaster-resistant building codes
3. Technical services bureau for Mitigation and FEMA
4. Over 300,000 documents distributed annually
5. 9 guide books completed or revised and over 2,200 people trained in FY 2010



# Recent Accomplishments

- Guidance and Tools
- Support for the Building Code Development Process
- Promoting and Monitoring the Adoption of Building Codes
- Training
- Outreach and Implementation
- Regional and Disaster-Support Activity

# Guidance & Tools Development



# Guidance and Tools

- *Simplified Seismic Assessment of Detached, Single-Family, Wood-Frame Dwellings, FEMA P-50*
- *Seismic Retrofit Guidelines for Detached, Single-Family, Wood-Frame Dwellings, FEMA P-50-1*
- *Seismic Retrofit of Weak-Story Multi-Unit Wood Frame Structures, FEMA P-807*
- *Guidelines for Design of Structures for Vertical Evacuation From Tsunamis, FEMA P-646*
- *Reducing the Risks of Nonstructural Earthquake Damage, FEMA E-74*
- *Earthquake Resistant Design Concepts, FEMA P-749*
- *Quantification of Building Seismic Performance Factors, FEMA P-795*
- *Substantial Damage Estimator Tool (SDE), Version 1.1, FEMA P-784*
- *ROVER Software, FEMA P-154CD*
- *Risk Management Series: Multi-hazard, FEMA P-907CD*
- *Building Codes Toolkit: Multihazard, FEMA ###CD and Online*
- *Building Science for Disaster-Resistant Communities: Seismic Hazard Pubs Brochure, FEMA L-783*

# Building Codes & Standards

Nation's disaster resistant building codes are a Cornerstone of effective mitigation

Administrator Fugate understands the importance of strong codes “... make sure we don't add to existing risk by continuing to build in hazardous areas or constructing new development to inadequate/unenforced codes...”

Mitigation has an MOU with the International Code Council

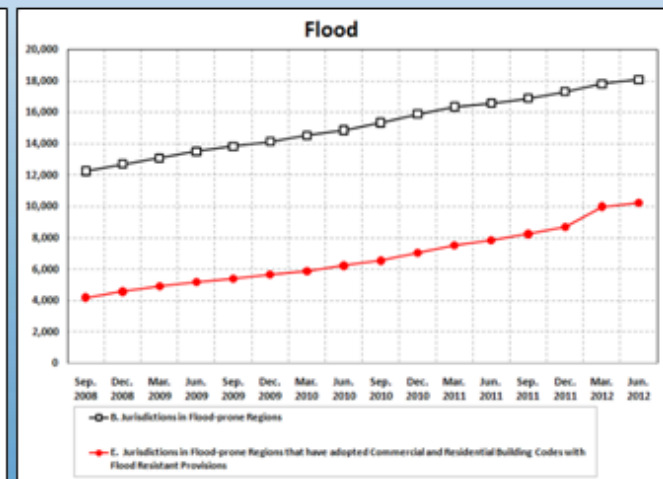
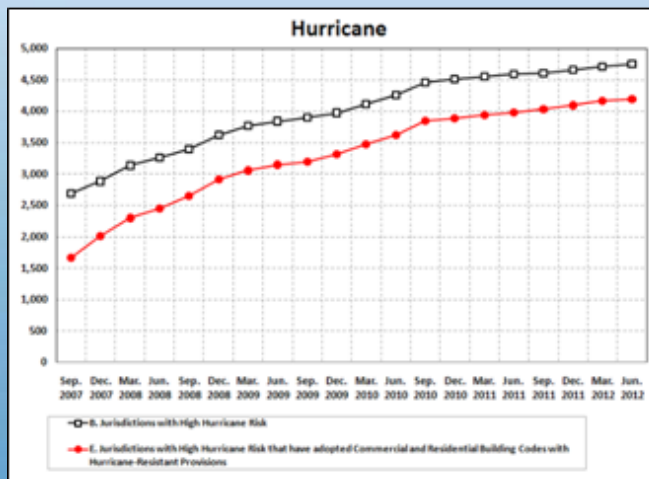
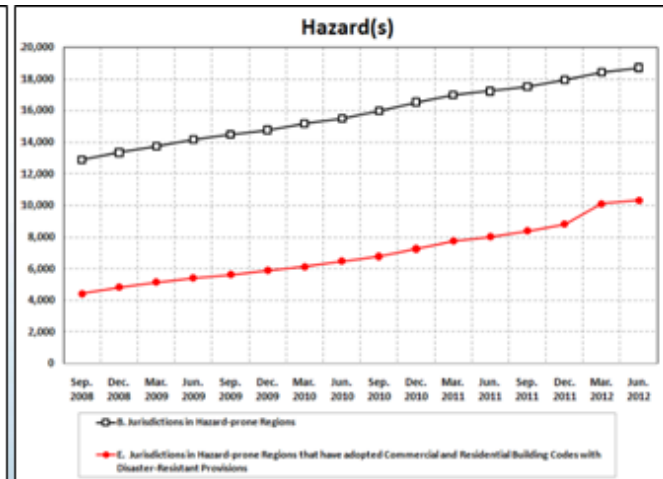
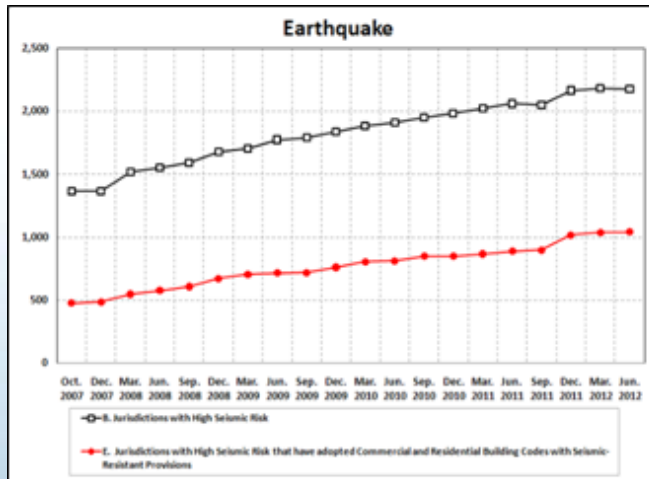
Every year the number of jurisdictions in hazard-prone regions that have disaster resistant codes grows



# Building Code Development Process

1. Through partnership with ICC, standards groups and industry, FEMA NEHRP successfully defended multiple proposed changes to the International Building and Residential Codes during the 2012 cycle which enhanced integration of disaster resistant provisions. By Fall 2013, FEMA complete evaluation of current IBC and IRC and develop/submit proposed changes for the 2015 editions.
2. Also reviewed code recommendations for ICC 700 (National Green Building Standard) Public Comment Draft and participated in the October 2011 International Green Construction Code Final Action hearings.

# Adoption of Building Codes





# Adoption of Building Codes

Type of Hazard		Number of Jurisdictions (Data of 9/27/2012)	Percentage of Jurisdictions in Hazard Prone Areas
	Total Jurisdictions in the ISO BCEGS	20,473	
<b>Flood</b>	Flood-Prone (Nation)	18,299	
	Flood-Resistant (Comm & Res)	10,448	57%
<b>Hurricane</b>	Hurricane-Risk (Nation)	4,779	
	Hurricane-Resistant (Commercial & Residential)	4,233	89%
<b>Earthquake</b>	<b>Seismic-Risk (Nation)</b>	<b>2,192</b>	
	<b>Seismic-Resistant (Commercial &amp; Residential)</b>	<b>1,043</b>	<b>48%</b>
<b>One or More Hazards</b>	Disaster-Prone (Nation)	18,934	
	Disaster-Resistant (Commercial & Residential)	10,562	56%

# Training

- FY 2011 - Trained over 2,500
- FY 2012 – Trained over 4,000 deploying 10 courses to over 20 States and territories.
- FY 2013 – Expect training number to increase further
- Additionally, developed and updated approximately 15 multi-hazard training courses and approximately 5 operational procedures and toolkits to support internal training management, file inventory, and the State program managers.

# Outreach & Implementation



# Collaborating with Other Organizations



# Outreach and Implementation – Coop Agreements

- 29 cooperative partnerships with States and Territories (22), EERI, SCEC, NESEC, CUSEC, WSSPC, CREW, and the Federal Alliance for Safe Homes (FLASH) were awarded.
- FEMA collaborates with these grantees to ensure substantial involvement and mutual partnership in executing local and regional risk reduction outreach and implementation activities for earthquakes, and other hazards including: earthquake mitigation planning; property inventory and seismic inspection of critical facilities; updating building codes and zoning ordinances; earthquake outreach and education; and the development of groups in support of local earthquake and multi-hazard initiatives.

# Outreach and Implementation – Shake Out

- In 2011 more than a dozen States conducted a Statewide ShakeOut and more than 10 million people participated. FEMA NEHRP provided direct financial support with involvement from FEMA Preparedness, Regional Staff, SCEC, Earthquake Consortia (i.e. CUSEC, NESEC, WSSPC, and CREW), State Earthquake Program Managers, private sector, and many others.
- In 2012 scheduled to have as many as 20 States and several countries conducting ShakeOut campaigns involving 15 – 20 million participants. FEMA supported and worked in partnership with SCEC on development and standardization of ShakeOut materials to make more accessible to use.

# Regional Activity

- FEMA NEHRP works closely with Regional counterparts to support partnerships with the States and local communities in implementing and executing NEHRP reduction activities
- Regional partners support local outreach, training delivery, oversight and execution of cooperative agreements, disaster operations, and technical assistance on local projects.
- Their active involvement and forthcoming support ensures that the NEHRP mission, building codes, standards, and other building science principles are integrated in local mitigation planning, grant decisions, and other local activities.

# Disaster Support – Mineral, VA EQ

- FEMA provided technical assistance and recommendations to the Joint Field Office and State officials. This included a briefing on seismic retrofitting strategies, local building code issues, and non-structural mitigation. Numerous publications and materials were also provided in support of local outreach.



# FY 2013 Priorities

- Work to maintain viable program implementation and outreach effort with targeted staff focus (Fernandez and Phillips)
- Maintain support for Codes and Standards work as top priority
- Maintain and enhance involvement and visibility of Regional EQ Program Managers
- Continue work on PBSD and Recommended Provisions

# 2012 ACEHR Recommendation Responses

The NRC estimated that just over \$300 million per year will be required over the next 5 years (and in the next 15 years as well) to begin the roadmap work. Current annual NEHRP funding is about one-third of that amount. ACEHR expressed concern that the NRC recommendations have not led to increased levels of funding for NEHRP and recognized that full funding is years-off due to budget constraints.

PCWG Comment: The agencies appreciate the ACEHR concern about resourcing the program. The agencies continue to support the program within the limits of the current budget-constrained environment.

# 2012 ACEHR Recommendation Responses

ACEHR perception: Given the slow pace of current NEHRP activity, U.S. earthquake vulnerability is steadily increasing, along with the certainty of future disasters in which human suffering will be intense, ten of billions of dollar in losses will occur, and recoveries will be prolonged - unless a more aggressive rate of implementation of preparedness and mitigation measures is supported.

PCWG Comment: The agencies again appreciate the ACEHR concern. Most of the actual implementation activity will require actions at the state and local levels, however.

# 2012 ACEHR Recommendation Responses

The ACEHR selected 5 of the 18 NRC roadmap tasks that should be initiated for focused attention by NEHRP, beyond current NEHRP activities, and not at the expense of ongoing work (costs are excerpted from the NRC report). Two that affect FEMA:

*Socioeconomic Research on Hazard Mitigation and Recovery: \$3 million per year. FEMA is not currently able to support this.*

*Knowledge, Tools, and Technology Transfer to/from the Private Sector: \$8.4M per year. This largely the responsibility of FEMA and NIST. Much of what is done by FEMA and NIST supports this.*

# 2012 ACEHR – FEMA Recommendation 1

FEMA has many activities and initiatives underway intended to facilitate and expand private, NGO, and community stakeholder earthquake and all-hazards mitigation, response and recovery efforts which include, but not limited to:

- Work of our regional earthquake consortia, ongoing work related to State, regional and national Shake Out drills, continuing efforts to promote Quake Smart businesses through earthquake awareness messaging as well as direct program implementation and outreach contractor support
- Partnering with a number of public and private sector partners on hazard mitigation and preparedness outreach. Specific examples of this work include: Shake Out drills – CUSEC, SCEC, numerous State Earthquake program managers and hundreds of private organizations participates in drills in the last 12 months involving over 10 million people in over a dozen States; Quake Smart – the Federal Alliance for Safe Homes (FLASH) conducted numerous media outreach events on earthquake mitigation for businesses that produced tens of millions of media impressions; Regional Consortia – CUSEC, NESEC, WSSPC, CREW, and ERRI all conducted training, public outreach, exercises, drills and technical activities to improve the earthquake resilience of the Nation; and Training over 2,500 individuals per year on earthquake hazard-related topics.

## 2012 ACEHR – FEMA Recommendation 2

Earthquake State Assistance provides approximately \$2 million in Coop Agree support for up to 33 States/Territories to conduct mitigation activities including: earthquake education to public and private partners; inspection of critical and essential facilities; conducting risk assessments of those facilities; and planning activities to identify risks.

Through our consortia partners and support contractors a wide range of initiatives, partnerships, and campaigns have been developed, with more to follow, including: Quake Smart; Shake Out support; NETAP training; and leveraging other activities including the Earthquake Country Alliance.

FEMA has placed a priority on these efforts and devoting a growing percentage of the FEMA NEHRP budget to education, outreach and preparedness activities over the past 3 years. This trend, unfortunately, will not continue in FY 2013.

## 2012 ACEHR – FEMA Recommendation 3

FEMA has been putting as much support into earthquake State assistance as possible. The percentage of the FEMA NEHRP funding going towards this activity has grown since state assistance was re-introduced in FY 2009. Support for State programs is critical to long-term progress on earthquake risk reduction efforts at the national, State and local level. One of the eligible activities is risk assessment of critical facilities, a key step for communities to determine their vulnerabilities so they can prioritize their risks. Once known, we hope jurisdictions will make plans and take action to reduce those risks.

In addition, FEMA is working to complete a major update to the FEMA 154 post-disaster earthquake assessment methodology which will join ROVER that incorporates both ATC 20 and FEMA 154 into an electronic, thin client tool.

## 2012 ACEHR – FEMA Recommendation 4

Despite our mission as a U.S.-based emergency management agency, FEMA has closely followed all recent, devastating, world wide earthquake disasters and provided technical staff support following the Chile and New Zealand events.

Many important lessons were learned from those tragic events, including important new knowledge about reinforced concrete and non-structural components performance among others. Those lessons learned are already being further studied in full-scale shake table tests and the knowledge generated will be incorporated into current and future guidance documents, training materials and building codes and standards revisions.



# Challenges and Opportunities

- How does FEMA meet program responsibilities?
- Long-term funding and staffing issues
- Reduced support for States and Partnerships
- Do more with Less
- For additional information on FEMA's NEHRP activities and its publications and resources, and to subscribe to FEMA NEHRP email updates, see <http://www.fema.gov/hazard/earthquake/>.

# Building Science *for Disaster-Resilient Communities*



Mitigation  
Works



FEMA

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