

National Earthquake Technical Assistance Program (NETAP)

A Toolkit for Regional and State Earthquake Program Managers

September 2013





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Chapter 1

NETAP Background and Eligibility

1.1 NETAP Background

In accordance with the *Earthquake Hazards Reduction Act of 1977 (Public Law 95-124)* and the *National Earthquake Hazards Reduction Program (NEHRP) Reauthorization Act of 2004 (Public Law 108-360)*, it is the responsibility of the Federal Emergency Management Agency (FEMA) to support the implementation of a comprehensive earthquake education and public awareness program, including development of materials and their wide dissemination to all appropriate audiences and support public access to locality-specific information that may assist the public in reducing earthquake risk.

FEMA developed the National Earthquake Technical Assistance Program (NETAP) as a mechanism for delivering *direct assistance* to the public through State, local, or tribal government entities, to increase their knowledge and ability to analyze their risk, make a plan, and take actions aimed at reducing their earthquake risk and supporting overall community resilience.

NETAP is *not* a grant or cooperative agreement program, but rather a *contract* managed by FEMA to rapidly deploy specific assistance to organizations and communities.

1.2 NETAP Eligibility

NETAP is designed to help State, local, and tribal governments and nonprofit and private sector organizations obtain the knowledge, tools, and technical assistance to effectively implement local earthquake risk reduction initiatives.

Chapter 2

Types of NETAP Assistance

The National Earthquake Technical Assistance Program (NETAP) provides several different types of assistance, described in the following sections.

2.1 Training

NETAP provides trainings and associated materials, available for in-person presentation, webinar, or independent study. Topics pertain to a variety of earthquake risk reduction activities and stakeholders. See pages 4-1 to 4-8 for available NETAP trainings and corresponding materials.

2.2 Technical Assistance

NETAP provides technical advice and shared expertise that help local communities design, develop, and implement earthquake risk reduction projects.

2.3 Tools Development

NETAP provides assistance in developing job aids and other tools that facilitate efficient and effective implementation of earthquake risk reduction efforts.

2.4 Special Project Support

Local earthquake mitigation projects or other original, unique, or replicable earthquake risk reduction initiatives may be funded under NETAP as a special project. Support is dependent on funding availability and the benefits and outcomes of the proposed project. A special project shall not only provide local benefits, but also potentially contribute or support national level National Earthquake Hazards Reduction Program (NEHRP) efforts, such as guidance development, standards. Further, such special projects also need to demonstrate a local commitment and contribution towards the end goal of reducing future losses. For example, FEMA has funded the rapid visual screening of a specific population of buildings, such as emergency response facilities. Following the screening, the local government has committed to funding the retrofit of those buildings found to be seismically hazardous.

Chapter 3 Process for Obtaining NETAP Assistance

The process for obtaining NETAP assistance is described in the following steps:

- 1. Identify need and request assistance. Eligible applicants are required to provide a written request describing the type of assistance needed, the purpose or objectives, scope (e.g., timing, location, estimated cost), and the primary point(s) of contact. Requests should be prepared in consultation with the State Earthquake Program Manager or other State official with responsibility for earthquake risk reduction.
- 2. Communicate request. The State Earthquake Program Manager forwards the request to the appropriate FEMA Regional Earthquake Program Manager who works closely with the NETAP Manager at FEMA Headquarters. Because NETAP is a national contract, immediate coordination with FEMA Headquarters is necessary to ensure timely planning and approval of the request.
- **3. Review and coordination.** The FEMA NETAP Manager, in collaboration with the FEMA Regional Earthquake Program Manager, reviews the training request. A coordination conference call may be required between all parties to discuss and negotiate the details.
- 4. Approval. Based on the review and coordination process, a final decision is made by the FEMA NETAP Manager based on program funding and priorities, target outcomes and benefits of the request, and other relevant factors such as local earthquake risk, capacity of the requesting organization to execute the proposal in partnership with FEMA, and how well the assistance aligns with local hazard mitigation plans.
- **5. Delivery.** If approved, the FEMA NETAP Manager, through the NETAP Contractor, deploys approved contract resources in collaboration with the FEMA Regional and State Earthquake Program Managers (and the requesting organization, if it is not the State).

When the assistance provided consists of trainings presented to local groups, NETAP typically pays for the salary and travel expenses of an

approved instructor and for any educational materials used by the students and instructor. The State or local government requesting the training, in cooperation with any partnering organizations, is responsible for local logistical requirements (e.g., meeting space, audio/visual equipment, refreshments, recruitment and registration of students).

Some training programs may be conducted in webinar format, in an effort to maximize the number of participants at a lower cost. Webinars presented by NETAP are free of charge.

When developing tools or providing special project or technical assistance, NETAP normally delivers or funds the delivery of some portion of the expertise or support required. The respective contributions of FEMA, State or local governments, and other involved organizations are established through ad hoc negotiations.

- 6. Performance reporting. Immediately after the implementation of the NETAP training or other type of assistance, the State Earthquake Program Manager (or requesting organization) submits a written report on progress or final accomplishments. If NETAP assistance provided was in-person training, the contracted instructor will collect completed evaluation forms from participants.
- 7. Certificate of Participation. Upon request, the primary point(s) of contact, or the State Earthquake Program Manager or other State official, may request a Certificate of Participation for training participants. In order to prepare certificates, the primary point(s) of contact must provide a database of participants in Microsoft Word or Excel format to the NETAP Manager. Webinar participants may request a Certificate of Participation via e-mail to the primary point of contact.

Chapter 4

List of Available NETAP Trainings and Corresponding Materials

4.1 FEMA 154, Rapid Visual Screening of Buildings for Potential Seismic Hazards

In the FEMA 154 training, participants learn how to identify potentially hazardous buildings before earthquakes occur. The training covers methods and processes that enable personnel to rapidly screen buildings for their expected safety and usability during and after earthquakes. Local officials can use these data to plan and prioritize further engineering and vulnerability analysis, emergency-response needs, and mitigation projects.

4.1.1 FEMA 154 Training Duration

The FEMA 154 training is typically conducted in 6 hours.

4.1.2 FEMA 154 Training Materials

Materials provided for the FEMA 154 training include:

- FEMA 154 report, *Rapid Visual Screening of Buildings for Potential Seismic Hazards* (hard copy)
- FEMA 154 report, *Rapid Visual Screening of Buildings for Potential Seismic Hazards* (pdf format electronic copy, on CD-ROM)

The FEMA 154 report may be downloaded at no cost at the following link: <u>http://www.fema.gov/library/viewRecord.do?id=3556</u>

Note: The FEMA 154 report is in the process of being updated, and this revised edition is expected to be available next year.

4.2 FEMA 154, Rapid Visual Screening of Buildings for Potential Seismic Hazards, and ATC-20, Postearthquake Safety Evaluation of Buildings

The training on FEMA 154, *Rapid Visual Screening of Buildings for Potential Seismic Hazards*, described in Section 4.1, may be combined with training on ATC-20, *Postearthquake Safety Evaluation of Buildings*, in which participants learn how to evaluate the safety of buildings following earthquakes. ATC-20 trainees learn to perform seismic inspections and safety evaluations of buildings, and to post appropriate safety-status placards. These evaluations and placards can be used in planning and executing evacuation, re-entry, and rebuilding strategies.

4.2.1 FEMA 154 and ATC-20 Training Duration

The FEMA 154 and ATC-20 training is typically conducted in 1 (8-hour) day.

4.2.2 FEMA 154 and ATC-20 Training Materials

Materials provided for the FEMA 154 training include:

- FEMA 154 report, *Rapid Visual Screening of Buildings for Potential Seismic Hazards* (hard copy)
- FEMA 154 report, *Rapid Visual Screening of Buildings for Potential Seismic Hazards* (pdf format electronic copy, on CD-ROM)
- ATC-20-1 Field Manual: Postearthquake Safety Evaluation of Buildings (Second Edition) (hard copy)

The FEMA 154 report may be downloaded at no cost at the following link: <u>http://www.fema.gov/library/viewRecord.do?id=3556</u>

Additional copies of the ATC-20-1 *Field Manual: Postearthquake Safety Evaluation of Buildings (Second Edition)* may be ordered at the following link: <u>https://www.atcouncil.org/onlinestore.html</u>

4.3 FEMA 154, Rapid Visual Screening of Buildings for Potential Seismic Hazards, and Rapid Observation of Vulnerability and Estimation of Risk (ROVER)

The FEMA 154 training, described in Section 4.1, may be combined with training and demonstration of the *Rapid Observation of Vulnerability and Estimation of Risk* (ROVER) software. ROVER is open-source software that automates the paper-based screening procedures taught in the FEMA 154 training. Building-specific data are entered into ROVER in the field via smartphones and other devices that have GPS capability, and are aggregated in a PC-based data server. ROVER includes many productivity-enhancing features, such as automated geolocation, integrated digital photography and sketching capabilities, and automated retrieval of site-specific soil and hazard data from U.S. Geological Survey maps.

4.3.1 FEMA 154 and ROVER Training Duration

The FEMA 154 and ROVER training is typically conducted in 1 (8-hour) day.

4.3.2 FEMA 154 and ROVER Training Materials

Materials provided for the FEMA 154 and ROVER training include:

- FEMA 154 report, *Rapid Visual Screening of Buildings for Potential Seismic Hazards* (hard copy)
- FEMA 154 report, *Rapid Visual Screening of Buildings for Potential Seismic Hazards* (pdf format electronic copy, on CD-ROM)
- *Rapid Observation of Vulnerability and Estimation of Risk* (ROVER) software (electronic copy, on CD-ROM)

The FEMA 154 report may be downloaded at no cost at the following link: <u>http://www.fema.gov/library/viewRecord.do?id=3556</u>

Additional information about ROVER may be downloaded at no cost at the following link: <u>http://www.fema.gov/plan/prevent/earthquake/rover.shtm</u>

4.4 ATC-20, Postearthquake Safety Evaluation of Buildings, and Rapid Observation of Vulnerability and Estimation of Risk (ROVER)

Requesters may be approved to receive ATC-20 training, without an accompanying FEMA 154 training, if the ATC-20 training is combined with ROVER training and implementation. See Sections 4.1 and 4.2 for a description of these trainings.

4.4.1 ATC-20 and ROVER Training Duration

The ATC-20 training is typically conducted in 5.5 hours, and the ROVER training is typically conducted in 2 hours (approximately 1 day total).

4.4.2 ATC-20 and ROVER Training Materials

Materials provided for the ATC-20 and ROVER training include:

- ATC-20-1 Field Manual: Postearthquake Safety Evaluation of Buildings (Second Edition) (hard copy)
- *Rapid Observation of Vulnerability and Estimation of Risk* (ROVER) software (electronic copy, on CD-ROM)

Additional copies of the ATC-20-1 *Field Manual: Postearthquake Safety Evaluation of Buildings (Second Edition)* may be ordered at the following link: <u>https://www.atcouncil.org/onlinestore.html</u>

Additional information about ROVER may be downloaded at no cost at the following link: <u>http://www.fema.gov/plan/prevent/earthquake/rover.shtm</u>

4.5 ATC-20, Postearthquake Safety Evaluation of Buildings, FEMA 154, Rapid Visual Screening of Buildings for Potential Seismic Hazards, and Rapid Observation of Vulnerability and Estimation of Risk (ROVER)

Requesters may be approved to receive ATC-20 training combined with training on FEMA 154 and ROVER. See Sections 4.1 and 4.2 for a description of these trainings.

4.5.1 ATC-20, FEMA 154, and ROVER Training Duration

The ATC-20 training is typically conducted in 5.5 hours, the FEMA 154 training is typically conducted in 6 hours, and the ROVER training is typically conducted in 2 hours (approximately 2 days total).

4.5.2 ATC-20, FEMA 154, and ROVER Training Materials

Materials provided for the ATC-20 and ROVER training include:

- ATC-20-1 Field Manual: Postearthquake Safety Evaluation of Buildings (Second Edition) (hard copy)
- FEMA 154 report, *Rapid Visual Screening of Buildings for Potential Seismic Hazards* (hard copy)
- FEMA 154 report, *Rapid Visual Screening of Buildings for Potential Seismic Hazards* (pdf format electronic copy, on CD-ROM)
- *Rapid Observation of Vulnerability and Estimation of Risk* (ROVER) software (electronic copy, on CD-ROM)

Additional copies of the ATC-20-1 *Field Manual: Postearthquake Safety Evaluation of Buildings (Second Edition)* may be ordered at the following link: <u>https://www.atcouncil.org/onlinestore.html</u>

The FEMA 154 report may be downloaded at no cost at the following link: <u>http://www.fema.gov/library/viewRecord.do?id=3556</u>

Additional information about ROVER may be downloaded at no cost at the following link: <u>http://www.fema.gov/plan/prevent/earthquake/rover.shtm</u>

4.6 FEMA E-74, Reducing the Risks of Nonstructural Earthquake Damage (In-Person and Live Webinar Training)

The training on FEMA E-74, *Reducing the Risks of Nonstructural Earthquake Damage*, describes the sources of nonstructural earthquake damage and effective methods of reducing such damage. Nonstructural failures have accounted for the majority of damage in several recent U.S. earthquakes. It is critical to raise awareness of potential nonstructural hazards, the costly consequences of nonstructural failures, and the opportunities that exist to limit future losses. Nonstructural components of buildings include all elements that are not part of the structural system; that is, the architectural, mechanical, electrical, and plumbing systems, as well as furniture, fixtures, equipment, and other contents.

4.6.1 FEMA E-74 Training Duration

The FEMA E-74 training is typically conducted in 4 hours, and the FEMA E-74 webinar training is typically conducted in 1.5 hours.

4.6.2 FEMA E-74 Training Materials

A copy of the webinar speaker's presentation will be available for download by participants at the webinar site.

The FEMA E-74 report may be downloaded at no cost at the following link: <u>http://www.fema.gov/plan/prevent/earthquake/fema74/index.shtm</u>

The FEMA E-74, *Reducing the Risks of Nonstructural Earthquake Damage*, will be available in electronic pdf format, on CD-ROM, within the next year. The FEMA E-74 CD-ROM will also include training materials.

4.7 FEMA P-593, Seismic Rehabilitation Training for Oneand Two-Family Wood-Frame Dwellings

The training on FEMA P-593, *Seismic Rehabilitation Training for One- and Two-Family Wood-Frame Dwellings*, promotes seismic retrofitting of oneand two-family homes to reduce earthquake damage and increase postearthquake habitability. Participants are introduced to the effects of earthquakes on wood-frame dwellings, common seismic vulnerabilities in these structures, retrofitting approaches, and available retrofitting guidelines.

4.7.1 FEMA P-593 Training Duration

The FEMA P-593 training is typically conducted in 6 hours.

4.7.2 FEMA P-593 Training Materials

Materials provided for the FEMA P-593 training include:

• FEMA P-593 report, *Seismic Rehabilitation Training for One- and Two-Family Wood-Frame Dwellings* (electronic pdf format, on CD-ROM)

The FEMA P-593 report may be downloaded at no cost at the following link: <u>http://www.fema.gov/library/viewRecord.do?id=4554</u>

4.8 FEMA 395, Earthquake Safety and Mitigation for Schools (Live and Pre-Recorded Webinar Training)

The FEMA 395 training on *Earthquake Safety and Mitigation for Schools* is for school officials, teachers, facility managers, and other stakeholders interested in reducing earthquake risks in local schools. Numerous school buildings located in multiple States and U.S. territories are vulnerable to earthquake damage that threatens safety and continued operations. In this training, participants learn how to: (1) assess and analyze seismic risks; (2) develop actionable plans for reducing and managing these risks; (3) secure nonstructural elements of school facilities; and (4) use "incremental seismic rehabilitation" as an affordable approach for protecting existing buildings and ensuring occupant safety. This training is typically offered in webinar format, but could be combined with other in-person trainings.

4.8.1 FEMA 395 Training Webinar Duration

The FEMA 395 training webinar is typically conducted in 1.5 hours.

4.8.2 FEMA 395 Training Materials

A copy of the speaker's presentation will be available for download by participants at the webinar site.

The FEMA 395 report may be downloaded from the following link: https://www.fema.gov/library/viewRecord.do?id=1980

A pre-recorded webinar of the FEMA 395 training may be viewed at the following link: <u>https://fema.connectsolutions.com/p13135639</u> /?launcher=false&fcsContent=true&pbMode=normal

4.9 **FEMA P-767**, Earthquake Mitigation for Hospitals

The FEMA P-767, *Earthquake Mitigation for Hospitals*, training introduces participants to earthquake hazards in healthcare settings and methods that can be used to analyze and reduce risks of damage in hospitals and other medical buildings. Such facilities have unique nonstructural components, including

equipment and infrastructure systems that can become sources of injury or damage even during smaller earthquakes. By implementing sound, costeffective mitigation measures, healthcare facilities can reduce or eliminate seismic risks and ensure that, in the event of an earthquake, they can remain in operation to serve their communities.

4.9.1 FEMA P-767 Training Duration

The FEMA P-767 training is typically conducted in 6 hours.

4.9.2 FEMA P-767 Training Materials

Materials provided for the FEMA P-767 training include:

- FEMA P-767 training PowerPoint presentation report (hard copy)
- FEMA 396 report, *Incremental Seismic Rehabilitation of Hospital Buildings* (electronic pdf format, on CD-ROM)

The FEMA P-396 report may be downloaded at the following link: http://www.fema.gov/media-library/assets/documents/5167?id=1981

In conjunction with the FEMA P-767 materials, the FEMA E-74 report is also provided, and is available at the following link: http://www.fema.gov/plan/prevent/earthquake/fema74/index.shtm

FEMA E-74, *Reducing the Risks of Nonstructural Earthquake Damage*, will be available in electronic pdf format, on CD-ROM, within the next year. The FEMA E-74 CD-ROM will also include related training materials.

4.10 New Trainings in Fiscal Year 2013

In Fiscal Year 2013, NETAP will also include trainings on the following courses.

4.10.1 FEMA 232, Homebuilders' Guide to Earthquake-Resistant Design and Construction

The training on FEMA 232, *Homebuilders' Guide to Earthquake-Resistant Design and Construction*, presents seismic design and construction guidance for one- and two-family light-frame residential structures, including information that supplements the 2003 edition of the *International Residential Code*. The FEMA 232 report may be used by homebuilders, homeowners, and other non-engineers.

The FEMA 232 report may be downloaded at the following link: http://www.fema.gov/library/viewRecord.do?id=2103

4.10.2 FEMA P-50, Simplified Seismic Assessment of Detached, Single-Family, Wood-Frame Dwellings

The training on the FEMA P-50 report, *Simplified Seismic Assessment of Detached, Single-Family, Wood-Frame Dwellings* will provide instruction on inspection procedures and use of a four-page Simplified Seismic Assessment Form to evaluate detached single-family wood-framed dwellings and to assign to each a seismic performance grade. The procedure takes into consideration the potential for damage or collapse in a manner that is consistent and useful to owners, purchasers, insurers, lenders, contractors, design professionals, and regulatory officials.

4.10.3 FEMA P-749, Earthquake-Resistant Design Concepts: An Introduction to the NEHRP Recommended Seismic Provisions for New Buildings and Other Structures

Training on the FEMA P-749 report, *Earthquake-Resistant Design Concepts: An Introduction to the NEHRP Recommended Seismic Provisions for New Buildings and Other Structures* (a companion guide to the 2009 edition of the NEHRP *Recommended Seismic Provisions for New Buildings and Other Structures* (FEMA P-750)), has been designed to encourage design and construction practices that address earthquake hazard and minimize the resulting risk to life and property. Understanding the basis for the seismic regulations in the nation's building codes and standards is important to those outside the technical community including elected officials, decision-makers in the insurance and financial communities, and individual building or business owners and other concerned citizens. The intent of this training is to provide interested individuals with a easily understandable explanation of the intent and requirements of seismic design in general and the Provisions in particular.

The FEMA P-749 report may be downloaded at the following link: http://www.fema.gov/library/viewRecord.do?id=4711

4.10.4 FEMA P-909, Train the Trainer: Home and Business Earthquake Safety and Mitigation

The goal of the FEMA P-909, *Train the Trainer: Home and Business Earthquake Safety*, course is creating a cadre of trainers with the ability to provide citizens with basic knowledge on earthquakes and simple steps toward safety and mitigation in their homes and businesses with the goal to reduce the loss of life and property from an earthquake.

4.11 Other FEMA Earthquake-Related Training

The following are additional resources for earthquake-related training :

- Complete information about NETAP, including topics and dates of planned training webinars, is posted at the NETAP website: <u>http://www.fema.gov/plan/prevent/earthquake/training_netap.shtm</u>
- Earthquake training resources funded under NETAP are listed on pages 23-27 of the FEMA P-736A, *Catalog of FEMA Earthquake Resources*, and may be viewed and downloaded from the following link: <u>http://www.fema.gov/library/viewRecord.do?id=3538</u>
- FEMA also provides an Independent Study Program. A complete list of courses is available at the following link: <u>http://training.fema.gov</u>/<u>/IS/crslist.aspx?all=true</u>
- Training materials sought for independent study can be obtained free of charge through the online FEMA Library unless otherwise indicated within the training listings. The FEMA Library website is available at the following link: <u>http://www.fema.gov/plan/prevent/earthquake/</u> <u>publications.shtm</u>

Chapter 5 **NETAP Training Schedule and Contacts**

5.1 NETAP Training Schedule

The NETAP training schedule is available online at the following link: https://www.fema.gov/plan/prevent/earthquake/netap_calendar.shtm

For a more up-to-date schedule of pending and confirmed NETAP trainings, please contact the NETAP Program Manager.

5.2 Contact Information

Contact information for the 2013 NETAP Managers and others who support NETAP is as follows:

Wendy Phillips Senior Program Specialist Federal Emergency Management Agency E-mail: <u>Wendy.Phillips@fema.dhs.gov</u> Phone: (202) 646-2810

Mike Mahoney Contracting Officer's Technical Representative, Senior Geophysicist Federal Emergency Management Agency E-mail: <u>Mike.Mahoney@fema.dhs.gov</u> Phone: (202) 646-2794 Ayse Hortacsu NETAP Project Manager Applied Technology Council E-mail: <u>ayse@ATCouncil.org</u> Phone: (650) 595-1542 ext. 14

Bernadette Hadnagy Task Manager for NETAP Training Delivery Applied Technology Council E-mail: <u>bhadnagy@ATCouncil.org</u> Phone: (650) 595-1542 ext. 12

Contact information for Regional Earthquake Program Managers is listed at the following link: https://www.fema.gov/plan/prevent/earthquake/hq_regions.shtm#2

Contact information for State Earthquake Program Managers is listed at the following link: https://www.fema.gov/plan/prevent/earthquake/State_contacts.shtm

Chapter 6

NETAP Training Flyers

A collection of sample flyers are provided in this chapter, for use by eligible applicants to announce trainings once they are approved by the FEMA NETAP Manager. Modifiable electronic versions of the brochures provided in this section are posted at the following link:

http://www.fema.gov/earthquake-training/national-earthquake-technical-assistance-program

6.1 Provided NETAP Training Flyers

The subsequent pages contain the following training flyers:

- FEMA 154, Rapid Visual Screening of Buildings for Potential Seismic Hazards
- FEMA 154, Rapid Visual Screening of Buildings for Potential Seismic Hazards, and ATC-20, Postearthquake Safety Evaluation of Buildings
- FEMA 154, Rapid Visual Screening of Buildings for Potential Seismic Hazards, and Rapid Observation of Vulnerability and Estimation of Risk (ROVER)
- ATC-20, Postearthquake Safety Evaluation of Buildings, and Rapid Observation of Vulnerability and Estimation of Risk (ROVER)
- ATC-20, Postearthquake Safety Evaluation of Buildings, FEMA 154, Rapid Visual Screening of Buildings for Potential Seismic Hazards, and Rapid Observation of Vulnerability and Estimation of Risk (ROVER)
- FEMA E-74, Reducing the Risks of Nonstructural Earthquake Damage
- FEMA P-593, Seismic Rehabilitation Training for One- and Two-Family Wood-Frame Dwellings
- FEMA 395, Earthquake Safety and Mitigation for Schools
- FEMA P-767, Earthquake Mitigation for Hospitals

Highlighted sections of the flyers should be modified with the appropriate information once the training has been approved.











FEMA 154, *Rapid Visual Screening of Buildings for Potential Seismic Hazards*

TRAINING DESCRIPTION

Training on FEMA 154, *Rapid Visual Screening of Buildings for Potential Seismic Hazards*, provides instruction on how to identify potentially hazardous buildings before earthquakes occur. The training covers methods and processes that enable personnel to rapidly identify, inventory, and rank local buildings according to their expected safety and usability during and after earthquakes. Local officials can use these data to plan and prioritize further engineering and vulnerability analysis, emergency-response needs, and mitigation projects.

TARGET AUDIENCE

The target audience for this training includes building owners, facility managers, building officials, engineers, homeowners, emergency managers, and other interested citizens and volunteers.

GENERAL INFORMATION

Time:	x:xx am – x:xx pm
Date:	Month, Day, Year
Location:	Facility Name, Room #, Street Address, City, State, Zip
Instructor:	First Name, Last Name, Title, Organization
Materials:	FEMA 154 report, Rapid Visual Screening of Buildings for Potential
	Seismic Hazards (hard copy); and
	FEMA 154 CD containing a pdf of the report.

REGISTRATION

To register for this training, please provide your name, organization, address, phone number, and e-mail address to xxxxx@xxxx.com. For questions or additional information, please contact xxx-xxx.

AGENDA

- Introduction
- Planning and Managing Rapid Visual Screening
- Completing the Data Collection Form
- Using the RVS Procedure Results
- Example Application of Rapid Visual Screening



This training is supported by National Earthquake Hazards Reduction Program (NEHRP) National Earthquake Technical Assistance Program (NETAP). For more information visit: <u>http://www.fema.gov/earthquake-training/national-earthquake-technical-assistance-program</u>













FEMA 154, Rapid Visual Screening of Buildings for Potential Seismic Hazards, and ATC-20, Postearthquake Safety Evaluation of Buildings

TRAINING DESCRIPTION

Training on FEMA 154, *Rapid Visual Screening of Buildings for Potential Seismic Hazards*, provides instruction on how to identify potentially hazardous buildings before earthquakes occur. The training covers methods and processes that enable personnel to rapidly identify, inventory, and rank local buildings according to their expected safety and usability during and after earthquakes. Local officials can use these data to plan and prioritize further engineering and vulnerability analysis, emergency-response needs, and mitigation projects.

The ATC-20, *Procedures for Postearthquake Safety Evaluation of Buildings*, training provides instruction on rapid and detailed evaluation procedures for evaluating earthquake-damaged buildings and posting them as INSPECTED (apparently safe, green placard), LIMITED ENTRY (yellow placard), or UNSAFE (red placard). The training provides examples which allow attendees to evaluate building damage conditions, assess the overall risk from the damage, and recommend which of the three placards should be posted on the building. These evaluations and placards can be used in planning and executing evacuation, reentry, and rebuilding strategies.

TARGET AUDIENCE

The target audience for these trainings includes building officials, engineers, architects, building owners, emergency managers, and other interested citizens and volunteers.



This training is supported by National Earthquake Hazards Reduction Program (NEHRP) National Earthquake Technical Assistance Program (NETAP). For more information visit: <u>http://www.fema.gov/earthquake-training/national-earthquake-technical-assistance-program</u>

GENERAL INFORMATION

Time:	x:xx am – x:xx pm
Date:	Month, Day, Year
Location:	Facility Name, Room #, Street Address, City, State, Zip
Instructor:	First Name, Last Name, Title, Organization
Handouts:	FEMA 154 report, Rapid Visual Screening of Buildings for
	Potential Seismic Hazards (hard copy);
	FEMA 154 CD containing a pdf of the report; and
	ATC-20-1 Field Manual. Postearthquake Safety Evaluation of
	Buildings (Second Edition).

REGISTRATION

To register for this training, please provide your name, organization, address, phone number, and e-mail address to xxxxx@xxxx.com. For questions or additional information, please contact xxx-xxx.

AGENDA

FEMA 154

- Introduction
- Planning and Managing Rapid Visual Screening
- Completing the Data Collection Form
- Using the RVS Procedure Results
- Example Application of Rapid Visual Screening

ATC-20

- Introduction to ATC-20 Methodology
- Posting System
- Evaluation Procedures
- Structural Basics
- Wood Frame Structures
- Masonry Structures
- Concrete Structures
- Steel Frame Structures
- Nonstructural Elements
- Geotechnical Hazards
- Other Hazards Wind and Flood
- Hazardous Materials
- Field Safety











FEMA 154, Rapid Visual Screening of Buildings for Potential Seismic Hazards, and

Rapid Observation of Vulnerability and Estimation of Risk (ROVER)

TRAINING DESCRIPTION

Training on FEMA 154, *Rapid Visual Screening of Buildings for Potential Seismic Hazards*, provides instruction on how to identify potentially hazardous buildings before earthquakes occur. The training covers methods and processes that enable personnel to rapidly identify, inventory, and rank local buildings according to their expected safety and usability during and after earthquakes. Local officials can use these data to plan and prioritize further engineering and vulnerability analysis, emergency-response needs, and mitigation projects.

Rapid Observation of Vulnerability and Estimation of Risk (ROVER) automates the paper-based screening procedures taught in FEMA 154 and ATC-20, *Procedures for Postearthquake Safety Evaluation of Buildings*, trainings. Building-specific data are entered into ROVER in the field via GPS-enabled devices, and are aggregated in a data server. ROVER features include automated geolocation, integrated digital photography and sketching capabilities, and automated retrieval of site-specific soil and hazard data from U.S. Geological Survey maps.

TARGET AUDIENCE

The target audience for these trainings includes building officials, engineers, architects, building owners, emergency managers, risk analysts, and other interested citizens and volunteers.



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GENERAL INFORMATION

Time:	<mark>x:xx am – x:xx pm</mark>
Date:	Month, Day, Year
Location:	Facility Name, Room #, Street Address, City, State, Zip
Instructor:	First Name, Last Name, Title, Organization
Materials:	FEMA 154 report, Rapid Visual Screening of Buildings for
	Potential Seismic Hazards (hard copy);
	FEMA 154 CD containing a pdf of the report; and
	ROVER CD containing the Rapid Observation of Vulnerability
	and Estimation of Risk software.

REGISTRATION

To register for this training, please provide your name, organization, address, phone number, and e-mail address to xxxxx@xxxx.com. For questions or additional information, please contact xxx-xxx-xxxx.

AGENDA

- Introduction
- Planning and Managing Rapid Visual Screening
- Completing the Data Collection Form
- Using the RVS Procedure Results
- Example Application of Rapid Visual Screening
- ROVER Training













ATC-20, Postearthquake Safety Evaluation of Buildings, and Rapid Observation of Vulnerability and Estimation of Risk (ROVER)

TRAINING DESCRIPTION

The ATC-20, *Procedures for Postearthquake Safety Evaluation of Buildings*, training provides instruction on rapid and detailed evaluation procedures for evaluating earthquake-damaged buildings and posting them as INSPECTED (apparently safe, green placard), LIMITED ENTRY (yellow placard), or UNSAFE (red placard). The training provides examples which allow attendees to evaluate building damage conditions, assess the overall risk from the damage, and recommend which of the three placards should be posted on the building. These evaluations and placards can be used in planning and executing evacuation, re-entry, and rebuilding strategies.

Rapid Observation of Vulnerability and Estimation of Risk (ROVER) automates the paper-based screening procedures taught in FEMA 154 and ATC-20, *Procedures for Postearthquake Safety Evaluation of Buildings*, trainings. Building-specific data are entered into ROVER in the field via GPS-enabled devices, and are aggregated in a data server. ROVER features include automated geolocation, integrated digital photography and sketching capabilities, and automated retrieval of site-specific soil and hazard data from U.S. Geological Survey maps.

TARGET AUDIENCE

The target audience for these trainings includes building officials, engineers, architects, building owners, emergency managers, risk analysts, and other interested citizens and volunteers.



This training is supported by National Earthquake Hazards Reduction Program (NEHRP) National Earthquake Technical Assistance Program (NETAP). For more information visit: http://www.fema.gov/earthquake-training/national-earthquake-technical-assistance-program

GENERAL INFORMATION

Time:	<mark>x:xx am – x:xx pm</mark>
Date:	Month, Day, Year
Location:	Facility Name, Room #, Street Address, City, State, Zip
Instructor:	First Name, Last Name, Title, Organization
Materials:	ATC-20-1 Field Manual, Postearthquake Safety Evaluation of
	Buildings (Second Edition); and
	ROVER CD containing the Rapid Observation of Vulnerability
	and Estimation of Risk software.

REGISTRATION

To register for this training, please provide your name, organization, address, phone number, and e-mail address to xxxxx@xxxx.com. For questions or additional information, please contact xxx-xxx.

AGENDA

- Introduction to ATC-20 Methodology
- Posting System
- Evaluation Procedures
- Structural Basics
- Wood Frame Structures
- Masonry Structures
- Concrete Structures
- Steel Frame Structures
- Nonstructural Elements
- Geotechnical Hazards
- Other Hazards Wind and Flood
- Hazardous Materials
- Field Safety
- ROVER Training















FEMA 154, Rapid Visual Screening of Buildings for Potential Seismic Hazards (pre-disaster),

ATC 20, Postearthquake Safety Evaluation of Buildings (post-disaster), and

Rapid Observation of Vulnerability and Estimation of Risk (ROVER)

TRAINING DESCRIPTION

Training on FEMA 154, *Rapid Visual Screening of Buildings for Potential Seismic Hazards*, provides instruction on how to identify potentially hazardous buildings before earthquakes occur. The training covers methods and processes that enable personnel to rapidly identify, inventory, and rank local buildings according to their expected safety and usability during and after earthquakes. Local officials can use these data to plan and prioritize further engineering and vulnerability analysis, emergency-response needs, and mitigation projects.

Training on the ATC-20, *Procedures for Postearthquake Safety Evaluation of Buildings*, provides instruction on rapid and detailed evaluation procedures for evaluating earthquake-damaged buildings and posting them as INSPECTED (apparently safe, green placard), LIMITED ENTRY (yellow placard), or UNSAFE (red placard). The training provides examples which allow attendees to evaluate building damage conditions, assess the overall risk from the damage, and recommend which of the three placards should be posted on the building. These evaluations and placards can be used in planning and executing evacuation, re-entry, and rebuilding strategies.

Rapid Observation of Vulnerability and Estimation of Risk (ROVER) is software that automates the paper-based screening procedures taught in FEMA 154 and ATC-20, *Procedures for Postearthquake Safety Evaluation of Buildings*, trainings. Building-specific data are entered into ROVER in the field via GPS-enabled devices, and are aggregated in a data server. ROVER features include automated geolocation, integrated digital photography and sketching capabilities, and automated retrieval of site-specific soil and hazard data from U.S. Geological Survey maps.



This training is supported by National Earthquake Hazards Reduction Program (NEHRP) National Earthquake Technical Assistance Program (NETAP). For more information visit: <u>http://www.fema.gov/earthquake-training/national-earthquake-technical-assistance-program</u>

TARGET AUDIENCE

The target audience for these trainings includes building officials, engineers, architects, building owners, emergency managers, risk analysts, and other interested citizens and volunteers.

GENERAL INFORMATION

Time:x:xx am - x:xx pmDate:Month, Day, YearLocation:Facility Name, Room #, Street Address, City, State, ZipInstructor:First Name, Last Name, Title, OrganizationMaterials:FEMA 154 report, Rapid Visual Screening of Buildings for Potential Seismic Hazards (hard
copy);
FEMA 154 CD containing a pdf of the report;
ATC-20-1 Field Manual, Postearthquake Safety Evaluation of Buildings (Second Edition); and
ROVER CD containing the Rapid Observation of Vulnerability and Estimation of Risk software.

REGISTRATION

To register for these trainings, please provide your name, organization, address, phone number, and e-mail address to xxxxx@xxxx.com. For questions or additional information, please contact xxx-xxxx.

AGENDA

FEMA 154

- Introduction
- Planning and Managing Rapid Visual Screening
- Completing the Data Collection Form
- Using the RVS Procedure Results
- Example Application of Rapid Visual Screening

ATC-20

- Introduction to ATC-20 Methodology
- Posting System
- Evaluation Procedures
- Structural Basics
- Wood Frame Structures
- Masonry Structures
- Concrete Structures
- Steel Frame Structures
- Nonstructural Elements
- Geotechnical Hazards
- Other Hazards Wind and Flood
- Hazardous Materials
- Field Safety

ROVER Training











Webinar on FEMA E-74, Reducing the Risks of Nonstructural Earthquake Damage

TRAINING DESCRIPTION

Nonstructural components of buildings include all elements that are not part of the structural system; that is, the architectural, mechanical, electrical, and plumbing systems, as well as furniture, fixtures, equipment, and other contents. During the recent earthquakes in Chile, New Zealand, Japan, Virginia and other earlier earthquakes in California, Washington, and other parts of the U.S., nonstructural failures have accounted for the majority of damage and injuries. In many cases, businesses, schools, hospitals, and other organizations had to spend excessive time and dollars for clean-up and repair due to nonstructural failures; therefore impeding continued operations and rapid recovery. Moreover, nonstructural component failures also impeded safe evacuation, delayed rescue, and caused additional hazards such as fire resulting in serious life safety issues.

This 1.5 hour webinar describes the sources and types of nonstructural earthquake damage and the effective methods and guidance that individuals and organizations can use to take action now before the next earthquake and minimize future injuries and property losses from nonstructural risks.

TARGET AUDIENCE

The target audience for this training includes property owners, facility managers, local officials, engineers, architects, small businesses, and emergency managers.

WEBINAR DATE AND TIME

[Day of Week], [Month] [Date], [Year] at [time] [time zone]

REGISTRATION

Participation in this webinar is free; however, audio lines are limited to a maximum of 300 connections. Please register for this webinar at the following link:

hyperlink to registration page



This training is supported by National Earthquake Hazards Reduction Program (NEHRP) National Earthquake Technical Assistance Program (NETAP). For more information visit: <u>http://www.fema.gov/earthquake-training/national-earthquake-technical-assistance-program</u>

MATERIALS

A copy of the speaker's presentation will be available for download by participants at the webinar site. The FEMA E-74 report, *Reducing the Risks of Nonstructural Earthquake Damage* may be downloaded from the following link: http://www.fema.gov/plan/prevent/earthquake/fema74/index.shtm

RECOMMENDED PREREQUISITE

Prior to the Webinar, it is recommended that you view a 30-minute independent study training, IS-325, *Earthquake Basics: Science, Risk, and Mitigation*. The IS-325 training provides basic information on earthquake, its impacts, and general mitigation techniques. The training may be viewed at the following link: <u>http://training.fema.gov/EMIWeb/IS/courseOverview.aspx?code=is-325</u>

AUDIO AND WEB INSTRUCTIONS

To listen to the webinar presentation, refer to the following information:

[Phone number to be provided] [Participant Code to be provided]

To view the webinar at the date and time described above, click on the following link:

[Login Link to be provided]

SYSTEM REQUIREMENTS

[System Requirements to be provided]

CONTACT INFORMATION

For more information regarding the NETAP program, visit National Earthquake Technical Assistance Program at the following link: <u>http://www.fema.gov/earthquake-training/national-earthquake-technical-assistance-program</u>

For questions regarding this webinar, please contact: <u>fema-nehrp@fema.dhs.gov</u>.















FEMA P-593, Seismic Rehabilitation Training for One- and Two-Family Wood-Frame Dwellings

TRAINING DESCRIPTION

Training on FEMA P-593, *Seismic Rehabilitation Training for One- and Two-Family Wood-Frame Dwellings*, promotes seismic rehabilitation of one- and twofamily dwellings in order to reduce earthquake damage losses and increase dwelling habitability following moderate to major earthquakes. This training introduces participants to the effects of earthquakes on wood-frame dwellings, identifying common vulnerabilities, and identifying rehabilitation approaches and available guidelines.

TARGET AUDIENCE

The target audience for this training includes contractors, building officials, engineers, architects, building owners, emergency managers, and other interested technical volunteers.

GENERAL INFORMATION

Time:	<mark>x:xx am – x:xx pm</mark>
Date:	Month, Day, Year
Location:	Facility Name, Room #, Street Address, City, State, Zip
Instructor:	First Name, Last Name, Title, Organization
Materials:	FEMA P-593 report, Seismic Rehabilitation Training for One- and
	Two-Family Wood-Frame Dwellings (hard copy).

REGISTRATION

To register for this training, please provide your name, organization, address, phone number, and e-mail address to xxxxx@xxxx.com. For questions or additional information, please contact xxx-xxx.

AGENDA

- Introduction
- Earthquake Effects
- Seismic Rehabilitation Concepts
- Building Code Requirements
- Prescriptive Rehabilitation Plans
- Condition Survey
- Rehabilitation Construction Basics



This training is supported by National Earthquake Hazards Reduction Program (NEHRP) National Earthquake Technical Assistance Program (NETAP). For more information visit: <u>http://www.fema.gov/earthquake-training/national-earthquake-technical-assistance-program</u>















FEMA 395, Incremental Seismic Rehabilitation for School Buildings

TRAINING DESCRIPTION

This is a recorded one-hour webinar for school officials, teachers, facility managers, and other stakeholders interested in reducing earthquake risks in local schools. Numerous school buildings located in multiple states and U.S. territories are vulnerable to earthquake damage that threatens safety and continued operations. Participants will learn how to: (1) assess and analyze seismic risks; (2) develop actionable plans for reducing and managing these risks; (3) secure nonstructural elements of school facilities; and (4) use incremental seismic rehabilitation as an affordable approach for protecting existing buildings and ensuring occupant safety.

TARGET AUDIENCE

The target audience for this training includes school administrators, board members, facility managers, engineers, and other interested citizens or school safety stakeholders.

GENERAL INFORMATION

This webinar may be viewed online at the following link: <u>https://fema.connectsolutions.com/p13135639/</u>

Copies of the FEMA 395 report, *Incremental Seismic Rehabilitation for School Buildings*, may be ordered from the FEMA Warehouse by calling (800) 480-2520.

AGENDA

- How to assess and analyze your earthquake risks
- How to develop an actionable plan to reduce and manage earthquake risks
- How to initiate an earthquake risk reduction plan for existing school buildings that were not designed and constructed to meet modern building codes
- How to secure "non-structural" elements of the school facility
- How to apply "incremental seismic rehabilitation" to protect buildings and ensure occupant safety
- Why "incremental seismic rehabilitation" is an affordable alternative for school safety



This training is supported by National Earthquake Hazards Reduction Program (NEHRP) National Earthquake Technical Assistance Program (NETAP). For more information visit: <u>http://www.fema.gov/earthquake-training/national-earthquake-technical-assistance-program</u>



FEMA P-767, Earthquake Mitigation for Hospitals

TRAINING DESCRIPTION

In this training, participants are introduced to earthquake hazards in health care settings and learn about methods that can be used to analyze and reduce risks of damage in hospitals and other medical buildings. Such facilities have unique nonstructural components, including equipment and infrastructure systems that can become sources of injury or damage even during smaller earthquakes. By implementing sound, cost-effective mitigation measures, health care facilities can reduce seismic risks and ensure that, in the event of an earthquake, they can remain in operation to serve their communities.

TARGET AUDIENCE

The target audience for this training includes hospital facilities managers, engineers, administrators, and other hospital personnel.

GENERAL INFORMATION

Time:	<mark>x:xx am – x:xx pm</mark>
Date:	Month, Day, Year
Location:	Facility Name, Room #, Street Address, City, State, Zip
Instructor:	First Name, Last Name, Title, Organization
Materials:	FEMA P-767 report, Earthquake Mitigation for Hospitals in pdf
	(electronic) format, on CD ROM

REGISTRATION

To register for this training, please provide your name, organization, address, phone number, and e-mail address to xxxxx@xxxx.com. For questions or additional information, please contact xxx-xxx.

AGENDA

- Introduction: What is Seismic Risk for Hospital Facilities
- Regional Earthquake Hazard
- Building Structural Vulnerability to Earthquakes
- Building Nonstructural Vulnerability to Earthquakes
- Earthquake Performance Expectations Postearthquake
- What can be done to Reduce Seismic Risk, Overview
- Planning and Managing the Process of Earthquake Risk Reduction in Existing Hospitals
- Structural Mitigation
- Nonstructural Mitigation
- Integration Opportunities for Structural and Nonstructural Mitigation
- Possible Mitigation Funding Sources



This training is supported by National Earthquake Hazards Reduction Program (NEHRP) National Earthquake Technical Assistance Program (NETAP). For more information visit: <u>http://www.fema.gov/earthquake-training/national-earthquake-technical-assistance-program</u>





