2022 National Earthquake Program Managers Meeting

March 29, 2022 – Day 1

Housekeeping

- Emergency exits & restrooms
  - Arcade parking lot is rally point
- Please take phone calls outside.
- When providing comments, wait for microphone so everyone can hear you, including virtual participants.

Reminders & Housekeeping cont.

- This meeting is being recorded.
- Virtual participants
  - Mute phones/video unless speaking.
  - Post questions/comments/requests in the chat area.
- For technical issues:
  - Pascal Schuback – schuback@crew.org
  - Brian Blake – bblake@cusec.org

NEPM Meeting - Code of Conduct

- Show up on time & come prepared
- Contribute to meeting goals
- Let everyone participate
- Listen with an open mind

NEPM Meeting - Code of Conduct cont.

- Think before speaking
- Stay on point & on time
- Attack the problem, not the person
- Close decisions & ID action items
- Record outcomes & follow up

NEPM Day 1: Agenda Review

- Welcome & Introductions
- Messaging & DEI Panel
- NEHRP Program Updates
- Working Lunch: Whaley Award
- State Updates & Fireside Chats
- Missouri DOT Survey
- FEMA NEHRP Updates

Welcome & Introductions

- Janell Woodward, Nevada
- Matthew Heckard, Tennessee
- Glen Sachtleben, FEMA RIV

Panel Presentations:
Messaging and Diversity, Equity, and Inclusion

PANEL #1

Althea Rizzo
Oregon

Derrec Becker
South Carolina

PANEL #2

Paul Huang
FEMA

Albert Dennis
FedEx Services

2 Weeks Ready Campaign

Althea Rizzo
Oregon

Messaging: How Audiences are Changing

Derrec Becker
South Carolina

FEMA's Strategic Drive for Equity

Paul Huang – Assistant Administrator | Federal Insurance Directorate

National Earthquake Program Managers Meeting – March 29, 2022

FEMA

FEMA 2022-2026 Strategic Plan

Goal 1: Instill Equity as a foundation of emergency management

Goal 2: Lead whole of community in climate resilience

Goal 3: Promote and sustain a ready FEMA and a prepared nation

FEMA 2022-2026 Strategic Plan

Goal 1: Instill Equity as a Foundation of Emergency Management

1. Cultivate a FEMA that prioritizes and harnesses a diverse workforce

2. Remove barriers to FEMA programs through a people first approach

3. Achieve equitable outcomes for those we serve

Objective 1.1

Cultivate a FEMA that Prioritizes and Harnesses a Diverse Workforce

Objective 1.2

Remove Barriers to FEMA Programs Through a “People First” Approach

Objective 1.3

Achieve Equitable Outcomes for Those We Serve

FEMA

FEMA 2022-2026 Strategic Plan

Goal 1

Instill Equity as a Foundation of Emergency Management

Paul Huang, Assistant Administrator, Federal Insurance Directorate

Diversity, Equity, & Inclusion at FedEx

Albert Dennis – Manager DEI, FedEx Services

National Earthquake Program Managers

March 29, 2022

Diversity, Equity, & Inclusion Purpose Statement

Diversity, Equity & Inclusion at FedEx connects people and possibilities to deliver a better future for team members, customers, suppliers and communities.

We are the employer of choice

- Attracting top talent
- Developing and advancing our talent

We deliver business results

- Driving engagement through inclusion
- Focusing on quality (QDM)
- Providing innovative solutions

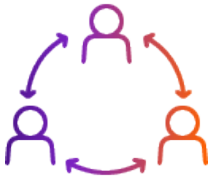
We enrich the world

- Investing in our communities
- Serving people where we live and work

We have four key strategic pillars

Our People

Recruit, retain, develop, and provide advancement opportunities for team members

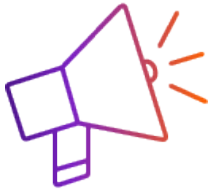


Our Education and Engagement

Enrich, expand, and enhance our culture through DEI education

Our Communities, Customers, and Suppliers

Serve and support our communities, customers, and suppliers



Our Story

Amplify the stories of our people, celebrate differences, and promote DEI efforts across the enterprise

FedEx Diversity, Equity, and Inclusion

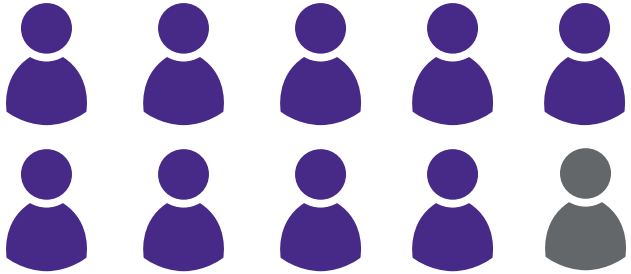
Operating Principles

Compete collectively
Operate collaboratively
Innovate digitally

How are we doing?

25% of FedEx management employees globally are women.

38% of FedEx management employees in the U.S. are minorities



The FedEx Board of Directors includes 12 directors, four of whom are women and three of whom are ethnically diverse. Women represent 25% of FedEx management employees globally, while 38% of management employees in the U.S. are minorities.

Ways for Team Members to engage

BUSINESS RESOURCE TEAMS

Employee groups based on dimensions of diversity that are independently run at each FedEx Operating Company

DEI EDUCATION

Self facilitated offerings on FLC, DEI microlearnings, and DEI facilitated trainings which can be scheduled by managers

DEI DELEGATES

Each SVP Organization has a DEI Delegate, a member of the FedEx Culture Action Team focused on embedding DEI into our culture

VOLUNTEER ACTIVITIES

Support diverse community efforts on fedexcares.com or through scheduled volunteer opportunities

NEHRP Program Updates

- NIST – Jay Harris
- NSF – Jacqueline Meszaros
- FEMA – Ed Laatsch
- USGS – Tom Pratt

NEHRP Strategic Plan for FY22-29

NEHRP State of the Union and Program Updates

2022 National Earthquake Program Managers Meeting

March 29-31, 2022 -- Memphis, TN

Jay Harris

Acting NEHRP Director

Engineering Laboratory

NIST

NEHRP Strategic Plan, FY22-29

Development of updated Strategic Plan—

- Strategy to support NEHRP
  - Policy, Vision, Mission
  - 4 Strategic Goals
  - 18 Strategic Objectives
  - 8 Program-Identified Focus Areas

Policy, Vision, and Mission

National Policy—

Strengthen the security and resilience of the nation against earthquakes, to promote public safety, economic strength, and national security—Executive Order 13717

Program Vision—

A nation that is ready and capable to withstand, respond to, and recover from earthquakes and their consequences

Program Mission—

Develop, advance, and disseminate knowledge, tools, practices, and policies to enhance the nation's capabilities to withstand, respond to, and recover from earthquakes and their consequences

Development of Strategic Goals

Previous Strategic Goals—

Goal	2001	2008
1	Improve the understanding of earthquakes and their effects.	Improve understanding of earthquake processes and impacts.
2	Develop effective **practices and policies** for earthquake loss-reduction and accelerate their **implementation**.	Develop cost-effective measures to reduce earthquake impacts on individuals, the built environment, and society-at-large.
3	Improve techniques to reduce seismic vulnerability of facilities and systems.	Improve the earthquake resilience of communities nationwide.
4	Improve seismic hazard identification and risk assessment methods and their use.	

2008 goals were supported by 14 strategic objectives and 9 strategic priorities

Development of Strategic Goals

Development of updated Strategic Goals—

- Conceptual Aspirations for the Goals
  - Simplify the understanding of the goals and objectives
    - The public should understand the role of the Program and who we are. Redundancy in messaging to reinforce the vision throughout the strategic plan components.
    - Define what we need to measure and manage for the Program (e.g., facilitate developing the NEHRP biennial report to Congress).
    - Goals capture the essential Program actions for an earthquake (i.e., timeline of actions).
  - Goals should be unique and mutually supportive
    - The Goals should be broad enough that all Program agencies are included in each one.
    - View and evaluate the Program as a system; recognize that the agencies are individual but also interconnected components of the system.
    - Create Goals for the system that minimize risks from unintended consequences resulting from a component.
    - Goals should be used to identify the intended accomplishment of the strategy of Program activities.

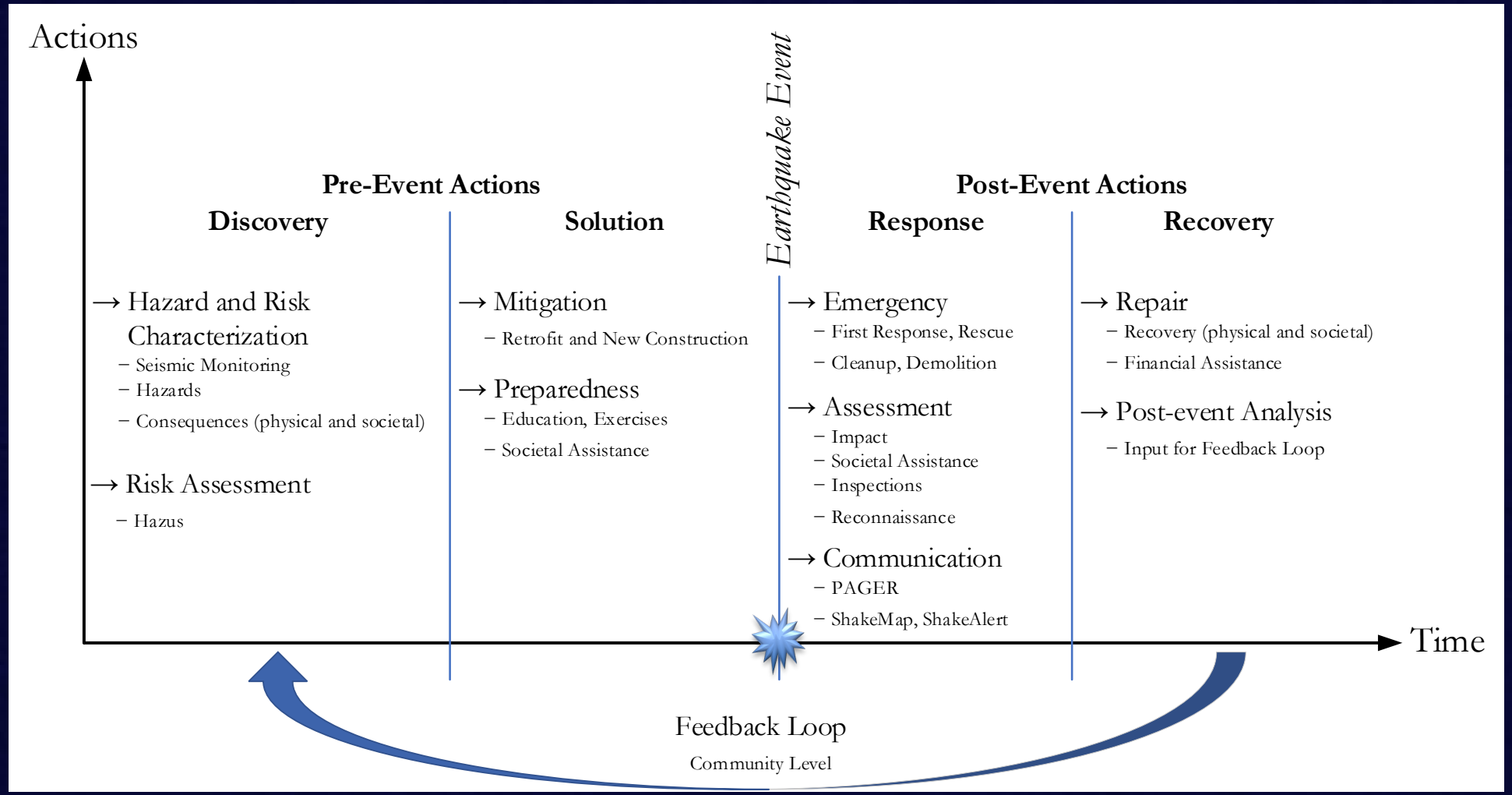
Development of Strategic Goals

Development of updated Strategic Goals—

- Conceptual Aspirations for the Goals
  - Use language to enhance positive awareness
    - For example, consider reframing “reducing hazard” to “increasing resilience”.
  - NEHRP has been in existence for over forty years, during which time significant advances have been made in earthquake monitoring and notification systems, earthquake hazard and risk assessments, earthquake resistant design and construction practices, and public awareness of the earthquake threat
    - Goals should be developed to support the previous forty years while seeking a path for the future.

Development of Strategic Goals

Timeline of essential actions for an earthquake—



Development of Strategic Goals

Updated Strategic Goals—

- Goal 1: [PRE-EVENT – hazard and consequence characterization]
  - Advance the understanding of earthquake processes and their consequences.
- Goal 2: [PRE-EVENT – risk assessment and mitigation]
  - Enhance existing and develop new information, tools, and practices for protecting the nation from earthquake consequences.
- Goal 3: [PRE-EVENT – preparedness, POST-EVENT – communication]
  - Promote the dissemination of knowledge and implementation of tools, practices, and policies that enhance strategies to withstand, respond to, and recover from earthquakes.
- Goal 4: [POST-EVENT – assessment and analysis]
  - Learn from post-earthquake investigations to enhance the effectiveness of available information, tools, practices, and policies to improve earthquake resilience.

Development of Strategic Goals

Agency roles and priorities—

	1	2	3	4
Goal	Advance the understanding of earthquake processes and their consequences.	Enhance existing and develop new information, tools, and practices for protecting the nation from earthquake consequences.	Promote the dissemination of knowledge and implementation of tools, practices, and policies that enhance strategies to withstand, respond to, and recover from earthquakes.	Learn from post-earthquake investigations to enhance the effectiveness of available information, tools, practices, and policies to improve earthquake resilience.
Legislation, Priorities	2001-1,4; 2008-1 P.L. 3(1), 3(3); 5(a)(2)(C) • FEMA iii,iv • USGS A,D,F,I,J • NSF ii,iii • NIST C NRC 1,4,5	2001-2,3,4; 2008-2,3 P.L. 3(2), 3(5), 3(6), 5(a)(2)(A),(D) • FEMA iii,iv • USGS C,D,F,H,I,J • NSF iv-vi, viii • NIST C,D,E NRC 2,3,6-8,10-16	2001-2, 2008-3 P.L. 3(1), 3(4), 3(5), 3(7), 5(a)(2)(B) • FEMA i,ii,iii,iv • USGS B,D,E,G • NSF i • NIST A,B NRC 17,18	P.L. 11 (all agencies)

Strategic Objectives, Goal 1

Goal 1: Advance the understanding of earthquake processes and their consequences.

1) Advance the understanding of earthquake phenomena and the propagation of seismic energy.
2) Advance the characterization of the nation's seismicity, including sources, and seismic hazards.
3) Advance seismic monitoring including improving, extending, and maintaining the Advanced National Seismic System.
4) Advance the understanding of the consequences of earthquakes and associated hazards to society and the built environment.
5) Advance the understanding of social, behavioral, and economic factors, including equity, pertinent to implementation of earthquake preparedness, mitigation, and recovery strategies.

Strategic Objectives, Goal 2

Goal 2: Enhance existing and develop new information, tools, and practices for protecting the nation from earthquake consequences.

6) Enhance current earthquake scenarios, risk assessment methodologies, and loss estimation tools to improve seismic risk information.

7) Further develop and implement a West Coast earthquake early warning system and its associated communication, education, and outreach.

8) Enhance and develop cost-effective tools and practices, including up-to-date building codes and national consensus standards, that improve the seismic performance of new and existing buildings and lifeline infrastructure.

9) Advance knowledge to facilitate characterization of earthquake resilience and develop tools to measure successful implementation of resilience practices and policies.

Strategic Objectives, Goal 3

Goal 3: Promote the dissemination of knowledge and implementation of tools, practices, and policies that enhance strategies to withstand, respond to, and recover from earthquakes.

10) Enhance the accuracy, timeliness, usefulness, and accessibility of earthquake information products for a diverse range of users to better prepare for and respond to earthquakes.

11) Implement and regularly update a National Seismic Hazard Model based on the latest research, source models, seismicity, and field studies, essential for implementing state-of-the-art mitigation, design, and construction strategies.

12) Actively engage in the continual development and use of up-to-date seismic design guidelines, standards and building codes, and advocate for their adoption and enforcement at the state, local, tribal, and territorial level.

13) Support and enhance earthquake education, emergency drills, and exercises to promote effective earthquake awareness as well as mitigation, response, and recovery planning.

14) Promote the implementation of earthquake preparedness, safety, response, and recovery strategies, which account for social, behavioral, and economic factors, including equity.

Strategic Objectives, Goal 4

Goal 4: Learn from post-earthquake investigations to enhance the effectiveness of available information, tools, practices, and policies to improve earthquake resilience.

15) Maintain and advance Program-wide procedures and policies for post-earthquake investigations and data acquisition management.

16) Advance earthquake preparedness, safety, response, and recovery strategies by translating post-earthquake investigation results into approaches for improved resilience.

17) Identify and take advantage of opportunities to collaborate on development of scientifically informed metrics and actions to evaluate community earthquake resilience after an earthquake, which account for social, behavioral, and economic factors, including equity.

18) Provide mechanisms to promote relevant feedback to the public regarding lessons learned from earthquakes.

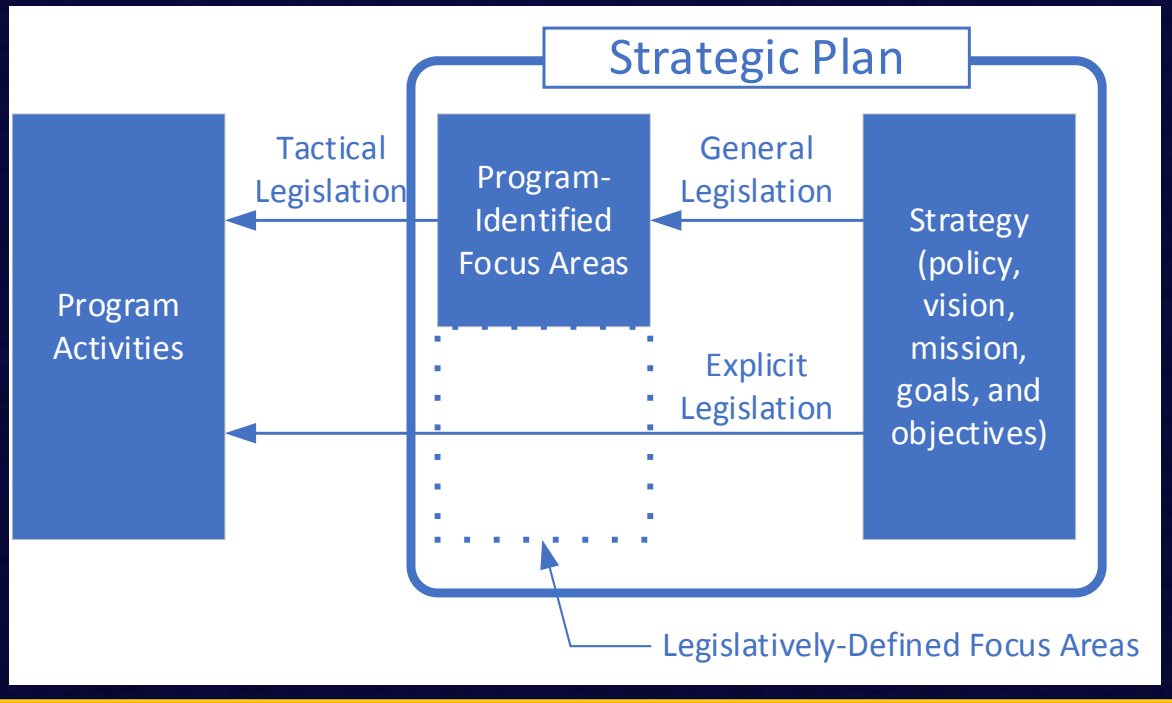
Focus Areas

Legislative Roles and Responsibilities (outlined in EHR Act, reauthorized in 2018)

The Plan reflects congressional requirements and is intended to guide the development and implementation of programmatic activities by the Program agencies.

The strategy outlined establishes a specific integrated and coordinated approach for the development and accomplishment of Program activities to support seismic risk reduction.

1. Explicit Legislation
2. General Legislation – eight Program-identified focus areas



Focus Areas

Program-Identified Focus Areas—

1. Advance earthquake science for subduction zone regions.
2. Develop enhanced performance-based seismic design procedures and metrics for the functional recovery of buildings and lifeline infrastructure.
3. Advance performance-based seismic design and assessment methods to implement multisystem coordination.
4. Further expand earthquake early warning capabilities.
5. Develop consistent performance guidance for lifeline infrastructure.
6. Enhance guidance to ensure that information and tools effectively support the needs of those who implement mitigation, preparedness, and recovery measures.
7. Advance the science of earthquake sequence characterization.
8. Enhance risk reduction strategies for federal agencies.

Questions

National Science Foundation

Fundamental Science in Support of NEHRP

NSF at a Glance

NEHRP ROLE: Fundamental Research

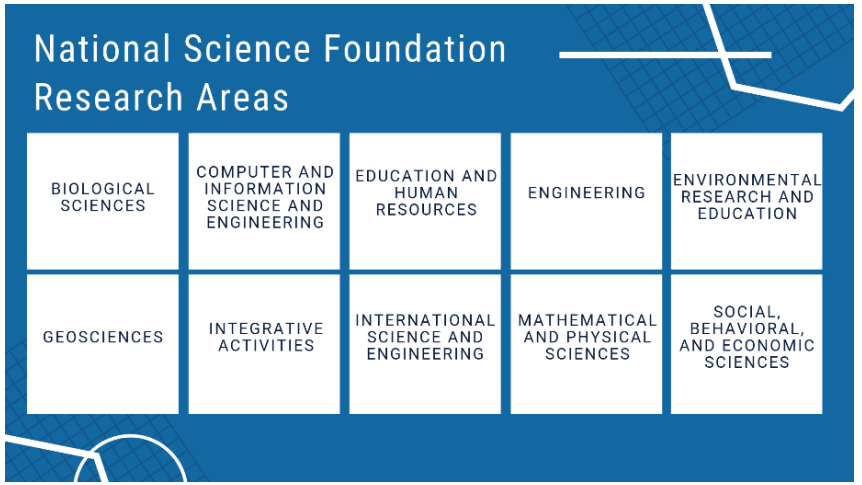
NSF Mission

To promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense; and for other purposes.

Proposal Review Criteria

- Intellectual Merit
- Broader Impacts

FIELDS



NSF Taps the Intellectual Prowess of Our Distributed Scientific Workforce

We FUND research; we do not conduct it ourselves.

Types of NEHRP-relevant Investments

Types of Funded Activities	NEHRP Relevance
Unsolicited Proposals	All Directorates
Special Solicitations	- NSF-NIST Disaster Research Resilience Grants - Smart and Connected Communities Competitions
Infrastructure	Natural Hazards Engineering Research Infrastructure: Shake Tables, Tsunami Tank, SimCenter, DesignSafe
Extreme Event Response Networks	StEER and GEER particularly. Also: SSEER.

“That tool was once a science project”

01

1912 Continental Drift Theory

Could see that land masses had moved, but no consensus theory.

02

1964 Great Alaskan EQ and Tsunami

Followed seismic waves around the globe. Found major faults and how they related.

03

Risk Maps by 1990s

Reflect best understanding. Enable risk estimates and mitigations.

04

Anomalies in the 2010s

Unexpected MW swarms: association with deep well injections. Policy actions result.

“That tool was once a science project”

01

Understanding P vs S Waves

02

Triangulation of seismic signals to forecast track

03

Improve Algorithms for Accuracy

04

Embed Results into a Warning System

Take-away Messages from NSF

NSF's role in NEHRP is focused on Fundamental Science.

Fundamental research is the Seed Corn for better tools and practices.

NSF researchers WANT to make a difference and propose great ideas.

NEHRP helps NSF share community needs with researchers, so they can address them.

NSF hopes the earthquake community can recognize and support the science in turn.

NSF Shares Your Commitment to a Better Future

FEMA NEHRP Rethink Update

2022 NEPM | Ed Laatsch, Director – Planning, Safety & Building Science Division

Introduction & Purpose

FEMA NEHRP Rethink

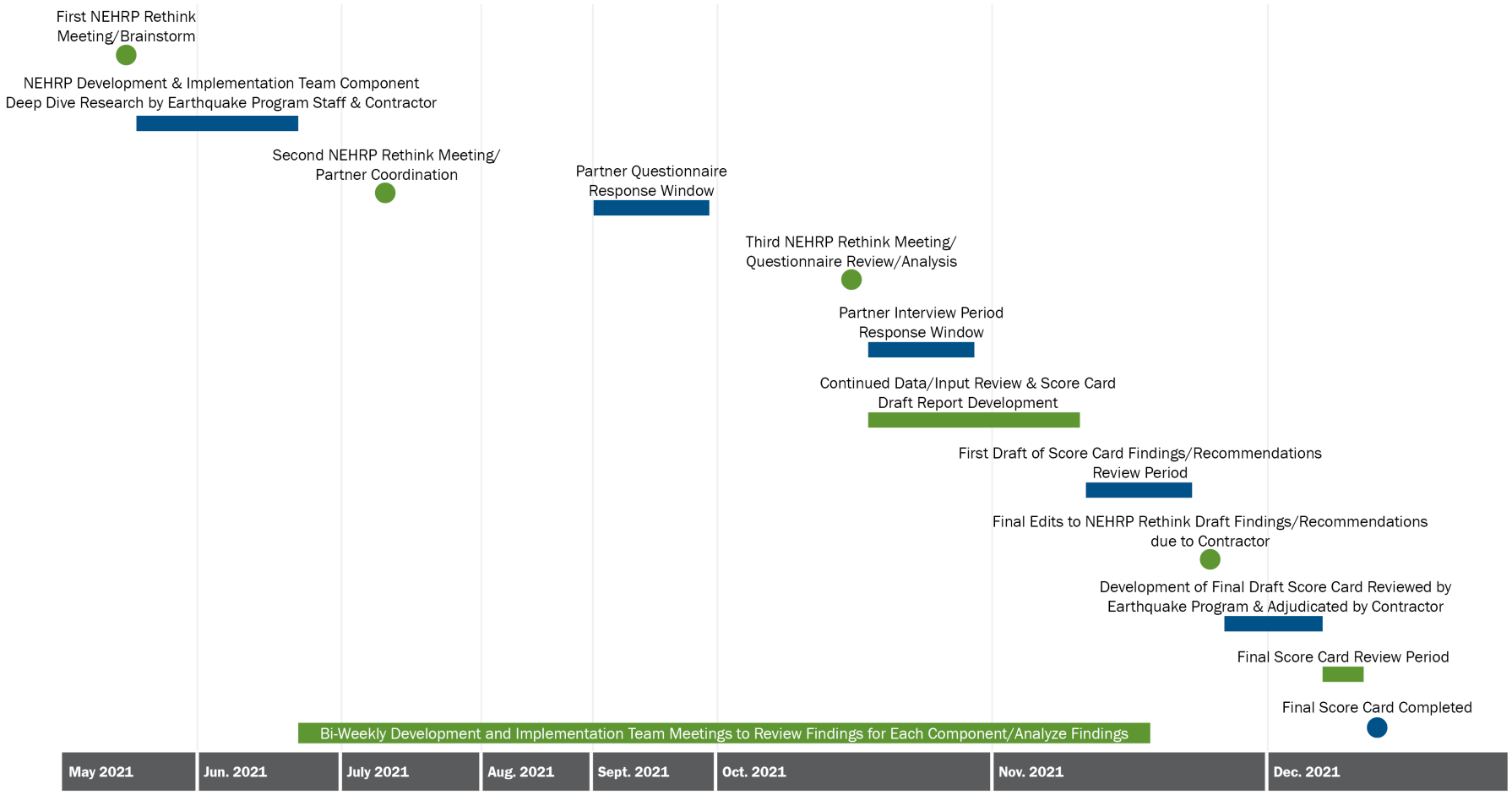
- Within the parameters of the NEHRP goals, it is important that FEMA do the following:
  - Step outside of our everyday routine/efforts & evaluate the Program to ensure we are best serving the Nation.
  - Evaluate what we are doing vs. What we should be doing.
    - The Program has achieved a lot over the years and been very successful.
    - How do we achieve the right value proposition moving forward?
  - Identify the gaps/needs/opportunities to ensure we are prioritizing correctly.
    - If a certain need/gap is already being fulfilled, should we shift resources to those that are not? Start to address the unmet opportunities.

Purpose of the NEHRP Rethink

- Evaluate what is working and what is not.
- Showcase the effectiveness of the Program.
- Increase the Program’s impact by prioritizing current/future needs/gaps/opportunities.
- Enable EWPB to better plan for the future, while being good stewards of the taxpayers' dollars and achieving the mission and goals of NEHRP.

NEHRP Rethink Process

Recap of Milestones & Timeline (To Date)



NEHRP Rethink Component Review

Development Team

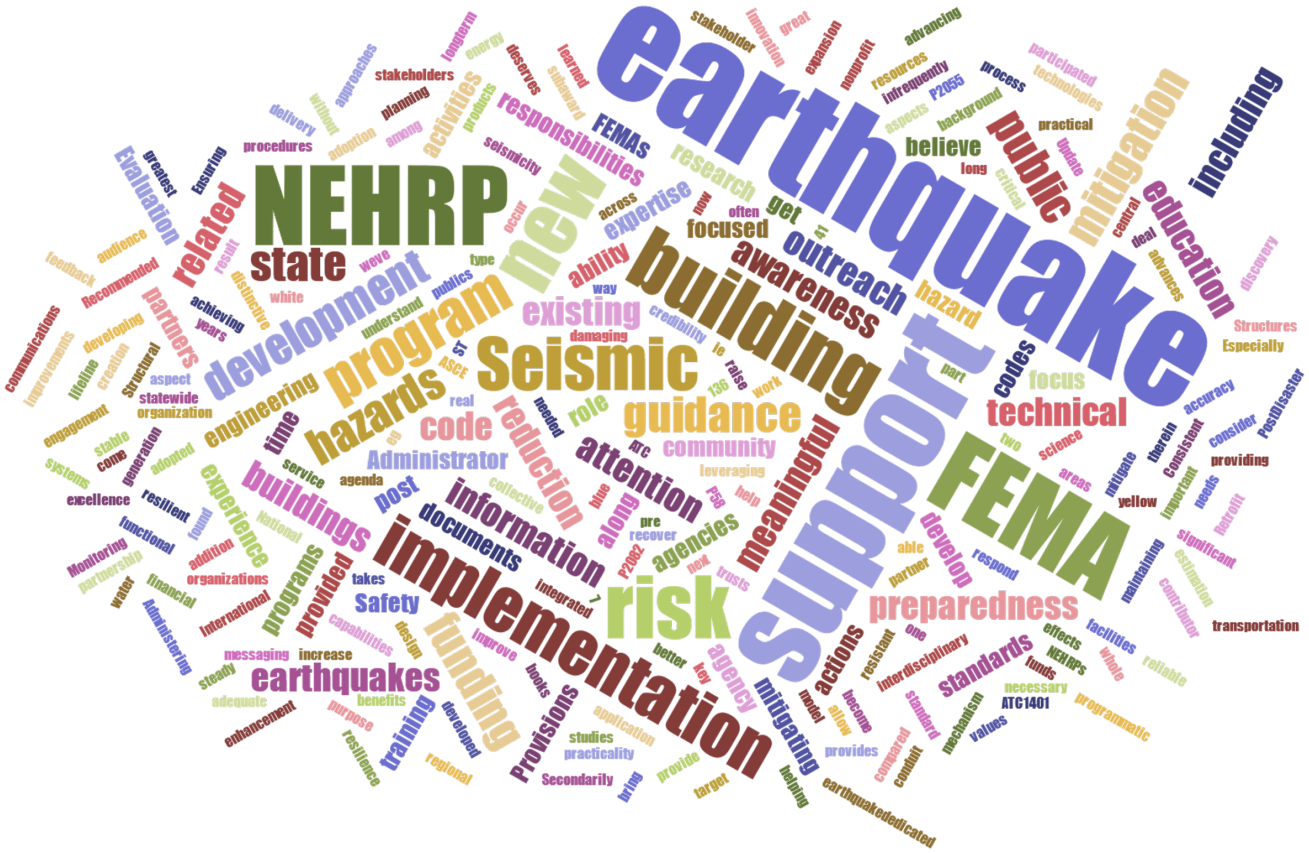
- Development/support of the implementation of seismic code resources for model building codes and associated consensus-based design standards (new and existing buildings and lifelines infrastructure).
- Development and implementation of publications/guidance/tools/training that facilitate implementation of earthquake risk-reduction measures (new and existing buildings and lifelines infrastructure).
- Post-earthquake observations and development of recommendations for improving future performance.
- Address the FEMA NIST functional recovery report.

Implementation Team

- FEMA NEHRP State Assistance Grant Programs (Individual State Assistance and Multi-State and National Assistance)
- Agency Earthquake Education, Outreach and Public Awareness
- Training (Including National Earthquake Technical Assistance Program (NETAP)).
- External Partner Coordination – Assist private-sector groups to reduce future earthquake losses.
- Interagency/Intra-agency Coordination (including NEHRP)
- Cooperative Agreement Demonstration Projects

NEHRP Rethink Report Card Outcomes & Next Steps

NEHRP Rethink Report Card Word Cloud



Overview of Responses

- 17 components/organizations responded
  - 9 identified themselves as Technical Subject Matter Experts
  - 5 identified themselves as Consortia & Partners
  - 4 identified themselves as Regional POCs
  - 3 identified themselves as State Program Managers
    - *Please note that some people identified themselves in multiple roles.*
    - *From this group, a smaller set was then interviewed for additional information based on their responses.*

NEHRP Rethink Score Card Examples

- Developing
  - NEHRP funding: Mentioned as the single greatest challenge and the most meaningful aspect to operating a successful earthquake program in a state.
    - The program will continue to submit PDOs in an attempt to receive additional funding.
    - The NEHRP Reauthorization is also a possible source for additional funding.
- Competent
  - NEHRP State Assistance Program Guidance
    - As a means of addressing concerns identified via the questionnaire and interviews, in addition to two semi-annual calls, FEMA headquarters will now be hosting quarterly calls and/or sending quarterly newsletters to cover various topics for education and awareness purposes.
    - Will continue to expand the grant/NOFO related information on FEMA.gov.
    - Will develop and better promote additional/existing programmatic resources (ex. logic model checklist, quarterly reporting template, quarterly newsletters, etc.)

NEHRP Rethink Score Card Examples continued

- Exemplary
  - Development of Earthquake Risk Reduction Guidance
    - FEMA has been responsible for the most significant advances in seismic and performance-based engineering practice over the past 30 years. Through its code monitoring and support activities, it is staying on top of future technical development needs for engineering practice and has been able to pivot quickly to fill those needs.

Next Steps

- The full EWPB Team will meet April 14th to prioritize themes developed and lay out CY22 activities
- Being mindful of time/resources, only two – three activities will be chosen for this calendar year.
- A number of workgroups will be stood up to aid in these efforts.

Thank you!

FEMA

USGS Update: National Earthquake Program Manager's Meeting, 2022

Thomas Pratt

Central and Eastern Region Coordinator, Earthquake Hazards

Gavin Hayes

Senior Science Advisor for Earthquake and Geologic Hazards

Michael Blanpied

Associate Coordinator, Earthquake Hazards Program

USGS
science for a changing world

ShakeAlert Status

- The current status of ShakeAlert earthquake early warning can be found at:
- https://www.usgs.gov/programs/earthquake-hazards/science/current-status-and-next-steps

USGS
science for a changing world

National Seismic Hazard Model 2023 update:

- Information can be found at:
- https://www.usgs.gov/programs/earthquake-hazards/seismic-hazard-maps-and-site-specific-data

- The schedule for upcoming workshops can be found at:
- https://www.usgs.gov/programs/earthquake-hazards/nshmp-workshops

USGS science for a changing world

Updating the NEHRP post-eq investigations plan

Project is being led by the Applied Technology Council, under contract with the USGS. The Project Manager is Justin Moresco.

Project Technical Committee (report authors):

- Chris Poland, Chris D Poland Consulting Engineer
- Johnathan Bray, JD Bray Consultants, LLC
- Laurie Johnson, Laurie Johnson Consulting and Research
- Sissy Nikolaou, National Institute of Standards and Technology
- Ellen Rathje, University of Texas at Austin
- Brian Sherrod, US Geological Survey

Updating the NEHRP post-eq investigations plan

Project Review Panel:

- Diego Arcas, NOAA
- David Green, NASA
- Gari Mayberry, USAID
- Luciana Astiz, NSF GEO
- Jacqueline Meszaros, NSF ENG
- Andrea Ruminski, USACE
- Heidi Tremayne, EERI
- Keith Knudsen, USGS
- Tom Holzer, USGS (retired)
- Tanya Brown-Giammanco, NIST
- Katherine Johnson, NIST
- Abraham Gunn, FEMA
- Pataya Scott, FEMA
- Khalid Mosalam, UC Berkeley, representing StEER
- Michael Oskin, UC Davis, representing SCEC
- Lori Peek, representing the Natural Hazards Center and CONVERGE

Cecil H. Whaley, Jr. NEPM Award

Cecil H. Whaley, Jr. - Tennessee
April 8, 1947 – March 19, 2020

Award Criteria & Selection

- State Earthquake Program Manager or support staff w/3 + years in program
- Spirit of collaboration, innovation, advocacy, and contribution to NEHRP & NEPM communities
- Nominated by NEPM Committee

Cecil H. Whaley, Jr. - Tennessee
April 8, 1947 – March 19, 2020

And the 2022 recipient is…..

2022 Cecil H. Whaley, Jr. Award Recipient

Bob Carey
Utah Division of Emergency Management

State Updates & “Fireside Chats”

- Tennessee – Adam Stewart
- Utah – John Crofts
  URM Schools Inventory
- Arkansas – Hilda Booth
- Idaho – Susan Cleverly
  Cascadia Rising
- Illinois – Scott Gauvin
- Nevada – Janell Woodward
- Kentucky – Steve Brukwicki
- Missouri – Jeff Briggs

Department of Military | TEMA

Tennessee EQ Program Activities

2022

NEPM 2022

Adam Stewart

ShakeOut

- 382k participants (17% increase over 2020) but still much lower than pre-Covid

- Oct. 2021 ad campaign supported by CUSEC
  - YouTube, Facebook, Spotify, & Instagram
  - Video, audio, and graphic ads
  - 287k views/accounts reached
  - 71k engagements

TNSAVE

- Participated in Aug. 2021 Vigilant Guard Exercise, testing call-down procedures
- Participated in regional safety evaluation program meeting, training, and exercise in St. Louis, MO in Sept./Oct. 2021 – event hosted by Missouri and CUSEC at Jefferson Barracks
- Two training classes since last NEPM
  - July 2021 – Virtual w/25 participants
  - February 2022 – Hybrid in-person & virtual w/33 participants
- Working on a recertification training video for membership
- Continues to meet monthly and have resumed in-person training and quarterly board meetings

Fayette County Inventory

- Working with CUSEC to conduct inventory of County-wide critical facilities using FEMA P-154
- 40+ facilities screened w/completion planned for spring
- CUSEC to review on Thursday during NEPM

Fayette County Inventory

P-154 Building Screenings Dashboard

State Filter: All | TN

Select a Building Name
Show All Buildings

Screenings Completed
50

8	15	27
Final Level 1 Score ≥ 3	2 > Final Level 1 Score < 3	Final Level 1 Score < 2

Fayette County Solid Waste Recycle Building
741 Justice Dr
Somerville, TN
Building Type: S3 (LM)
View FEMA P-154 Report
Level 1 Score: 1.40

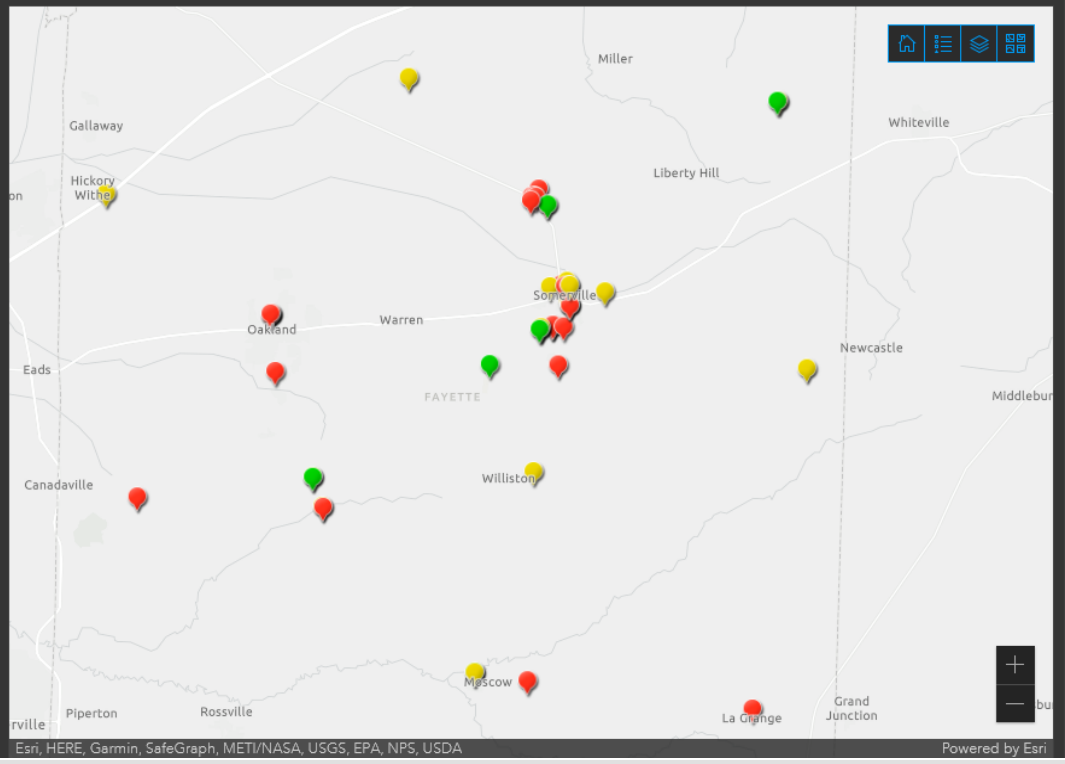
Oakland Elementary
14925 Highway 194
Oakland, TN
Building Type: RM1 (FD)
View FEMA P-154 Report
Level 1 Score: 0.30

North East Fayette Fire Station 13 (Storage)
933 Mt Moriah Dr
Somerville, TN
Building Type: S3 (LM)
View FEMA P-154 Report
Level 1 Score: 2.20

North East Fayette Fire Station 13
905 Mount Moriah Dr
Somerville, TN
Building Type: W1
View FEMA P-154 Report
Level 1 Score: 3.30

Moscow Station 9 (Addition)
155 4th Ave
Moscow, TN
Building Type: S3 (LM)
View FEMA P-154 Report
Level 1 Score: 2.20

Last update: a few seconds ago



Seismicity Region	Moderately High
Basic Score	1.80
Building Type	Reinforced masonry with flexible floor and roof diaphragms
Score Modifiers	-2.20
Final Level 1 Score	0.30
Level 1 Comments	Heavy over hangs at entrance
Perform Level 2 Screening?	No
Final Level 2 Score	N/A
Level 2 Comments	
Detailed Structural Evaluation Required?	Yes, score less than the cut-off

oakland front.png

EQ Mitigation Kits

- Working with CUSEC and West TN Region, created EQ Mitigation kits for individuals and distributed through county EMAs as part of ShakeOut/National preparedness month
- Kits included items to secure furniture, nonstructural elements against earthquake shaking
- 40 kits were distributed in W. TN, with assistance from county EMAs
- Amazon gift card drawing was held for recipients who provided proof of installation

EQ Comic Books

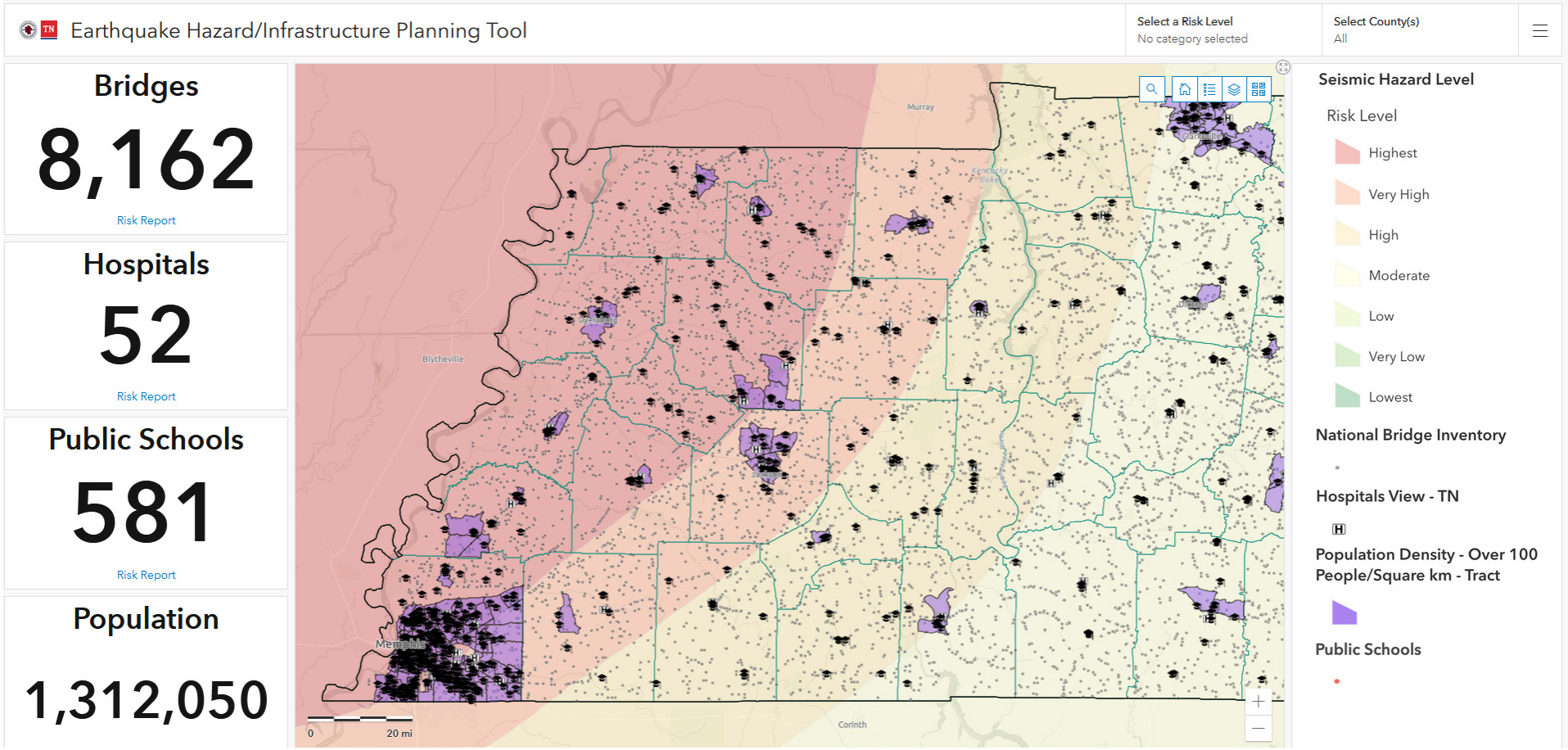
- Reprinted 25,000 EQ comic books
- CUSEC distributed to 6th graders at 90+ schools during Earthquake Awareness Month (Feb. 2022)

EQ Hazards and Infrastructure Dashboard

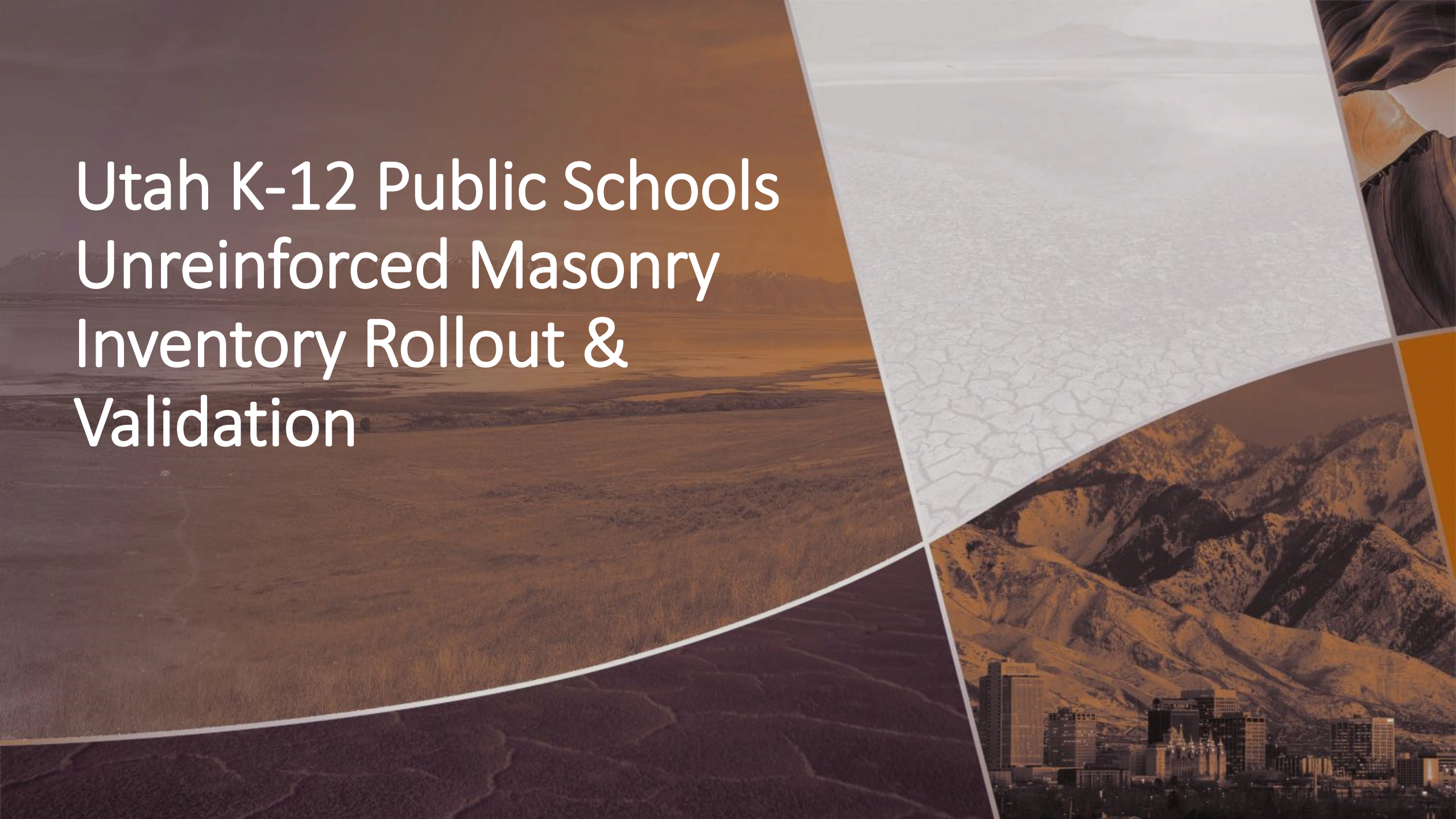
- CUSEC developing a GIS dashboard for earthquake hazards and infrastructure, for mitigation and resilience planning.

- Dashboard will show critical facilities and infrastructure and provide reports for county and state planners about potential risks / vulnerable infrastructure

EQ Hazards and Infrastructure Dashboard



Utah K-12 Public Schools Unreinforced Masonry Inventory Rollout & Validation



Earthquake Risk is Real!

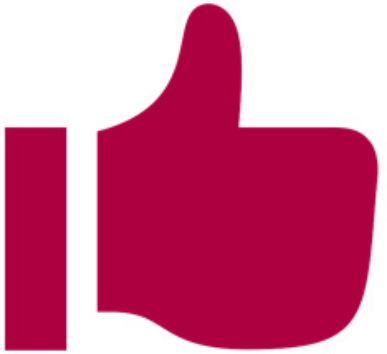
Wasatch Front Earthquake Probability for the Next 50 Years

43%

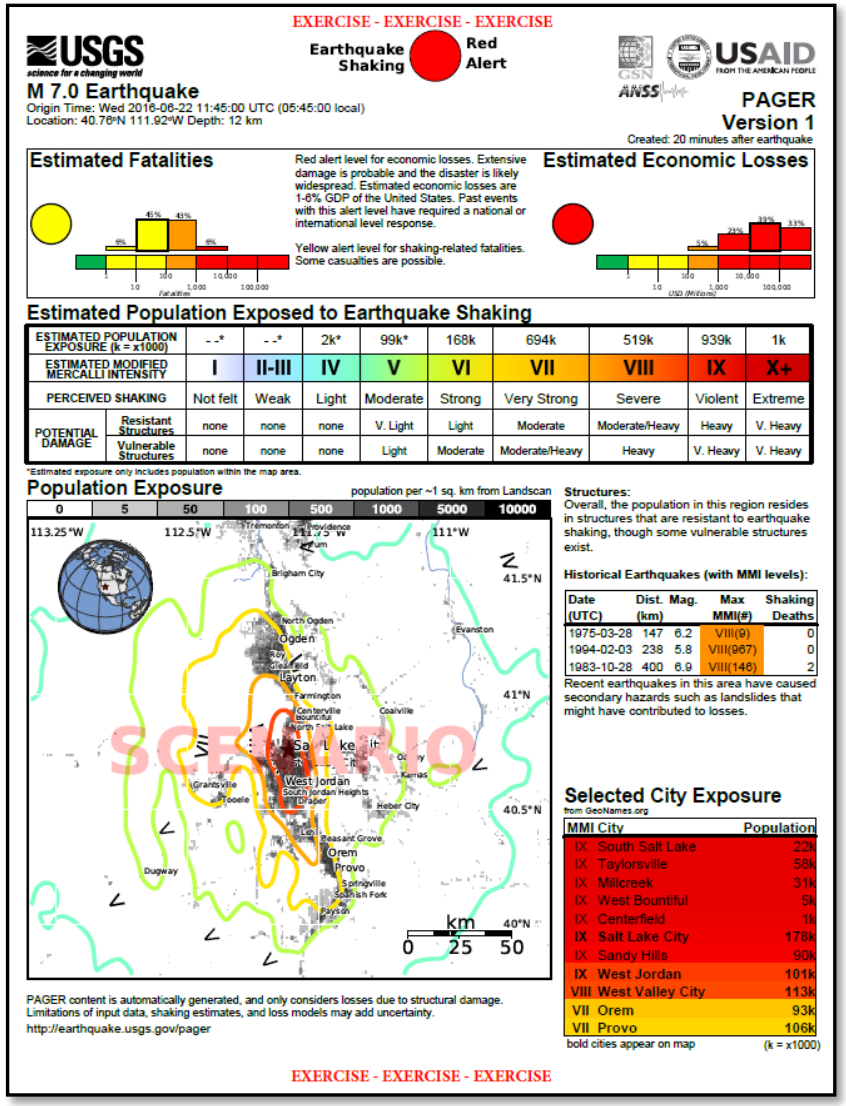
PROBABILITY OF MAGNITUDE 6.75-7.5 EARTHQUAKE

57%

PROBABILITY OF MAGNITUDE 6.0 EARTHQUAKE



Earthquake Risk is Real!



EXERCISE - EXERCISE - EXERCISE

USGS science for a changing world

Earthquake Shaking: Red Alert

USAID FROM THE AMERICAN PEOPLE

GSN ANSS

M 7.0 Earthquake

Origin Time: Wed 2016-06-22 11:45:00 UTC (05:45:00 local)
Location: 40.76°N 111.92°W Depth: 12 km

PAGER
Version 1
Created: 20 minutes after earthquake

Estimated Fatalities

Red alert level for economic losses. Extensive damage is probable and the disaster is likely widespread. Estimated economic losses are 1-6% GDP of the United States. Past events with this alert level have required a national or international level response.

Yellow alert level for shaking-related fatalities. Some casualties are possible.

Estimated Economic Losses

Estimated Population Exposed to Earthquake Shaking

ESTIMATED POPULATION EXPOSURE (k = x1000)		-.*	-.*	2k*	99k*	168k	694k	519k	939k	1k
ESTIMATED MODIFIED MERCALLI INTENSITY		I	II-III	IV	V	VI	VII	VIII	IX	X+
PERCEIVED SHAKING		Not felt	Weak	Light	Moderate	Strong	Very Strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	Resistant Structures	none	none	none	V. Light	Light	Moderate	Moderate/Heavy	Heavy	V. Heavy
	Vulnerable Structures	none	none	none	Light	Moderate	Moderate/Heavy	Heavy	V. Heavy	V. Heavy

*Estimated exposure only includes population within the map area.

Population Exposure

population per ~1 sq. km from Landscan

Structures:
Overall, the population in this region resides in structures that are resistant to earthquake shaking, though some vulnerable structures exist.

Historical Earthquakes (with MMI levels):

Date (UTC)	Dist. (km)	Mag.	Max MMI(#)	Shaking Deaths
1975-03-28	147	6.2	VIII(9)	0
1994-02-03	238	5.8	VIII(967)	0
1983-10-28	400	6.9	VIII(146)	2

Recent earthquakes in this area have caused secondary hazards such as landslides that might have contributed to losses.

Selected City Exposure
from GeoNames.org

MMI	City	Population
IX	South Salt Lake	22k
IX	Taylorsville	58k
IX	Millcreek	31k
IX	West Bountiful	5k
IX	Centerfield	1k
IX	Salt Lake City	178k
IX	Sandy Hills	90k
IX	West Jordan	101k
VIII	West Valley City	113k
VII	Orem	93k
VII	Provo	106k

bold cities appear on map (k = x1000)

PAGER content is automatically generated, and only considers losses due to structural damage. Limitations of input data, shaking estimates, and loss models may add uncertainty.
http://earthquake.usgs.gov/pager

EXERCISE - EXERCISE - EXERCISE

Red Alert: catastrophic losses.

Significant damage to utilities and critical infrastructure.

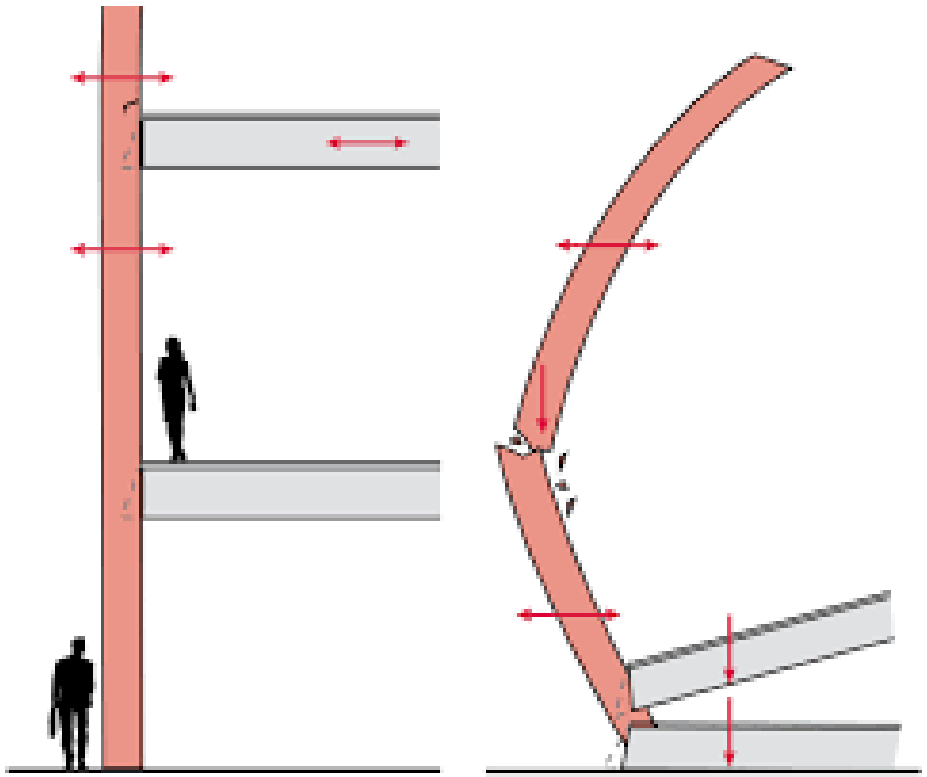
$80+ billion economic losses.

2000+ anticipated fatalities.

What Is Unreinforced Masonry?

Unreinforced Masonry (URM) buildings don't have any steel holding the brittle bricks together.

URMs experience **life-threatening damage at low levels of shaking.**



During an earthquake, an unreinforced floor can cause walls – both interior and exterior – to collapse.

URM Impacts on the Public

- URM walls can often collapse outwards.
- Falling bricks can be fatal during earthquakes.
- Endangers pedestrians and undamaged adjacent buildings.
- Makes a private risk public.

Wasatch Front Unreinforced Masonry Risk Reduction

- Cooperative effort (2019).
  - Over 120 participants with a broad range of expertise.
- Magna Earthquake (March 18, 2020).
- Risk Reduction Strategy released (March 2021).
  - An important recommendation was to complete the **Unreinforced Masonry School Inventory.**
  - Includes other life-saving recommendations.
    - Protect life, property, environment and commerce.

URM Strategy: Overarching Goals

1. Establish a statewide URM risk reduction program.
2. Protect schools: retrofit, repurpose, or demolish vulnerable schools.
3. Mitigate critical government facilities to implement recovery.
4. Tighten existing building code loopholes at the state level.
5. Empower local communities to enforce existing retrofit requirements and enhance as locally appropriate.

URM Strategy: Goal 2

Protect schools

- Set aggressive dates to repurpose, retrofit, or demolish URM schools.
- Technical support to local school districts - guide through (BRIC) grant application process.

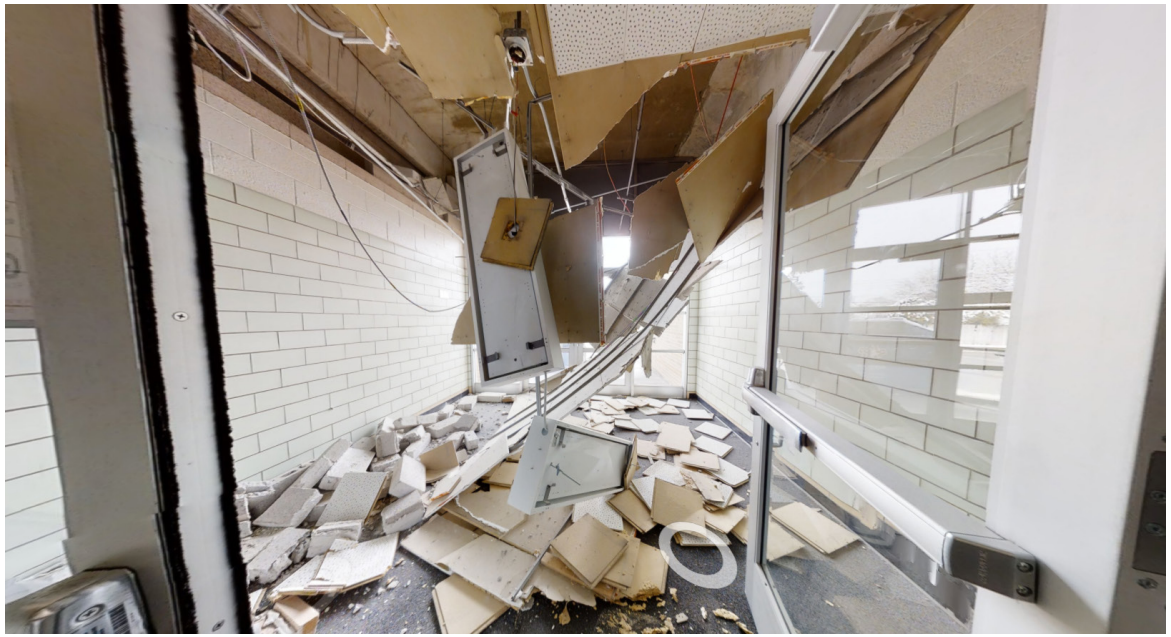
Image source: Deseret News

Unreinforced Masonry Schools

Long Beach, CA (1933)

Helena, MT (1935)

The Threat is (Still) Real



Salt Lake County, UT (2020)

Utah K-12 Public Schools
Unreinforced Masonry Inventory

What it includes:

- 20 of 29 counties have URM schools.
- There are 130 school campuses with URM buildings or additions.
- There are 76,000 children, or 13% of total K-12 public school enrollment, in these buildings.
- Includes “likely” under-reinforced buildings.
- Value of buildings is estimated to be $2 billion.
- Recommendations for reducing risk.

What it doesn’t include:

- Charter schools.
- The Church of Jesus Christ of Latter-day Saints seminary buildings.
- Private schools.
  - The initial scope did not include these buildings. This may be re-visited later.

Utah K-12 Public Schools
Unreinforced Masonry Inventory

Inventory methodology

- Used the *Rapid Visual Screening of Buildings for Potential Seismic Hazards: A Handbook* (FEMA P-154) and *Evaluating the Seismic Resistance of Existing Buildings* (ATC-14) as primary guidance.
- Used historic construction data, satellite images, and physical visits to develop the initial inventory.
- **This inventory needs to be validated for each school!**

Where to Find More Information

- Information will be posted on https://earthquakes.utah.gov/.
  - K-12 Public School URM Building Inventory.
  - Resources to learn more about URMs.
  - Resources for school officials and others to take action to reduce school risk.

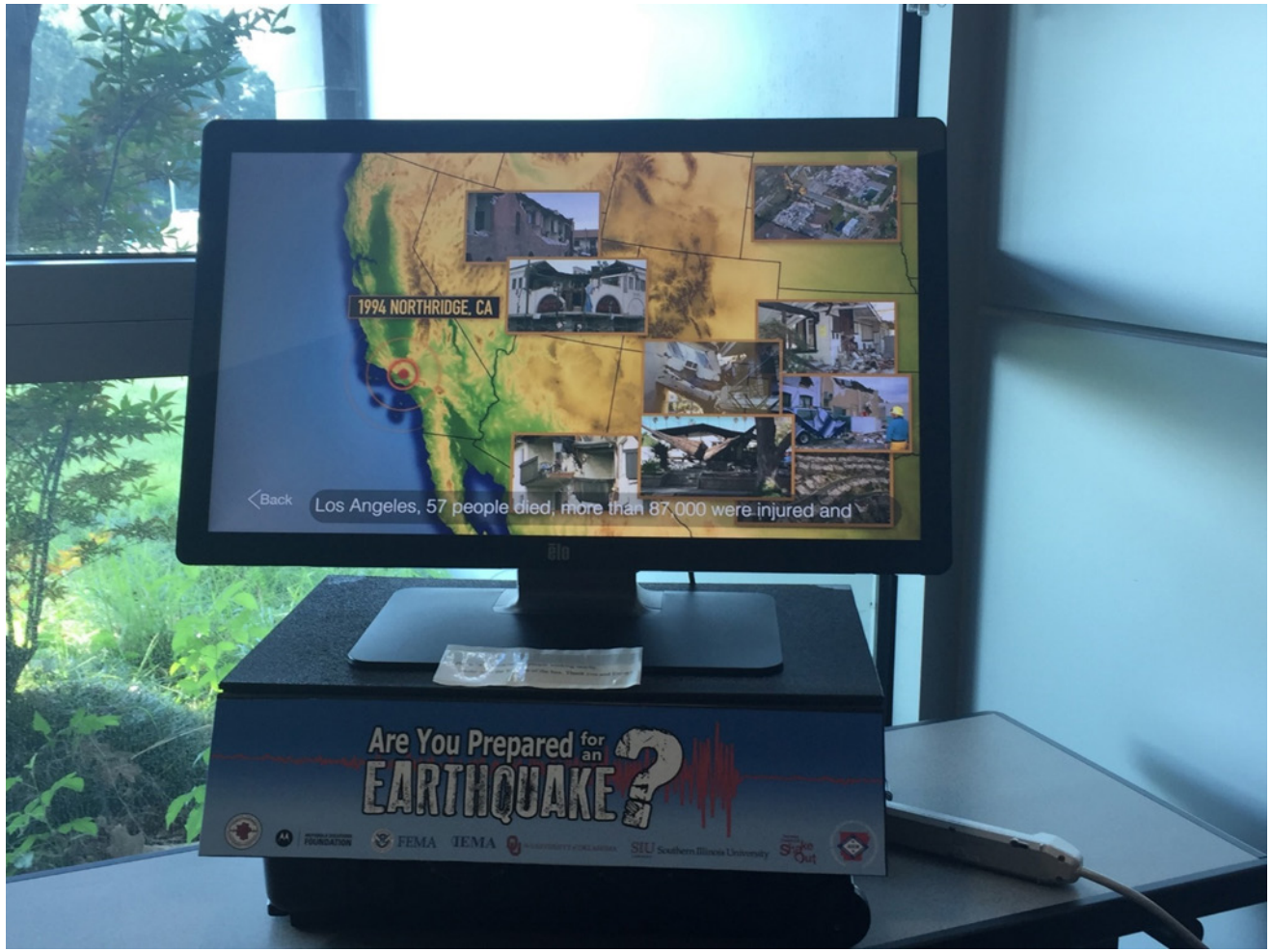
Submit Your Questions!

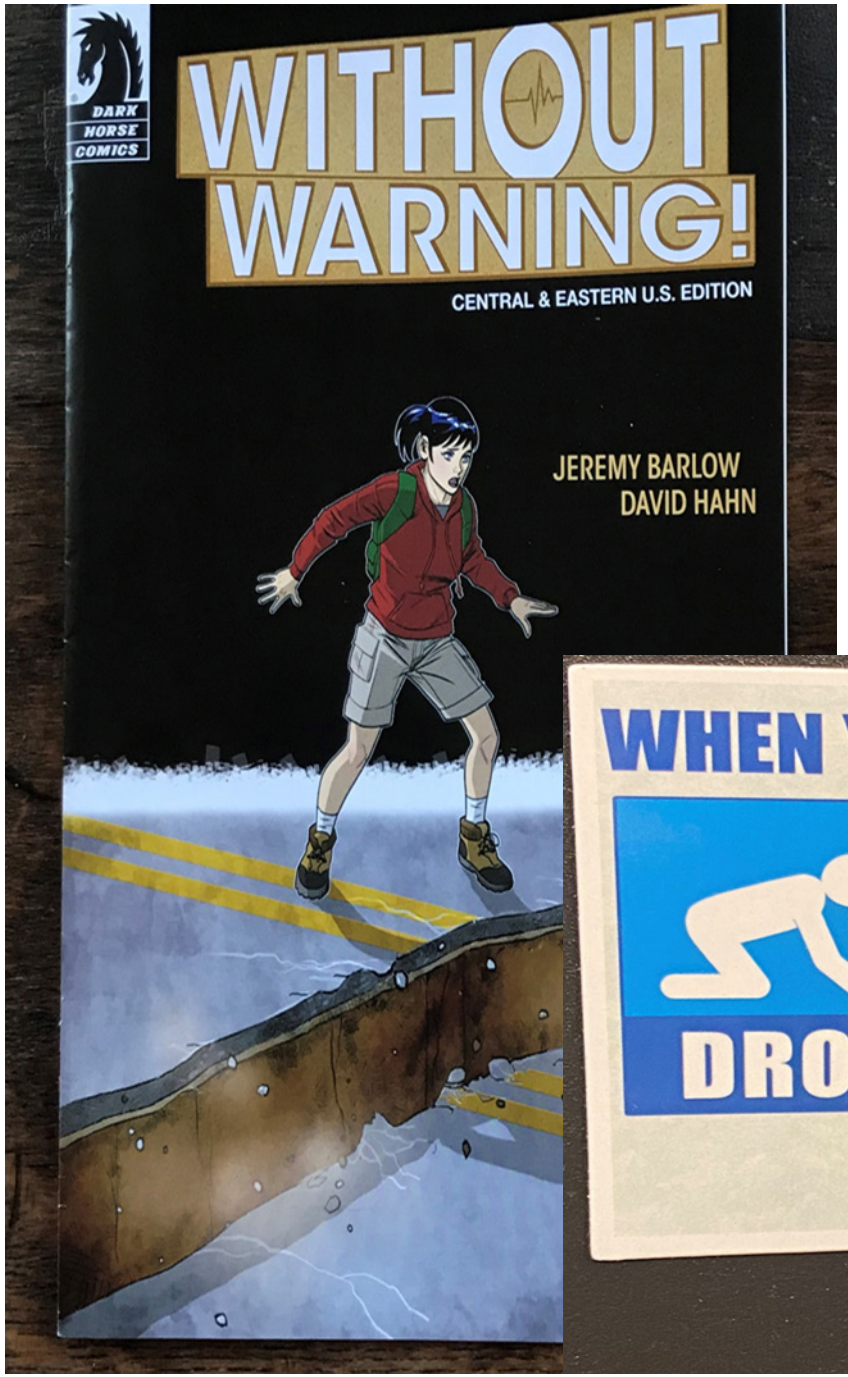
Use the Q&A window to submit your question.
Questions will be read aloud to the panelists.

Thank you!

John Crofts, MBA, CFM
Earthquake Program Manager
Utah Division of Emergency Management
jcrofts@utah.gov

ARKANSAS DIVISION OF EMERGENCY MANAGEMENT (ADEM)
2022 EARTHQUAKE MITIGATION PROJECT


1994 NORTHRIDGE, CA
Back
Los Angeles, 57 people died, more than 87,000 were injured and
Are You Prepared for an EARTHQUAKE?
FEMA
TEMA

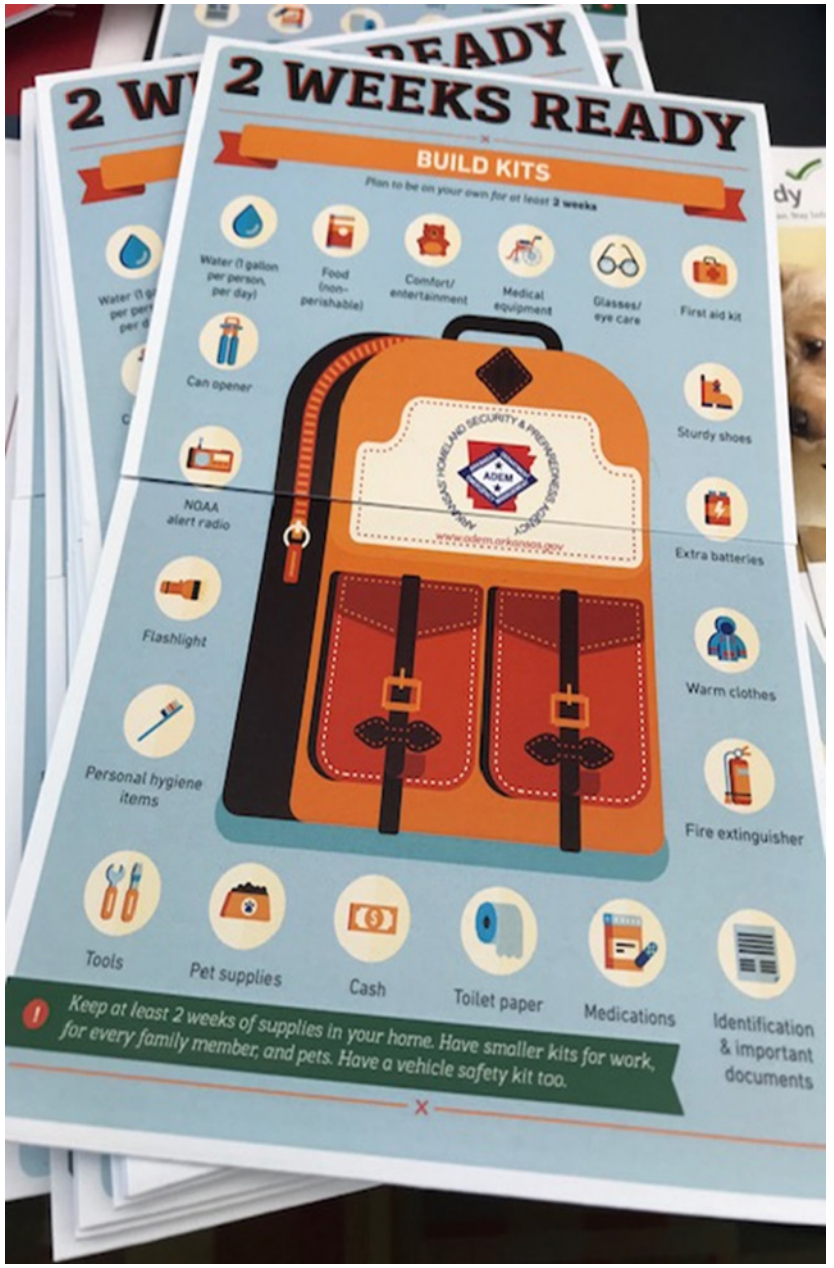

DARK HORSE COMICS
WITHOUT WARNING!
CENTRAL & EASTERN U.S. EDITION
JEREMY BARLOW
DAVID HAHN


WHEN YOU FEEL AN EARTHQUAKE...
DROP!
COVER!
HOLD ON!
For more information about earthquake safety:
www.shkeout.org


Shake Out. Don't Freak Out.
DROP!
COVER!
HOLD ON!
ShakeOut
Register at www.ShakeO

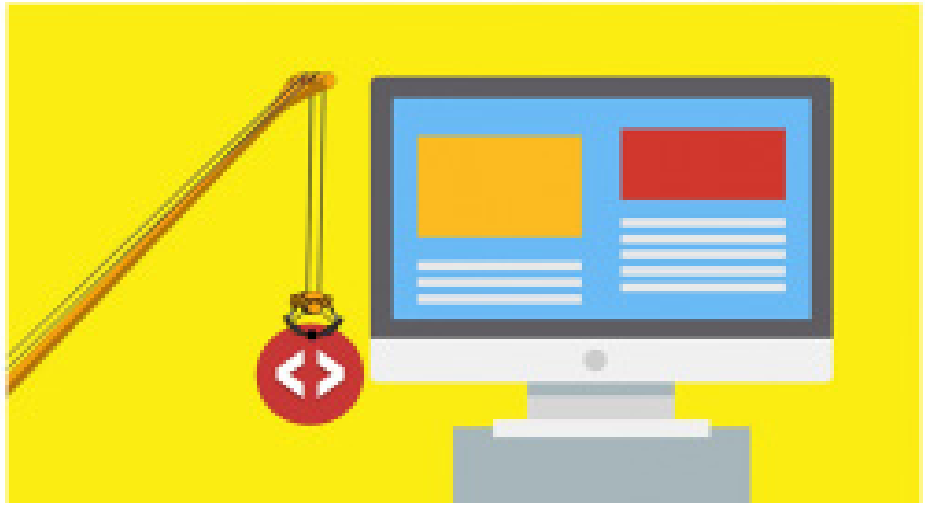

QUICKBELT™ 50F
Water Heater Restraints
Model # QB-50-F
• Soft Belt-Style Restraint
• Earthquake and Other Natural Disaster Restraint System
• Meets Plumbing Codes
• Complies with Real Estate Codes
• Rated up to 80 Gallons
• Self-drilling Lag Bolts
• Fully Adjustable from Front of Water Heater
ACCEPTABLE METHOD
No. 002-04
A RELIANCE WORLDWIDE CORPORATION BRAND


Emergency Go-Kit Passport
ARKANSAS' HOMELAND SECURITY & PREPAREDNESS AGENCY
ARKANSAS DEPARTMENT EMERGENCY MANAGEMENT
ADEM
Arkansas Department of Emergency Management
www.adem.arkansas.gov
(501) 683-6700


2 WEEKS READY
BUILD KITS
Plan to be on your own for at least 2 weeks
Water (1 gallon per person, per day)
Food (non-perishable)
Comfort/ entertainment
Medical equipment
Glasses/ eye care
First aid kit
Can opener
Sturdy shoes
NOAA alert radio
Extra batteries
Flashlight
Warm clothes
Personal hygiene items
Fire extinguisher
Tools
Pet supplies
Cash
Toilet paper
Medications
Identification & important documents
Keep at least 2 weeks of supplies in your home. Have smaller kits for work, for every family member, and pets. Have a vehicle safety kit too.


WEBSITE


PROD.
ROLL
SCENE
TAKE
DIRECTOR
CAMERA




ARKANSAS
DIVISION
ADEM
EMERGENCY
MANAGEMENT

Mix 106.3
The Adult Hit Music Station

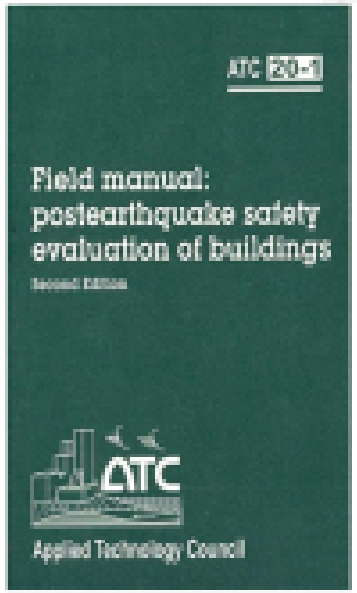
HOT 107.5
THE PARTY STATION

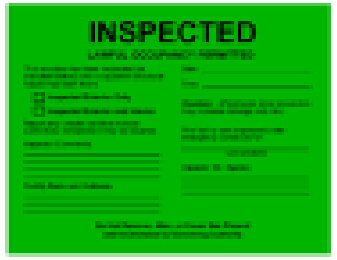
Y-107
MY COUNTRY

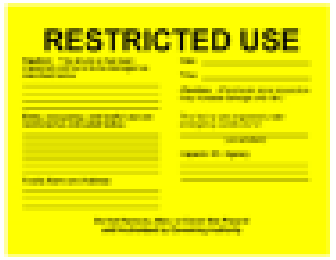
INSPECT ARKANSAS VOLUNTEER

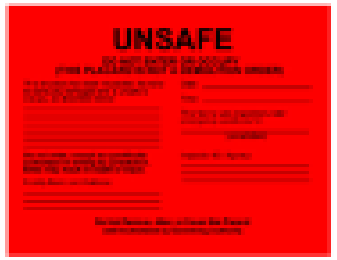
iNSPARK
inspecting after the unexpected

5+ ATC-20 & CAL OES TRAININGS PER YEAR





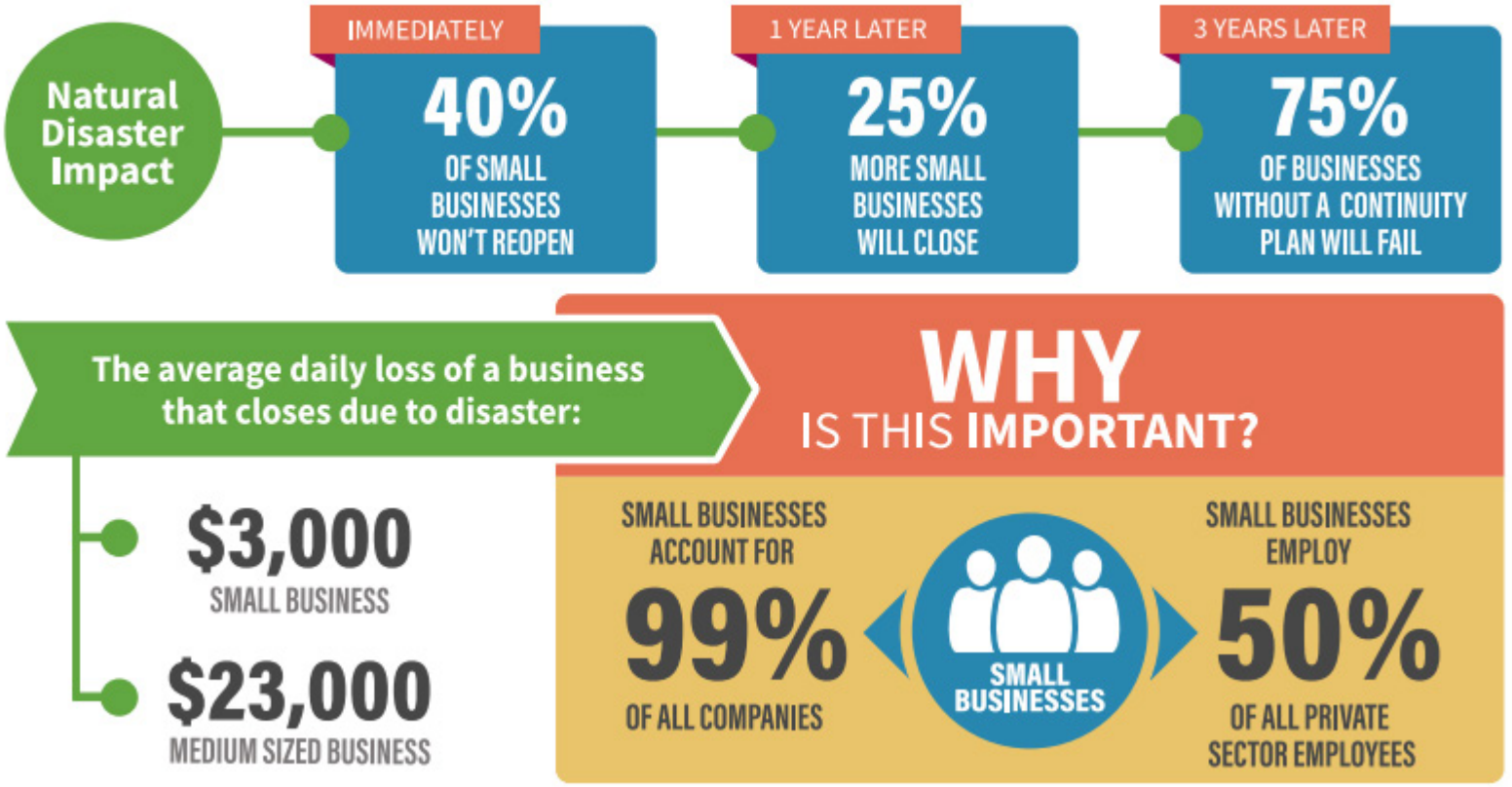




2nd largest building inspection team
In the Midwest

VOLUNTEER ORGANIZATION
SUPPORTS ADEM
POST DISASTER BUILDING ASSESSMENT PROGRAM

July 14, 2022
AGS/ADEM
Energy & the Environment



July 15, 2022
Arkansas Geological Survey
Energy & the Environment
Little Rock, AR

Hilda Booth
Arkansas Division of Emergency Management
Building 9501 Camp Joseph T. Robinson
North Little Rock, AR 72199
Hilda.booth@adem.Arkansas.gov
501-319-5036

IDAHO SEISMIC UPDATE

2022 National Earthquake Program Managers Meeting

SEISMIC RISK

Centennial Seismic Zone – central ID east-west

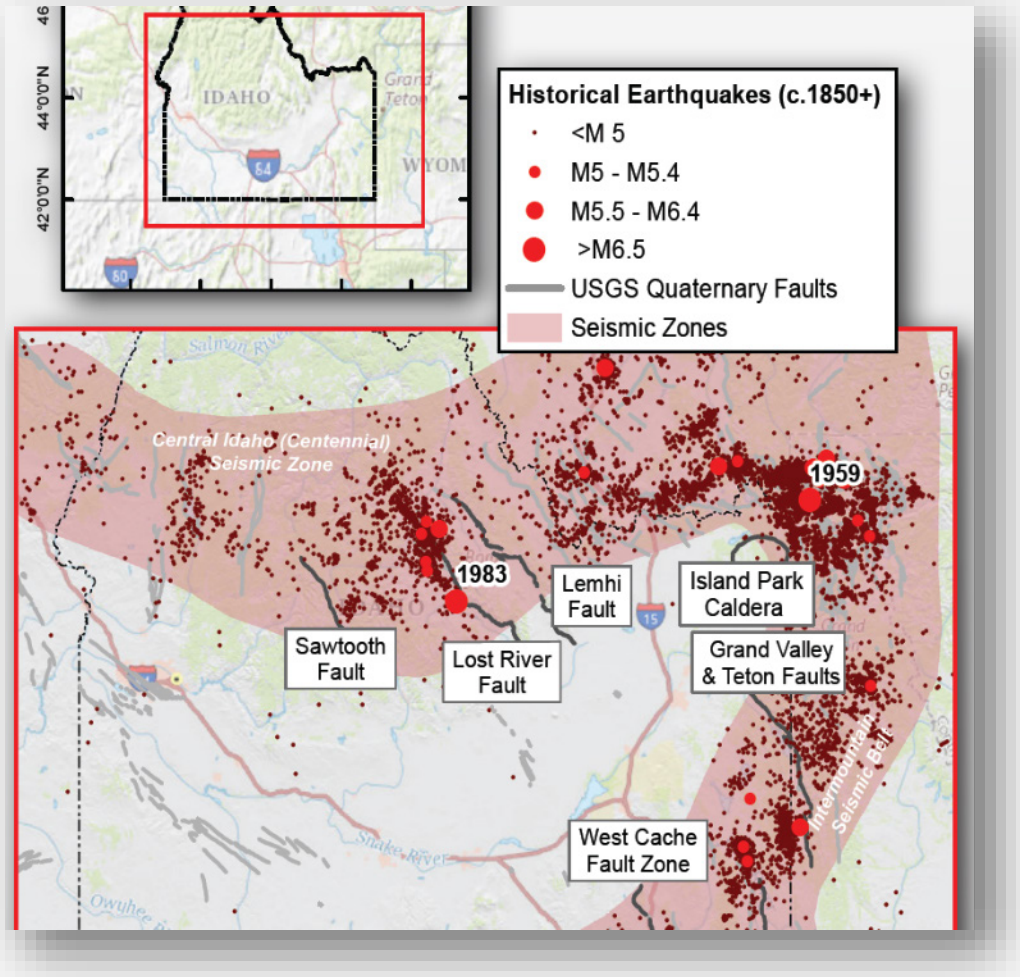
- Sawtooth, Lost River, Trans-Challis, Lemhi faults
- M6.9 Challis 1983 on Lost River Fault
- M6.5 Stanley 2020

Intermountain Seismic Belt – E ID north-south

- Eastern Bear Lake, Wasatch, West Cache,
- Grand Valley, Teton faults
- M6.0 Paris/Bear Lake Valley 1884
- M6.6 Hansel Valley, UT
- Soda Spring Swarms

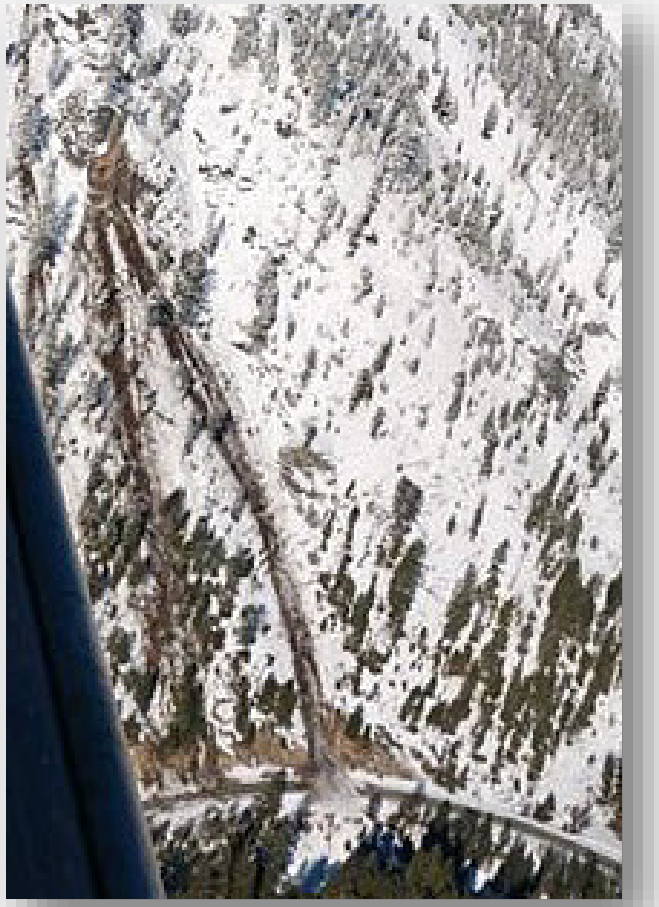
Yellowstone

- M7.2 Hebgen Lake 1959



LANDSLIDES AND LIQUEFACTION

- Slides temporarily blocked flow on Middle Fork of the Salmon River
- Several slides impacted river west of Stanley, ID
- Twin Falls County had a small landslide at river
- Red Fish Lake had slides and liquefaction
  https://www.idahostatesman.com/news/local/environment/article243943677.html
- Landslides, rockfall on Highways 21 and 75



Picture from ITD Division of Aeronautics

AVALANCHES

- Sawtooth Avalanche Center - Apr 1, 2020 Avalanches and rockfall at the head of Crooked Creek in the northern Sawtooths likely released as a result of the March 31, 2020 earthquake
- ITD clears HWY 21

PROJECTS

Regional Seismic Awareness Workshops

Regional Earthquake Clearinghouse Plan

City of Hailey Fire Station Retrofit

Hailey retrofit HMGP project

QUESTIONS?

- Susan Cleverley
- Mitigation Section Chief
- 208-258-6545
- 208-559-8478 (cell)
- scleverley@imd.Idaho.gov

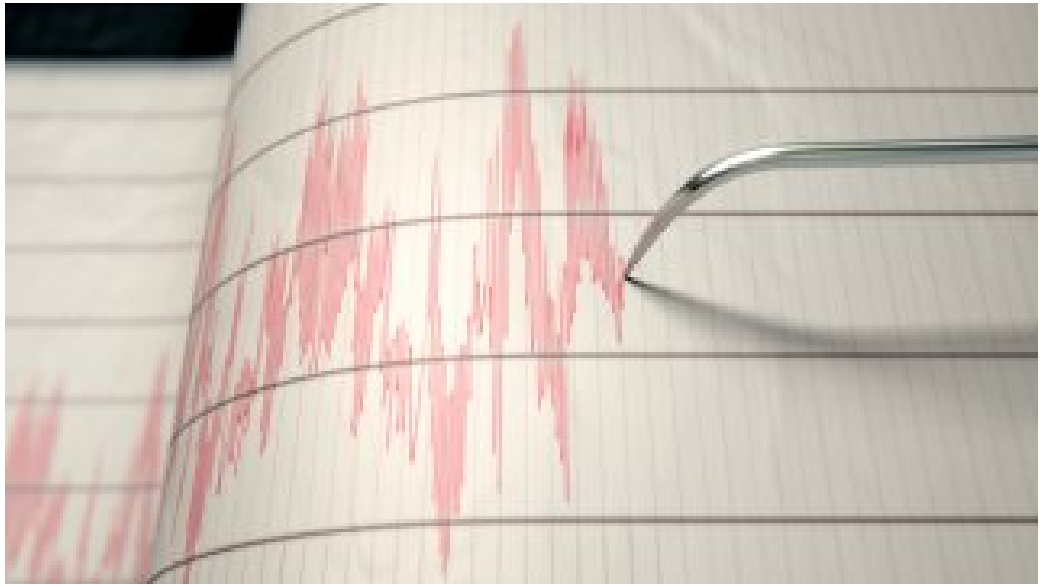
- Traci Stewart
- Mitigation Program Assistant
- 208-258-6581

Lorrie Pahl
Mitigation Planner
208-258-6508
208-901-2461 (cell)
lpahl@imd.Idaho.gov

Mary Mott
Mitigation Program Assistant
208-258-6521

Illinois

Earthquake Program Presentation



Scott C. Gauvin
Manager, Strategic Operations and Preparedness
Illinois Emergency Management Agency

Steady State

- The earthquake program and plan reside in Illinois in the Illinois Inter-Agency Strategic Planning Cell (ISPC). The ISPC manages:
  - The promotion of earthquake awareness with our IEMA PIO
  - Promotion of the Shakeout
  - Coordination with CUSEC and state partners
  - Development of state capability for post disaster inspections
  - Planning product develop
  - And earthquake strategic and operational planning templates for local jurisdictions

Moving Forward

- Recently established a new working group of state and federal stakeholders to:
  - Review existing state and federal plans
  - Devise a coordinated timeline to develop a new comprehensive operational earthquake response plan
  - Incorporate lessons learned and concepts derived from other CUSEC States via the upcoming **CUSEC Regional Resiliency Planning Workshop in May 2022.**

Upcoming Events

- CUSEC Regional Resiliency Planning Workshop (May 10-11, 2022) Springfield, Illinois
  - 8 CUSEC State Earthquake Program Mangers, Planners, Geologists, PIO's and others
  - Reviewing current status of all state plans
  - Establishing coordination channels between states and disciplines for planning and operations
  - Re-engaging CUSEC working groups
  - Facilitating effort on CUSEC Multi-State Coordination Annex Concepts

Scott C. Gauvin

Manager of Strategic Operations and Preparedness
Illinois Emergency Management Agency (IEMA)
scott.gauvin@Illinois.gov
217-557-4893 (office)
217-685-3708 (cell)

Missouri's Earthquake Program

Missouri State Emergency Management Agency

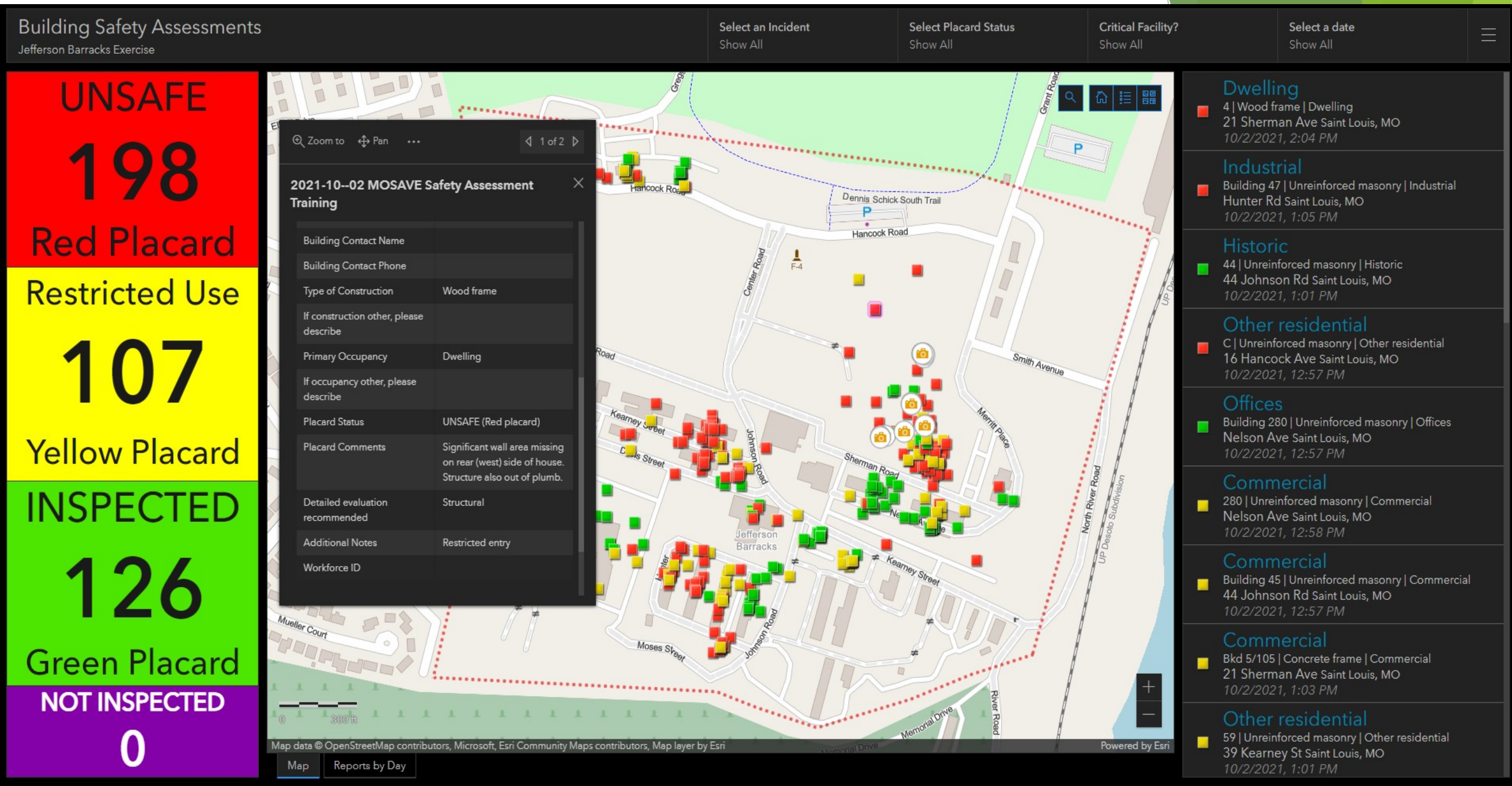
Jeff Briggs, Earthquake Program Manager

“During a disaster is the worst time to be passing out business cards.”

Some guy at the Missouri Earthquake Summit, March 2022

SAVE Coalition Deployment Exercise

- Simulated Memphis TN earthquake
- 100 volunteers
- Partnerships with National Guard, Civil Air Patrol, CUSEC, surrounding states


Building Safety Assessments
Jefferson Barracks Exercise
Select an Incident
Show All
Select Placard Status
Show All
Critical Facility?
Show All
Select a date
Show All
UNSAFE
198
Red Placard
Restricted Use
107
Yellow Placard
INSPECTED
126
Green Placard
NOT INSPECTED
0
Zoom to
Pan
1 of 2
2021-10--02 MOSAVE Safety Assessment Training
Building Contact Name
Building Contact Phone
Type of Construction
Wood frame
If construction other, please describe
Primary Occupancy
Dwelling
If occupancy other, please describe
Placard Status
UNSAFE (Red placard)
Placard Comments
Significant wall area missing on rear (west) side of house. Structure also out of plumb.
Detailed evaluation recommended
Structural
Additional Notes
Restricted entry
Workforce ID
Hancock Road
Dennis Schick South Trail
Center Road
Smith Avenue
Kearney Street
Johnson Road
Sherman Road
Merritt Place
North River Road
UP Desoto Subdivision
Jefferson Barracks
Mueller Court
Moses Street
Memorial Drive
River Road
Grant Road
Map data © OpenStreetMap contributors, Microsoft, Esri Community Maps contributors, Map layer by Esri
Powered by Esri
Map
Reports by Day
Dwelling
4 | Wood frame | Dwelling
21 Sherman Ave Saint Louis, MO
10/2/2021, 2:04 PM
Industrial
Building 47 | Unreinforced masonry | Industrial
Hunter Rd Saint Louis, MO
10/2/2021, 1:05 PM
Historic
44 | Unreinforced masonry | Historic
44 Johnson Rd Saint Louis, MO
10/2/2021, 1:01 PM
Other residential
C | Unreinforced masonry | Other residential
16 Hancock Ave Saint Louis, MO
10/2/2021, 12:57 PM
Offices
Building 280 | Unreinforced masonry | Offices
Nelson Ave Saint Louis, MO
10/2/2021, 12:57 PM
Commercial
280 | Unreinforced masonry | Commercial
Nelson Ave Saint Louis, MO
10/2/2021, 12:58 PM
Commercial
Building 45 | Unreinforced masonry | Commercial
44 Johnson Rd Saint Louis, MO
10/2/2021, 12:57 PM
Commercial
Bkd 5/105 | Concrete frame | Commercial
21 Sherman Ave Saint Louis, MO
10/2/2021, 1:03 PM
Other residential
59 | Unreinforced masonry | Other residential
39 Kearney St Saint Louis, MO
10/2/2021, 1:01 PM

Annual Earthquake Summit

- Hundreds of local officials attend each year
- National and regional speakers
- Planning committee, sponsoring organizations
- Networking, comparing resources

Earthquake Insurance Symposium

- Dire situation in MO – only 12% of homeowners have it
- Bringing together FEMA, SEMA, Depts. of Insurance, private sector
- Looking for innovative solutions – no current mechanism will solve this!
- Just a starting point – annual event, other states

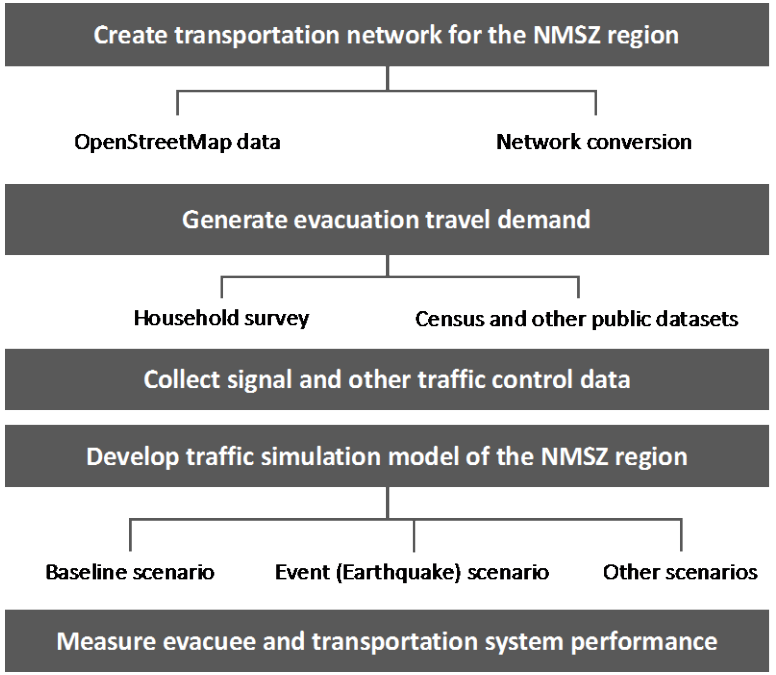
Today's a partnership too!

- Working with colleagues around the country
- Stealing ideas
- Expertise and resources when I need them
- Thank you for sharing with me!

Earthquake Evacuation Modeling of New Madrid Region

Project Objectives

- Assess evacuation performance using simulation models
- Identify potential bottlenecks in the road network
- Estimate delays on major evacuation routes



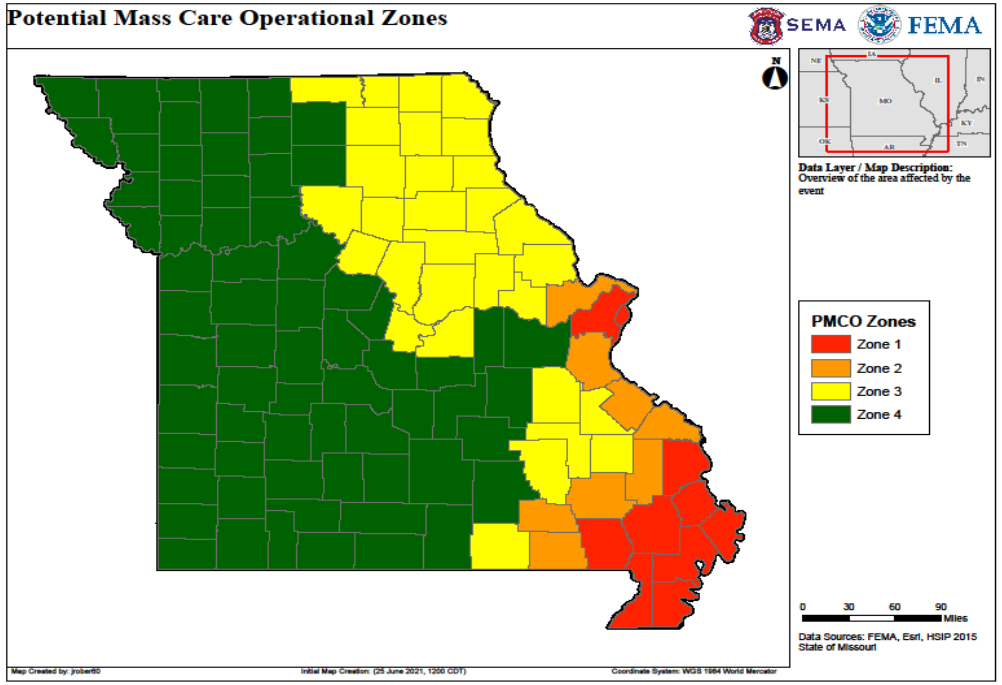
Project Tasks

- Task 1: Historic Data Analysis
- Task 2: First Responders Survey Instrument
- Task 3: Deep learning algorithms for Emergency Preparedness and Response
- Task 4: Assessing evacuation performance using simulation models
- Task 5: APP development
- Task 6: Final Report

Study Area

- Zone 1 of potential mass care operational zones

- Includes eight counties
  - Cape Girardeau
  - Scott
  - Mississippi
  - Stoddard
  - Butler
  - New Madrid
  - Dunklin
  - Pemiscot



(Source: NMSZ Evacuation-MASS Care Initiative Overview, 2021)

Household Survey

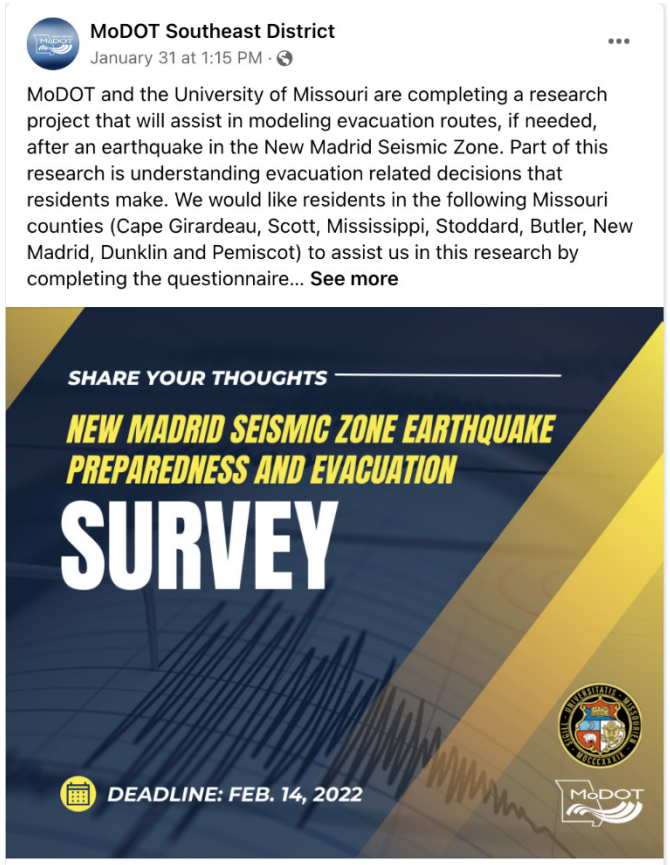
Household Survey

Purpose

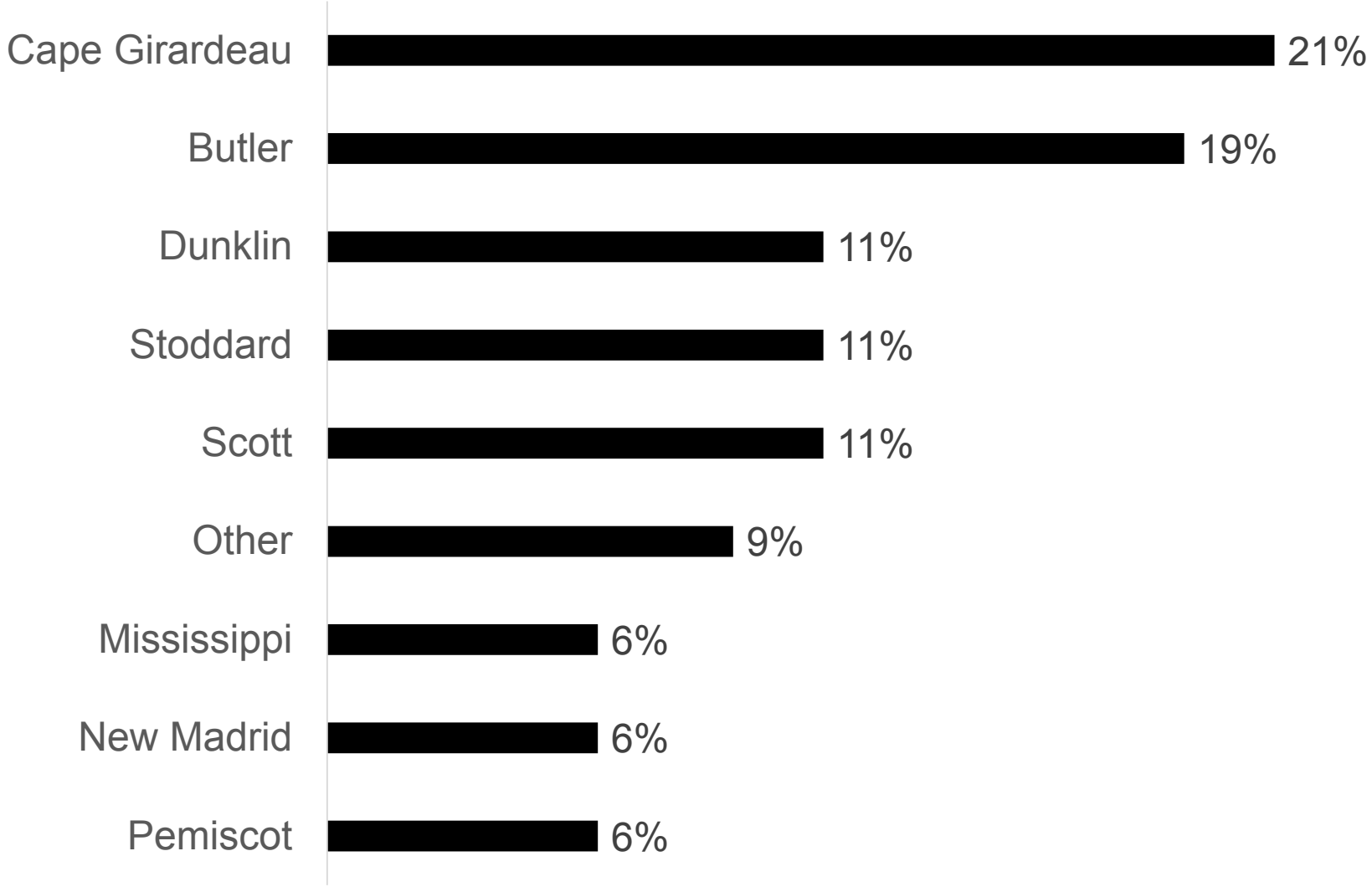
- To obtain evacuation-related decisions
  - stay/evacuate
  - destination choice
  - route choice
- Demand generation models will be estimated using survey responses

Survey Administration

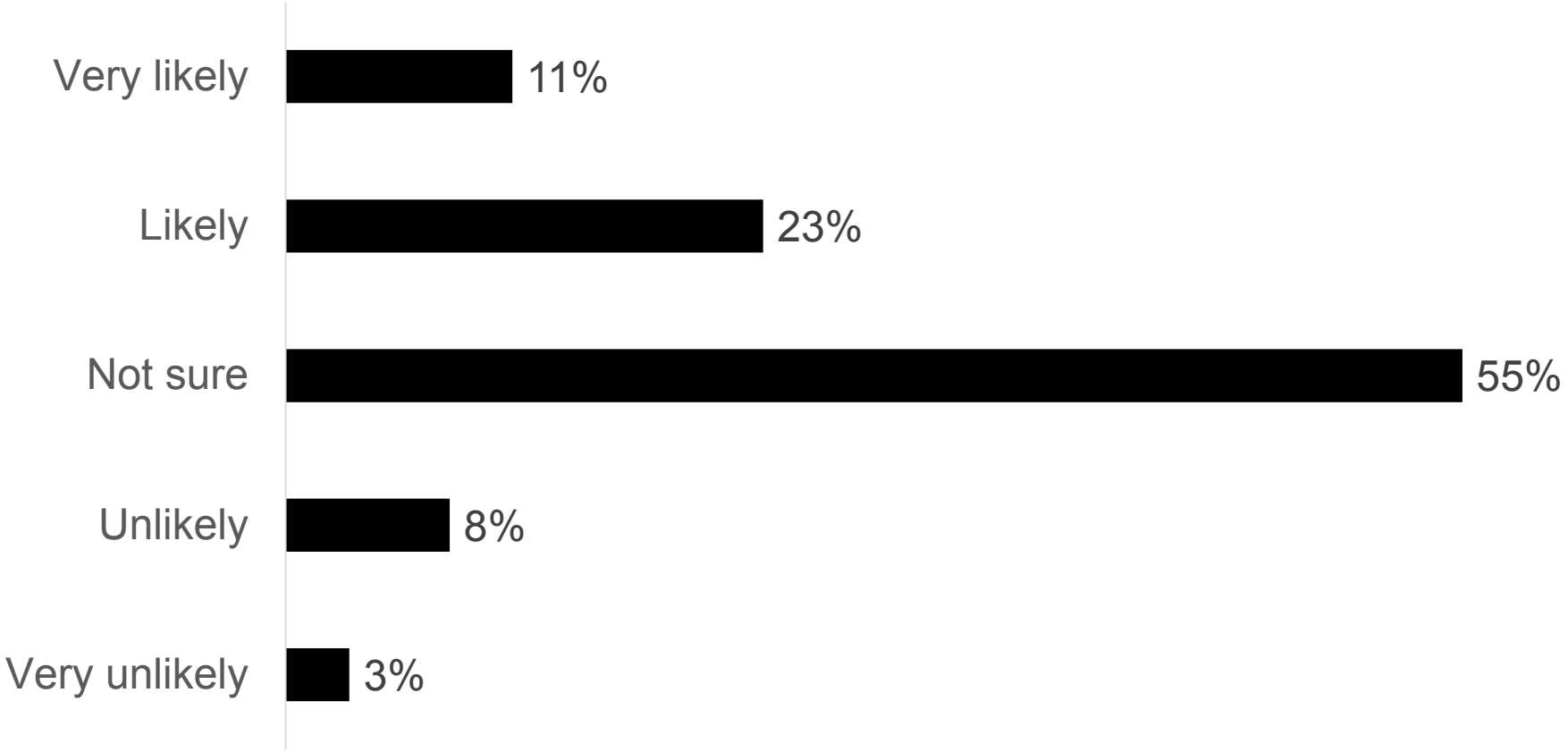
- Online survey was open from January 28 to February 21
- 891 responses received



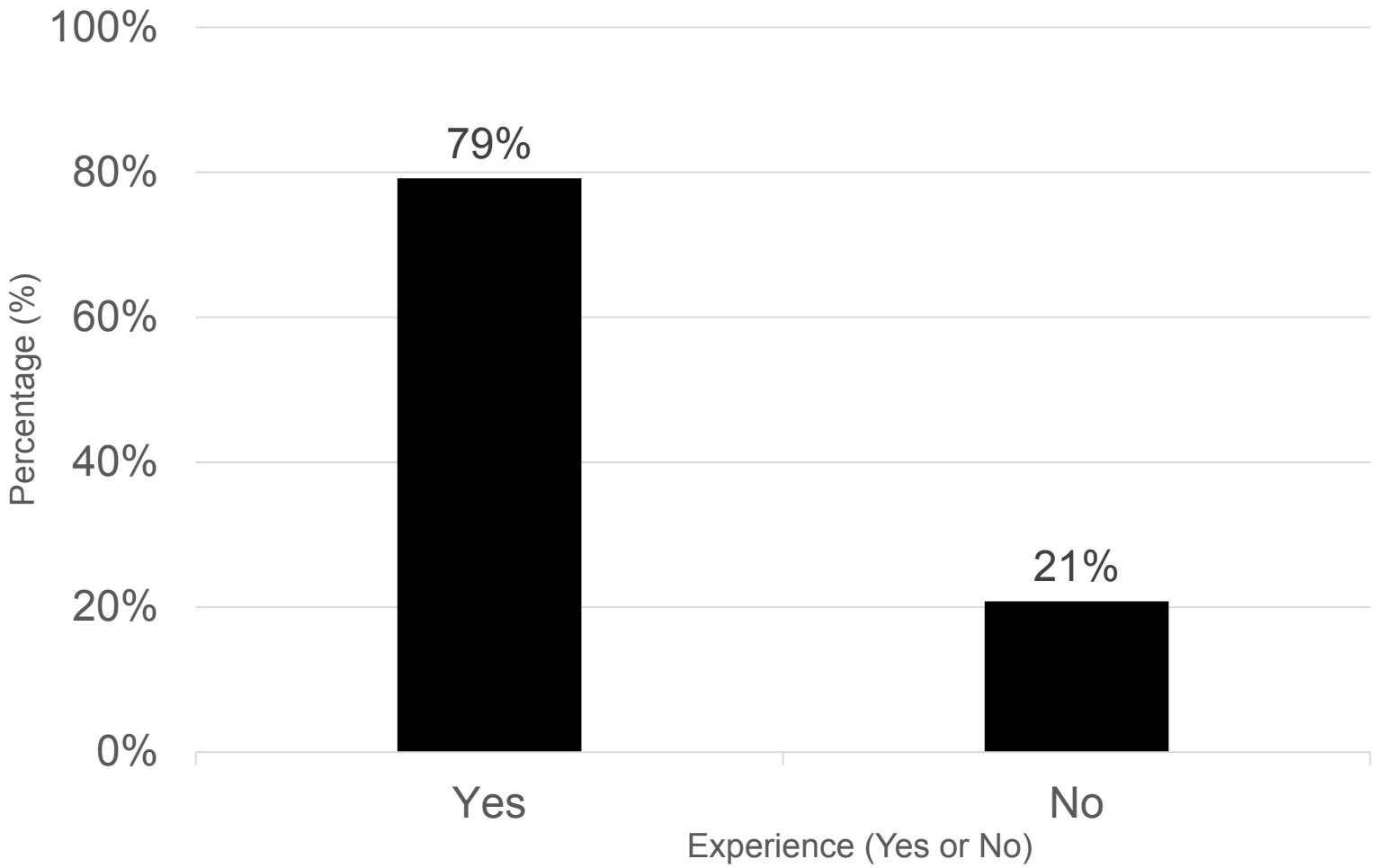
Q1. Select the county you live in (N= 891)



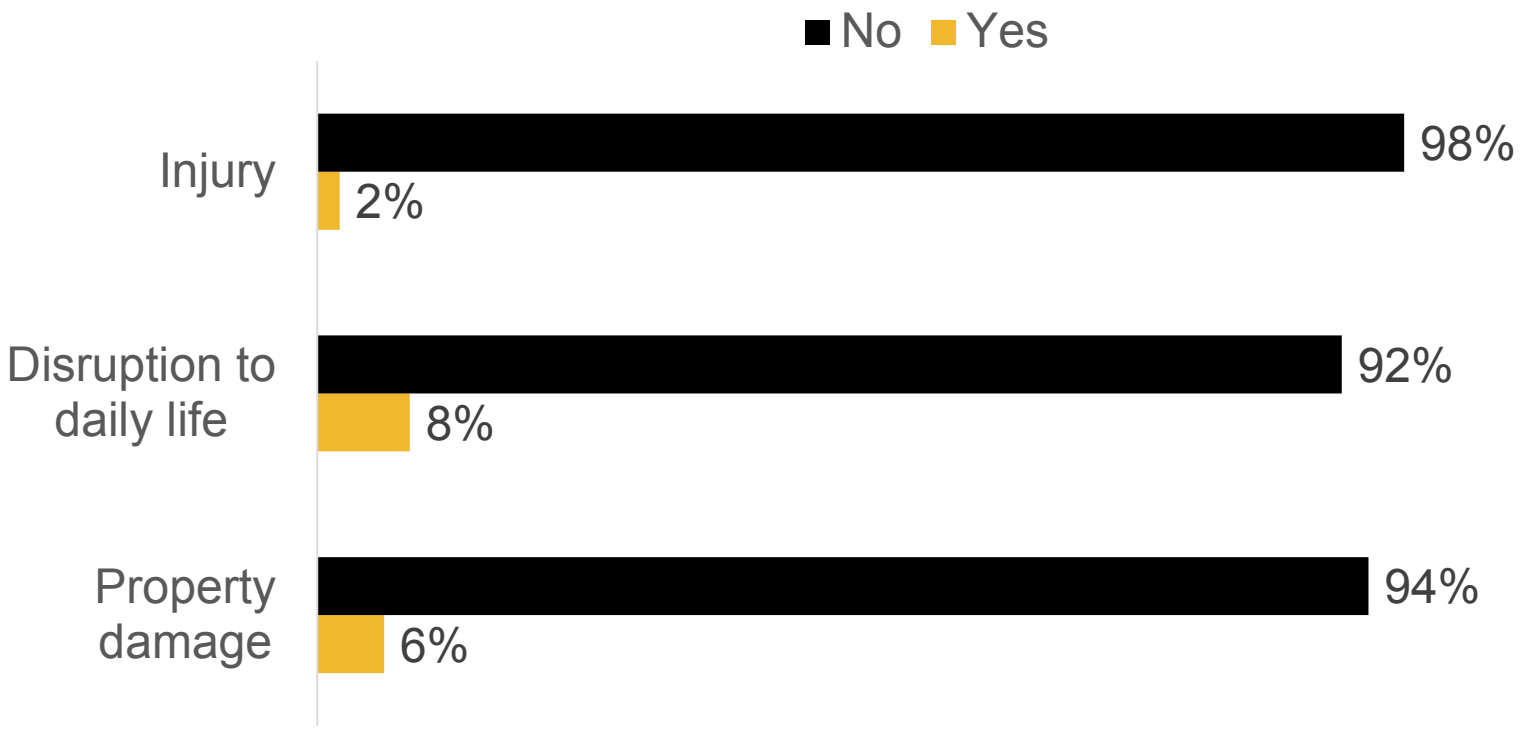
Q2. How likely is that you and your family will be impacted by an earthquake in the next five years? (N= 880)



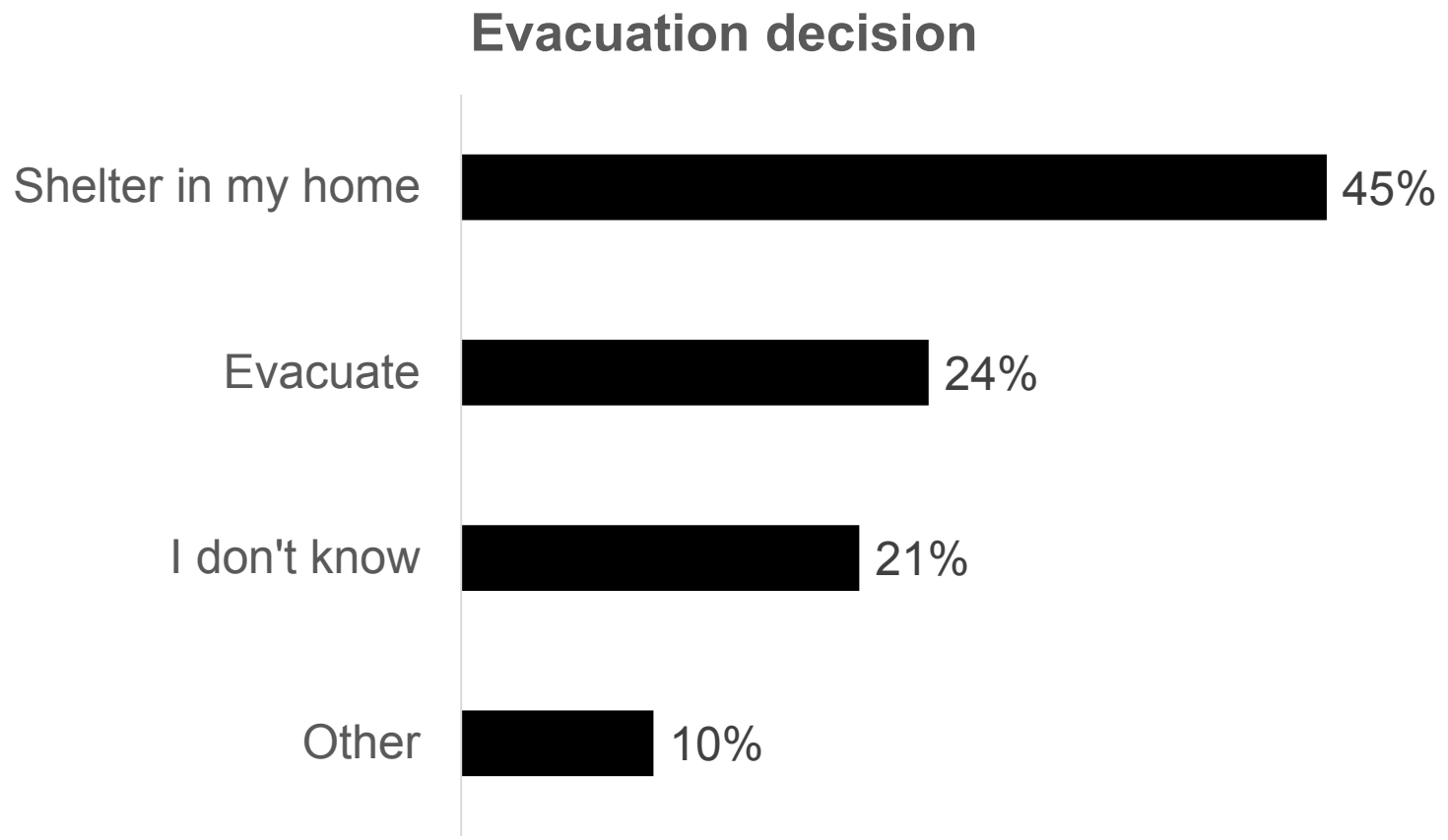
Q3. Have you ever experienced an earthquake? (N= 879)



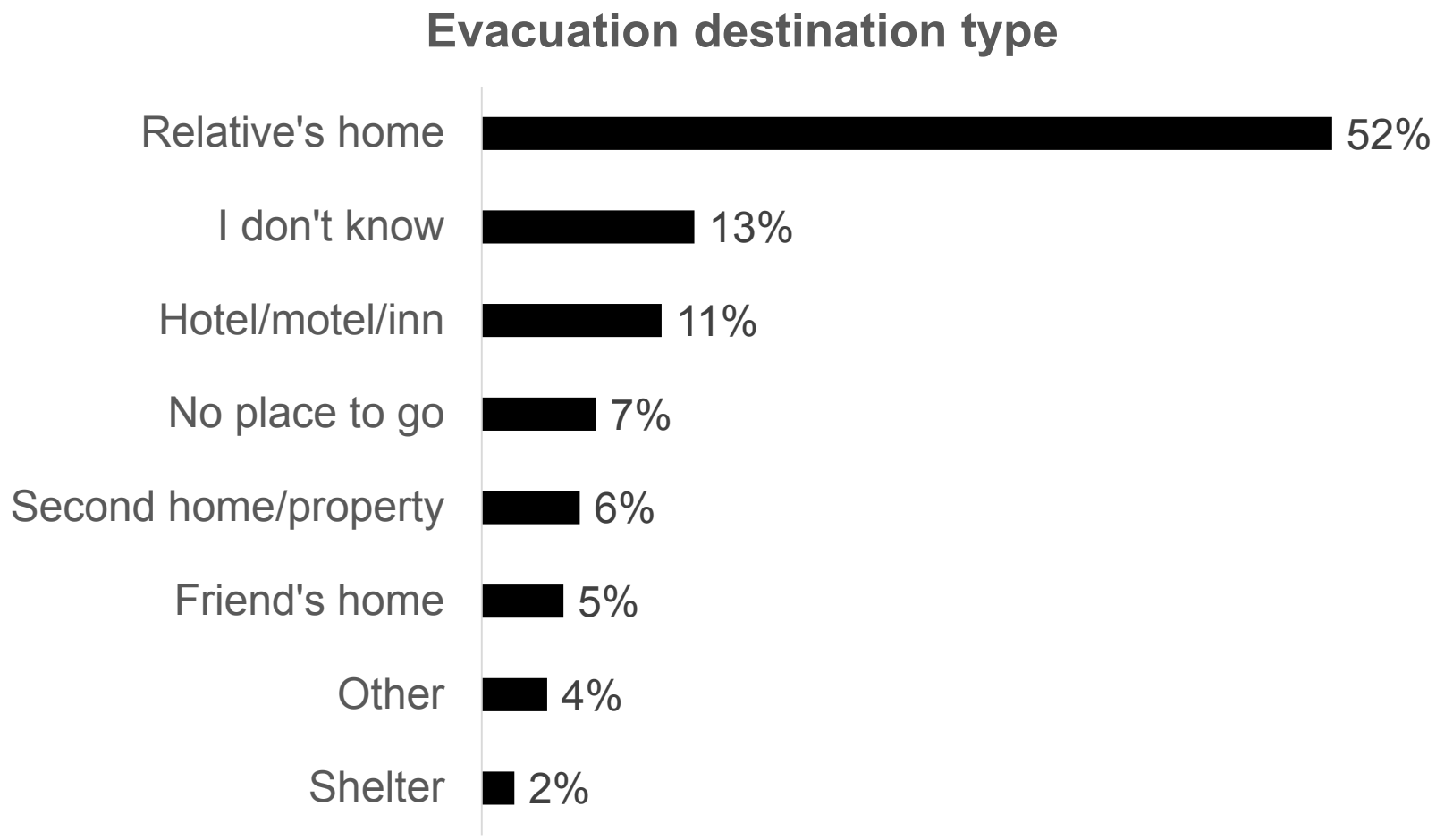
Q4. If you have experienced an earthquake before, did you have any of the following happen to you? (N= 790)



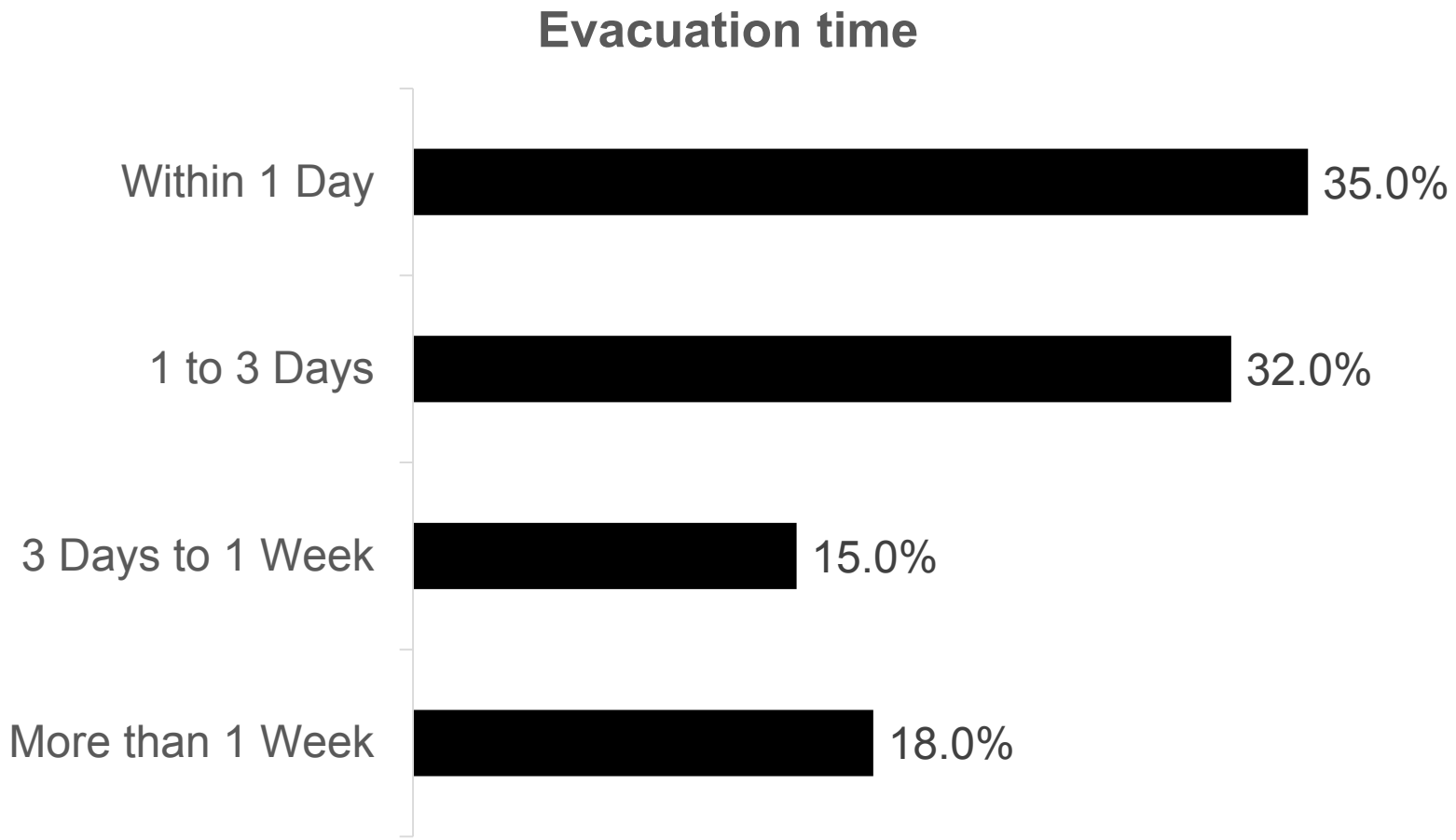
Q5. If an earthquake was going to impact your neighborhood, what would you be most likely to do? (N= 880)



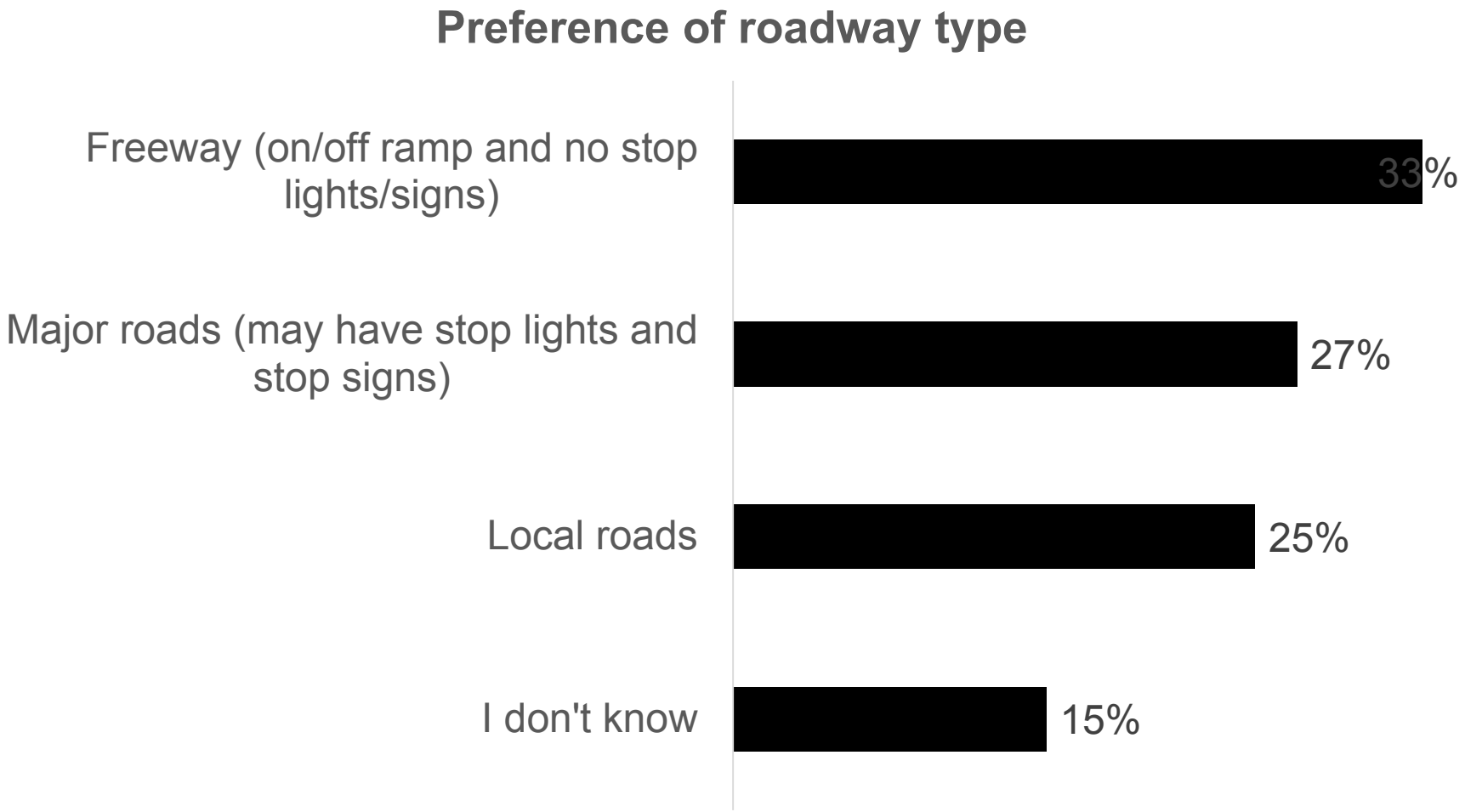
Q6. What kind of place would you go to? (N= 655)



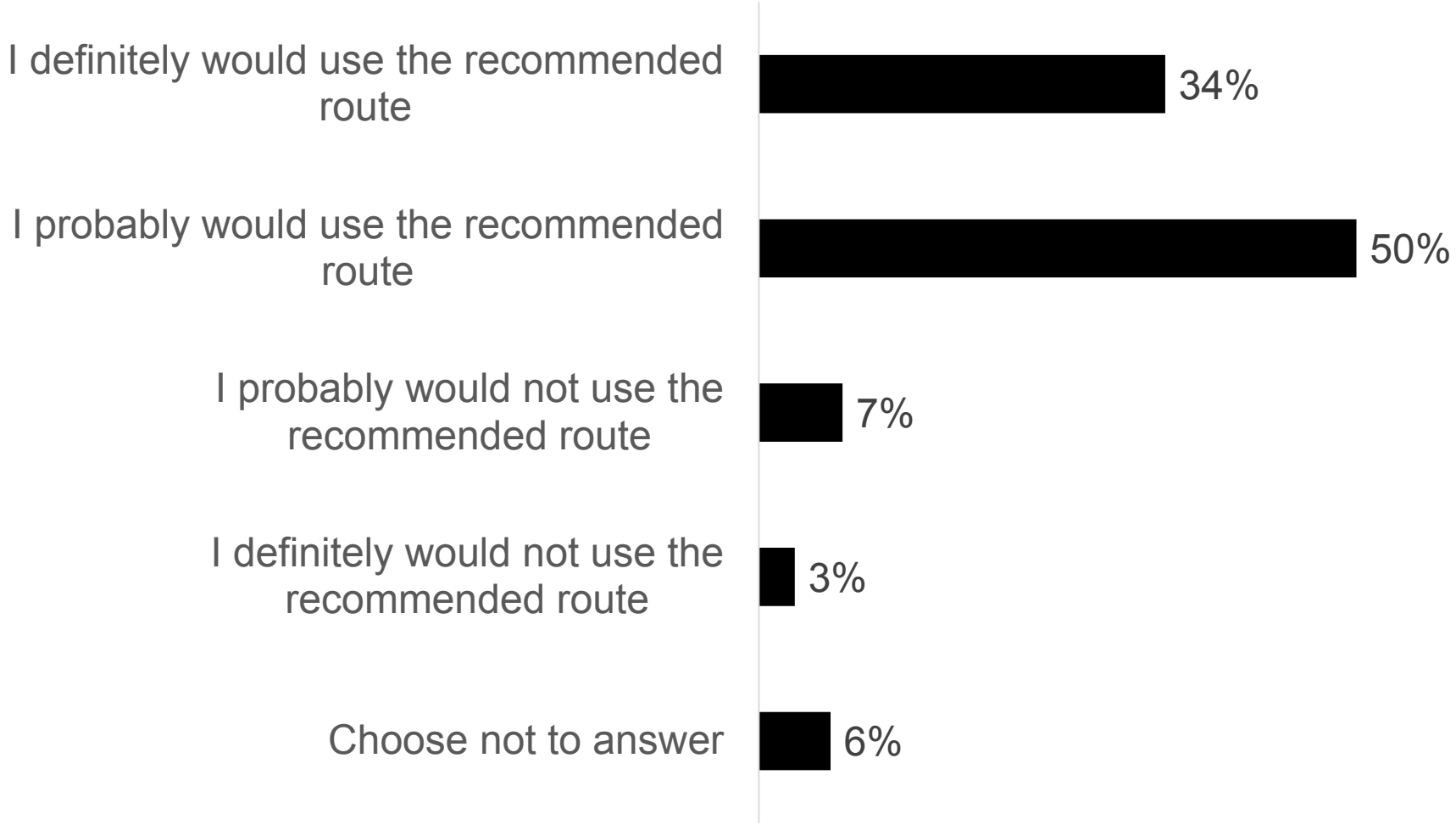
Q7. When do you think you would be most likely to leave to your destination after an earthquake? (N= 636)



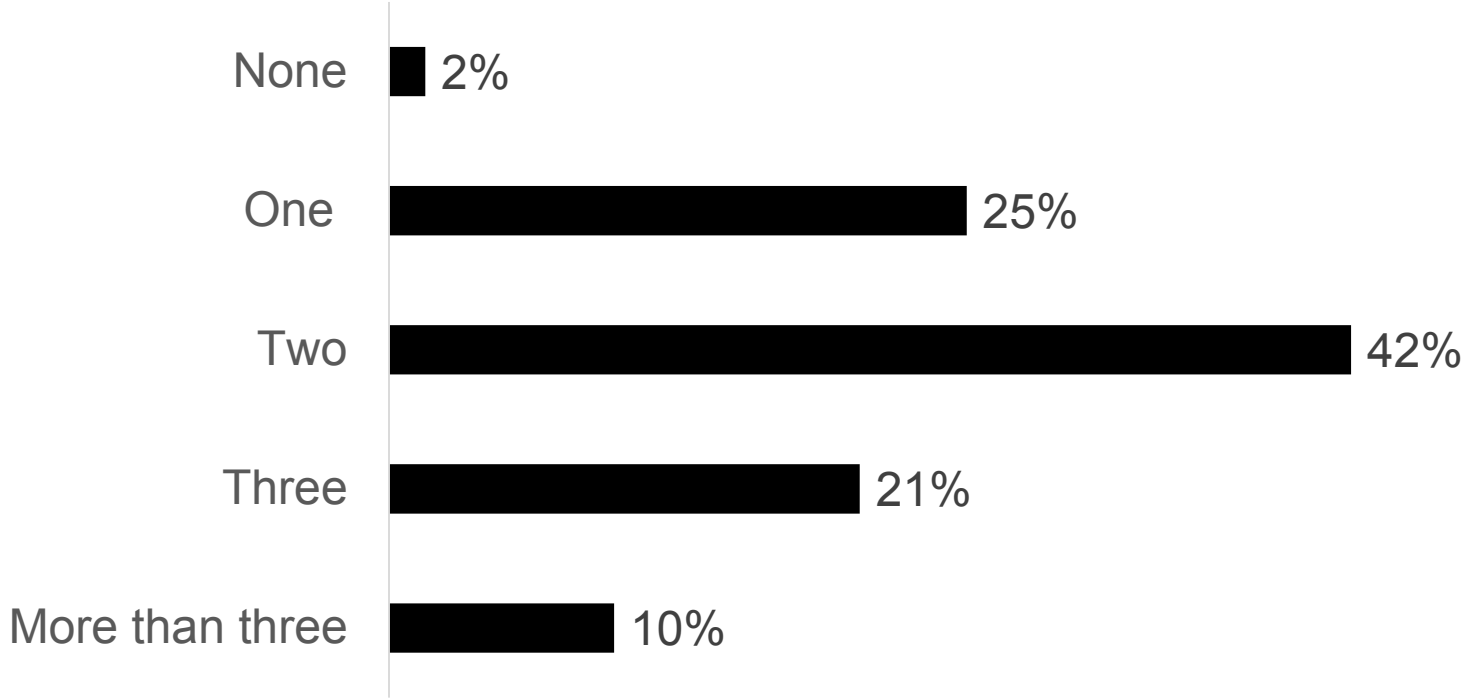
Q8. Which type of road would you mostly travel on? (N= 647)



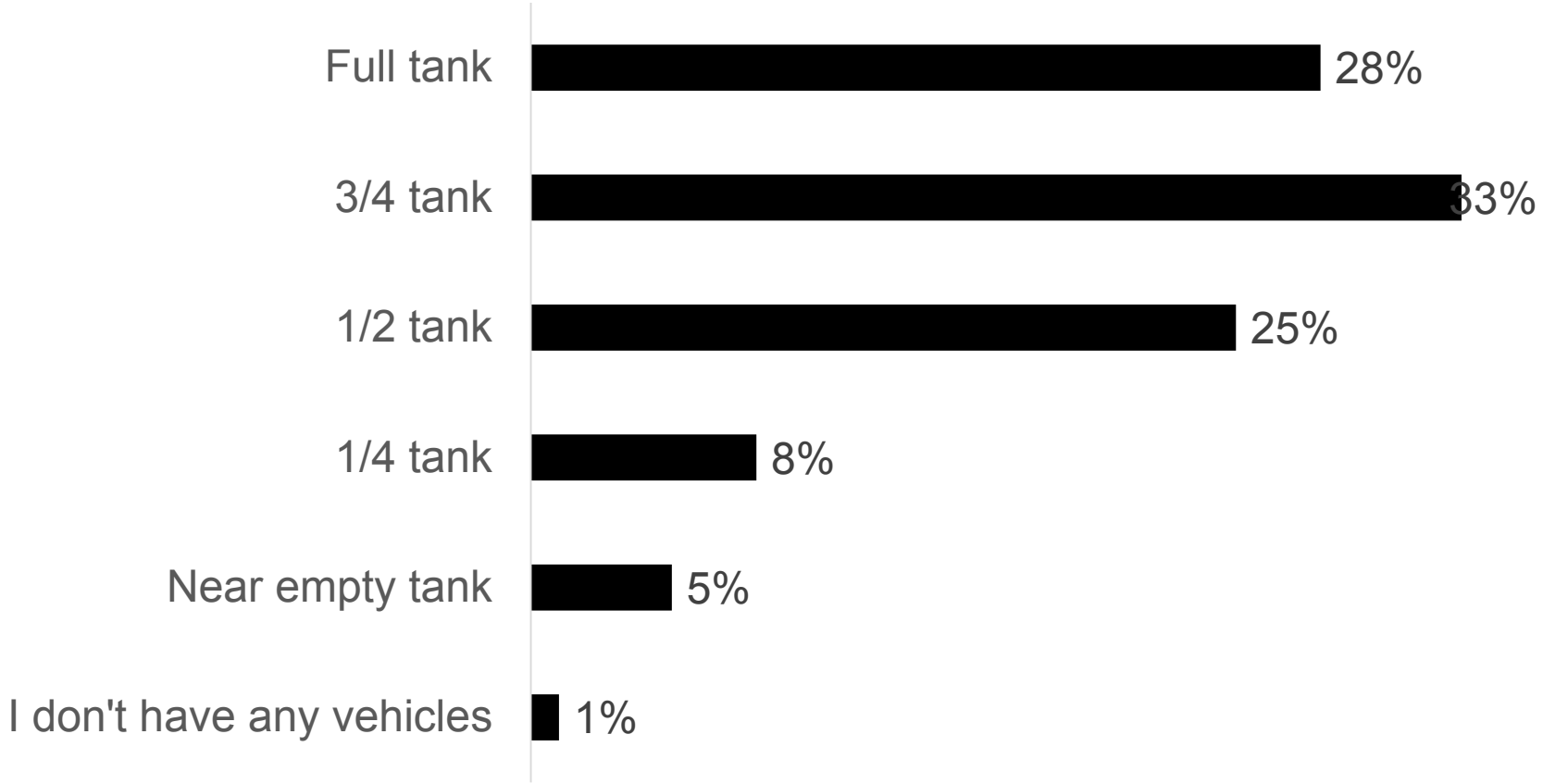
Q9. If officials recommend using a particular evacuation route, would you use that route? (N= 649)



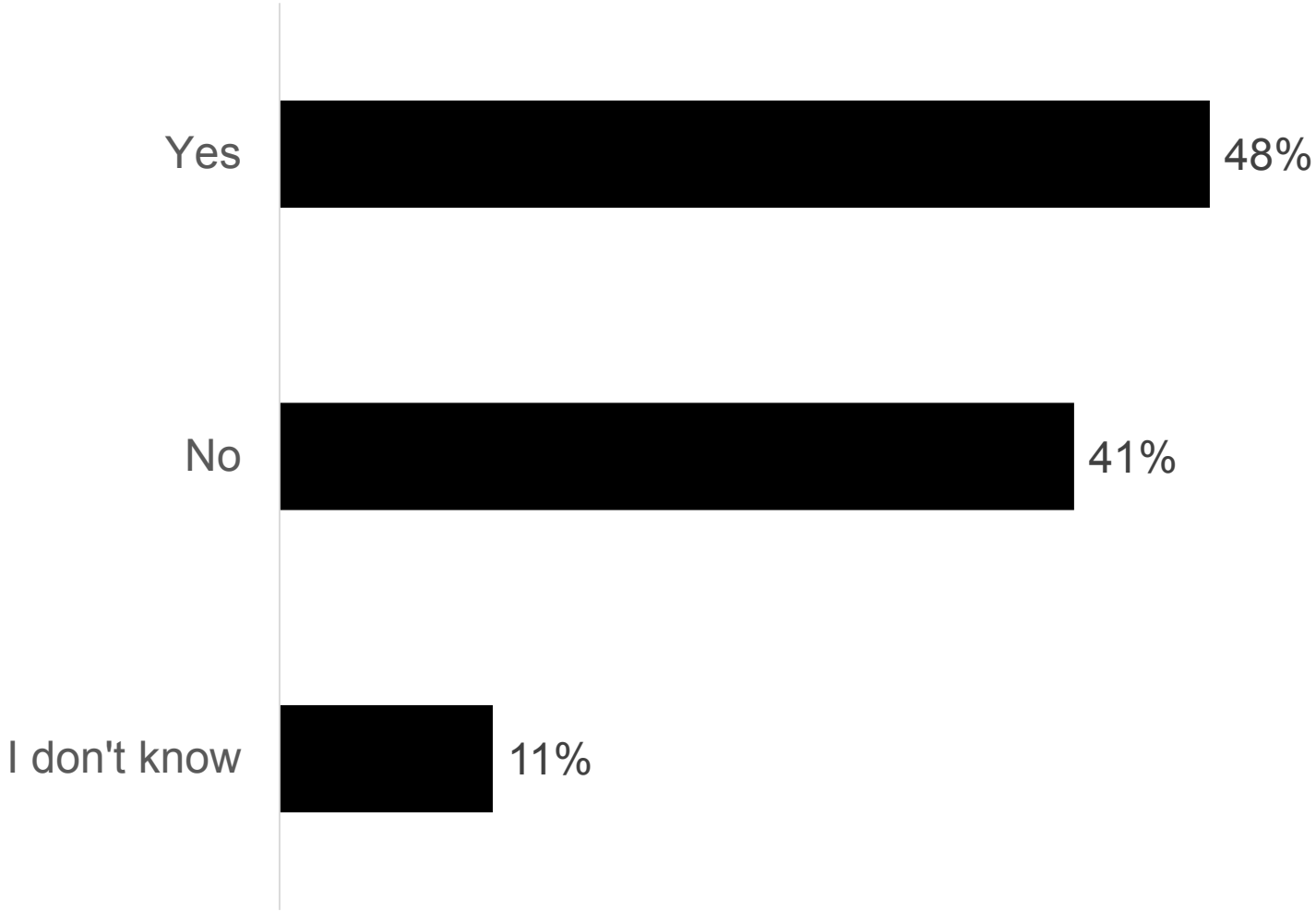
Q10. How many personal vehicles does your household have available to use in an evacuation? (N= 640)



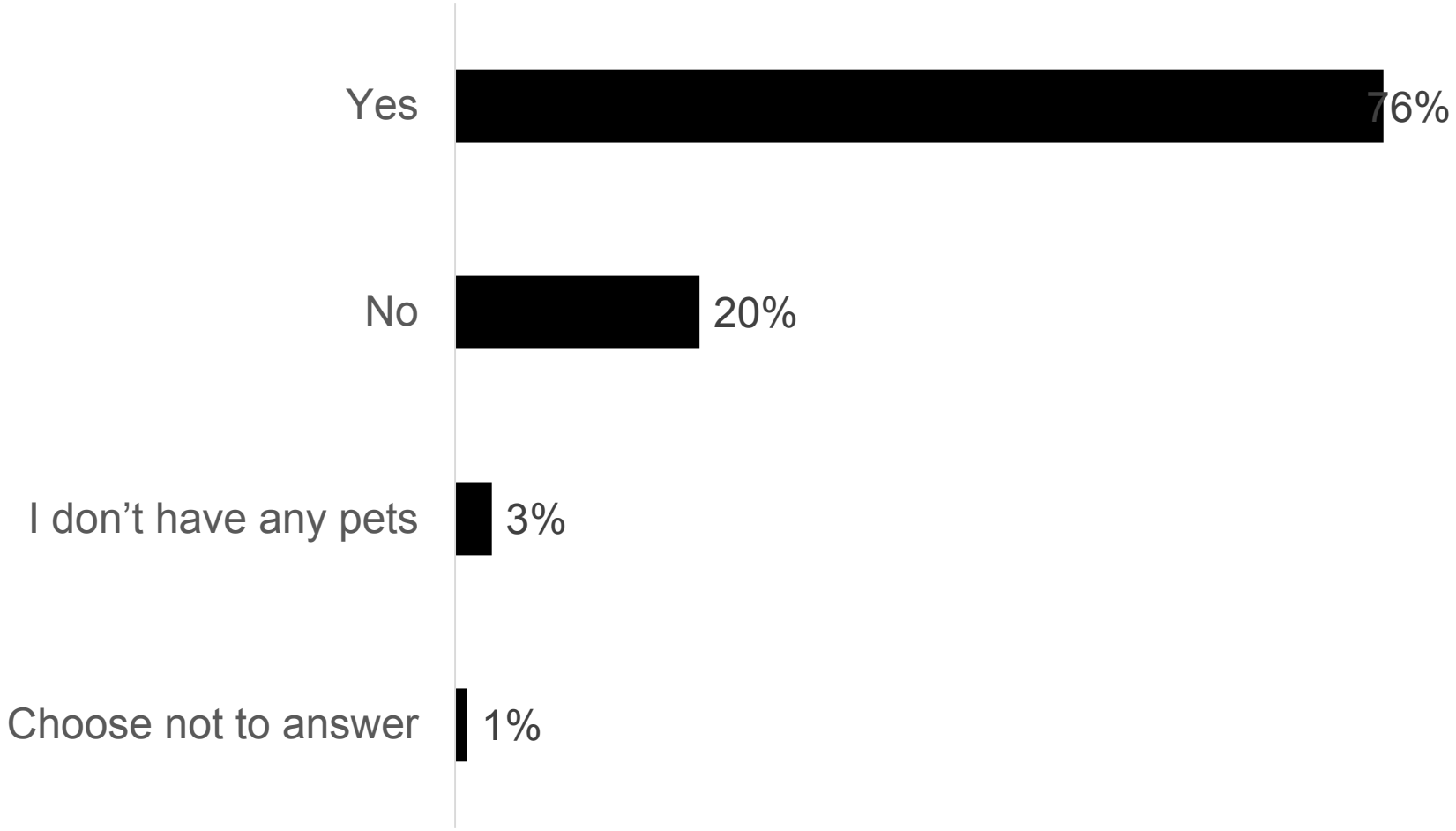
Q11. About how much fuel is in your household's primary vehicle right now? (N= 643)



Q12. Do you think this is enough fuel for you to reach the place you think you would evacuate to? (N= 643)



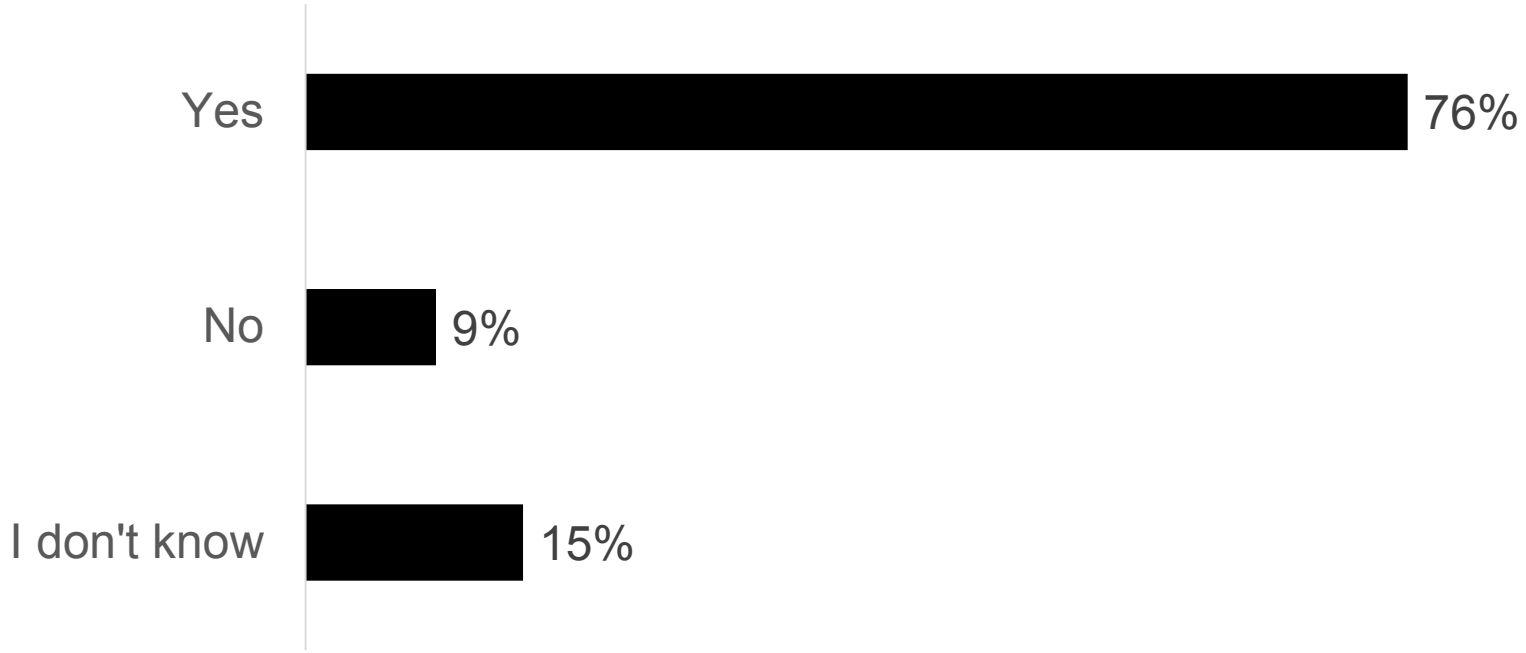
Q13. If you have any pets, will you take them with you if you evacuate? (N= 650)



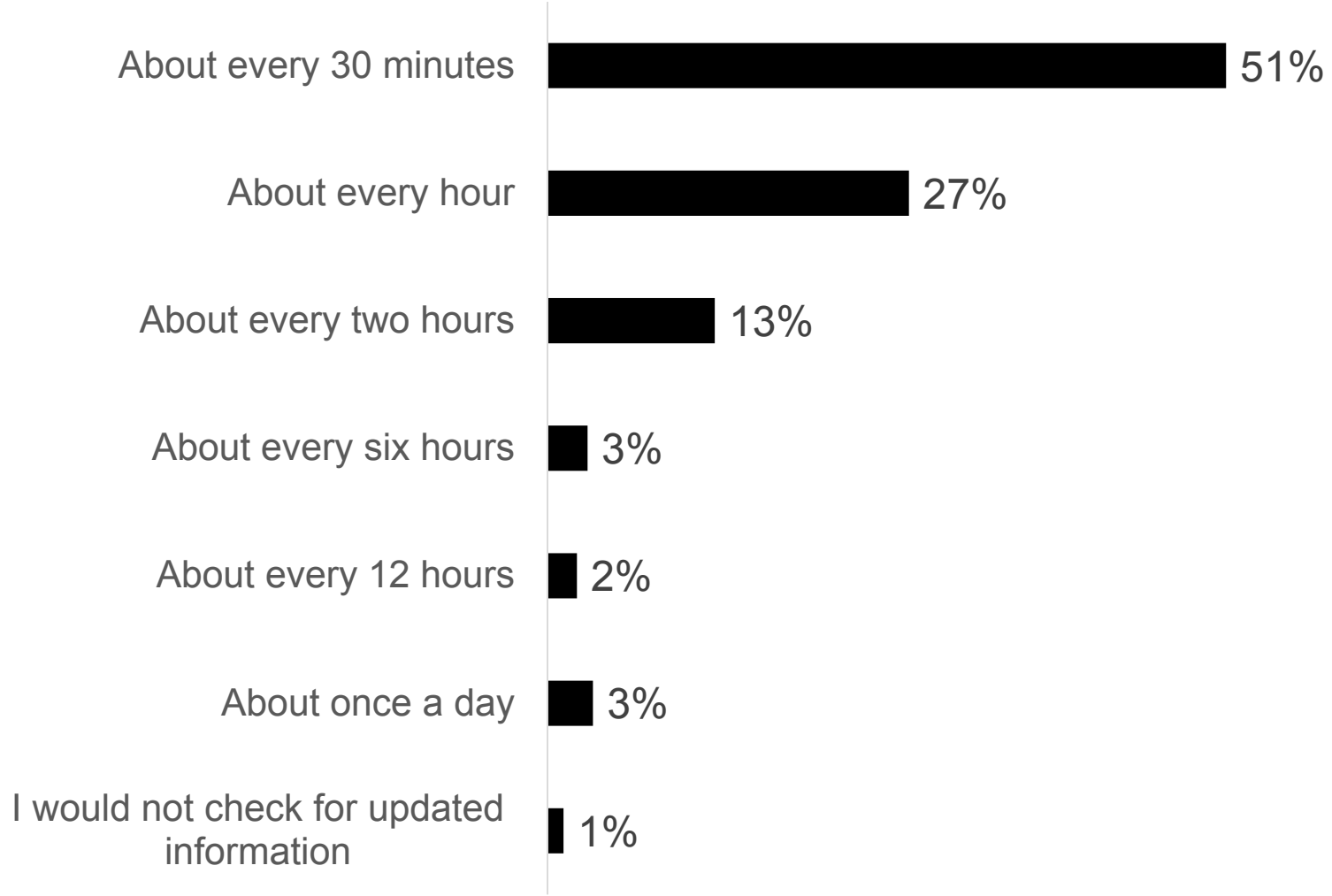
Earthquake Scenario

For the rest of the survey, we want you to imagine that a catastrophic earthquake of magnitude 8.0 has occurred in the New Madrid region. This region has experienced severe infrastructure damage with households losing access to basic utilities (power, internet, water, gas). A mandatory evacuation order has been given for your neighborhood. Please keep this scenario in mind as you answer the remaining questions.

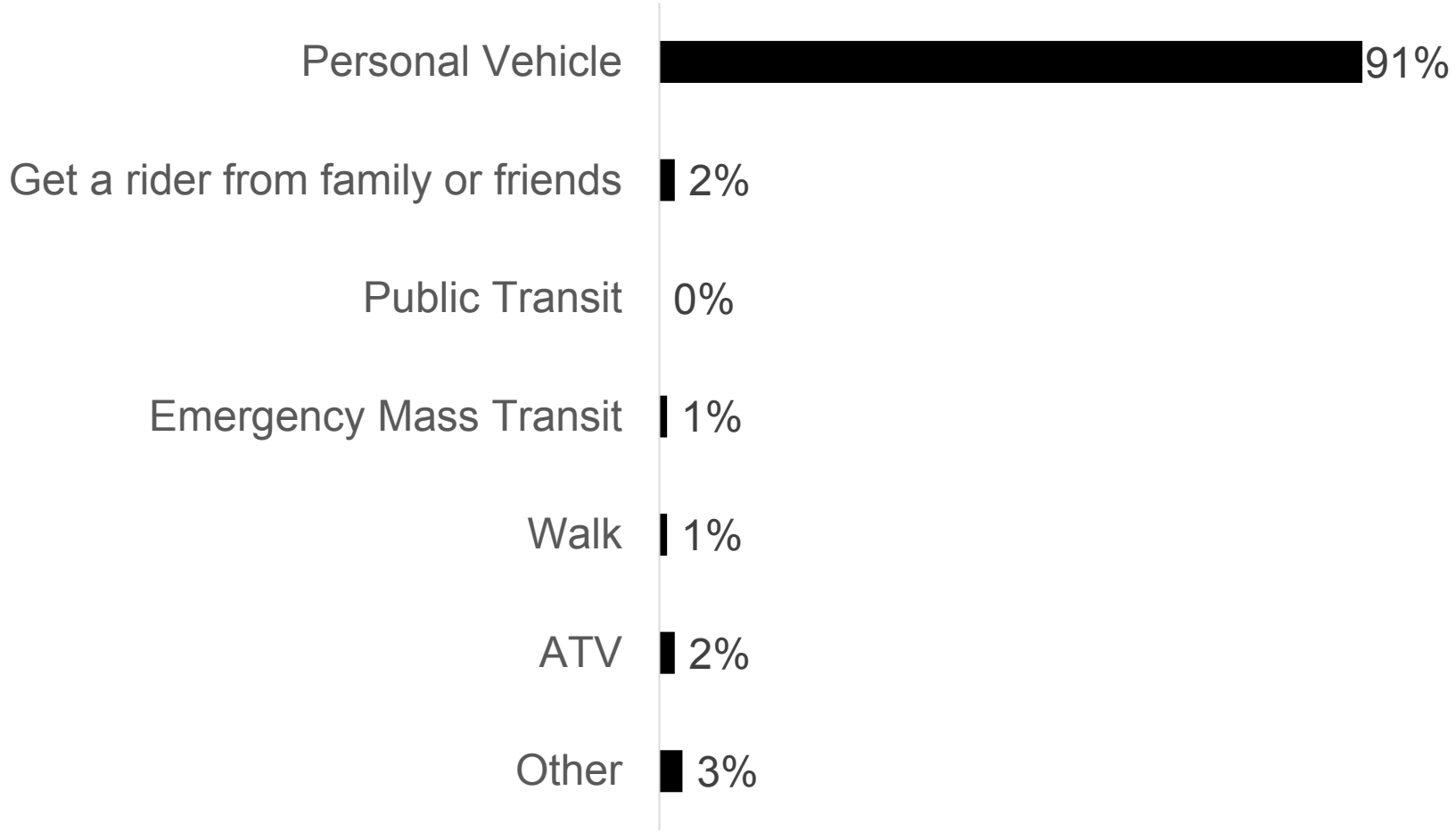
Q14. Given the scenario described above, would you evacuate? (N= 592)



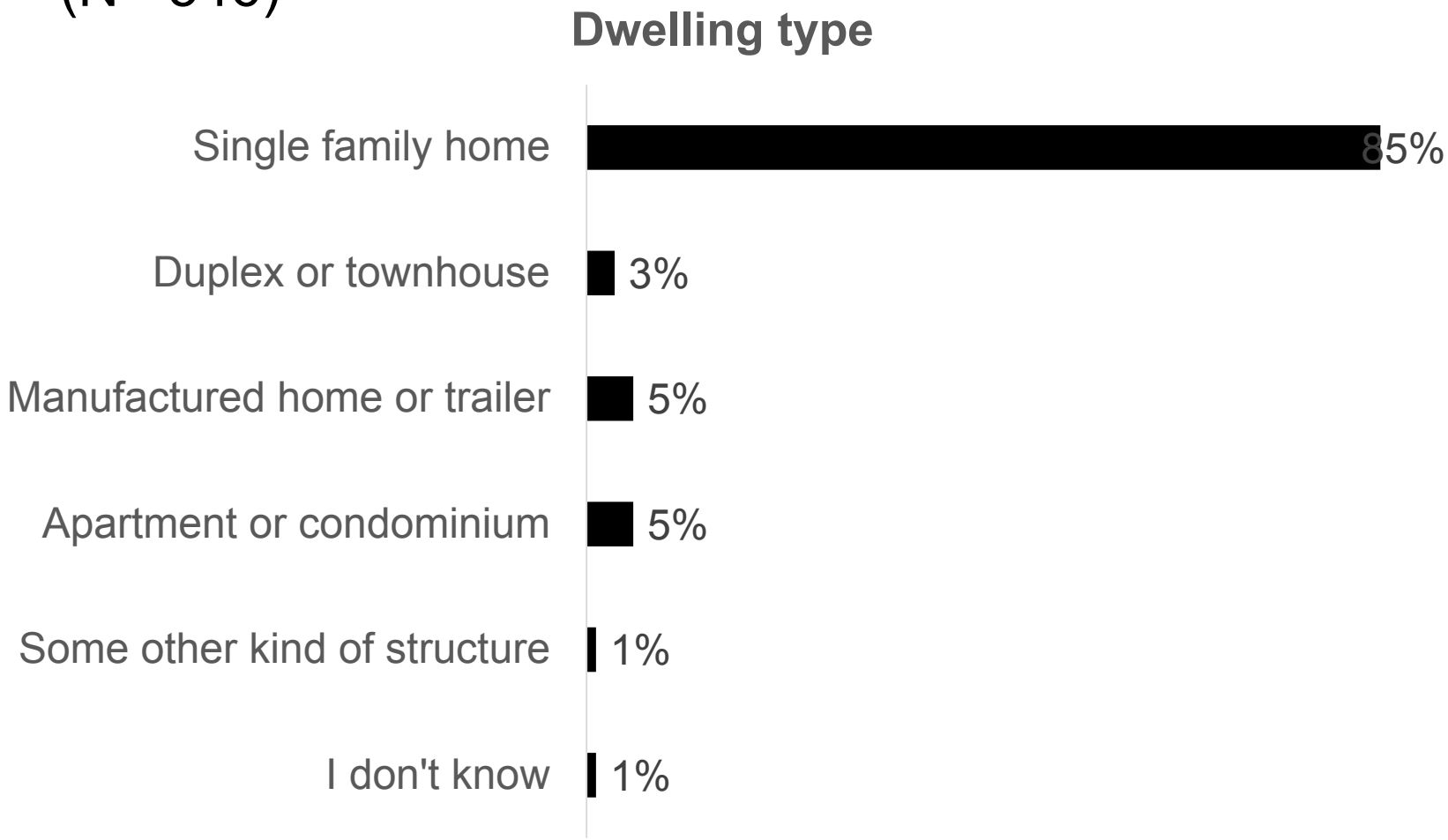
Q15. How frequently would you check for updated information on the earthquake and/or the evacuation? (N= 592)



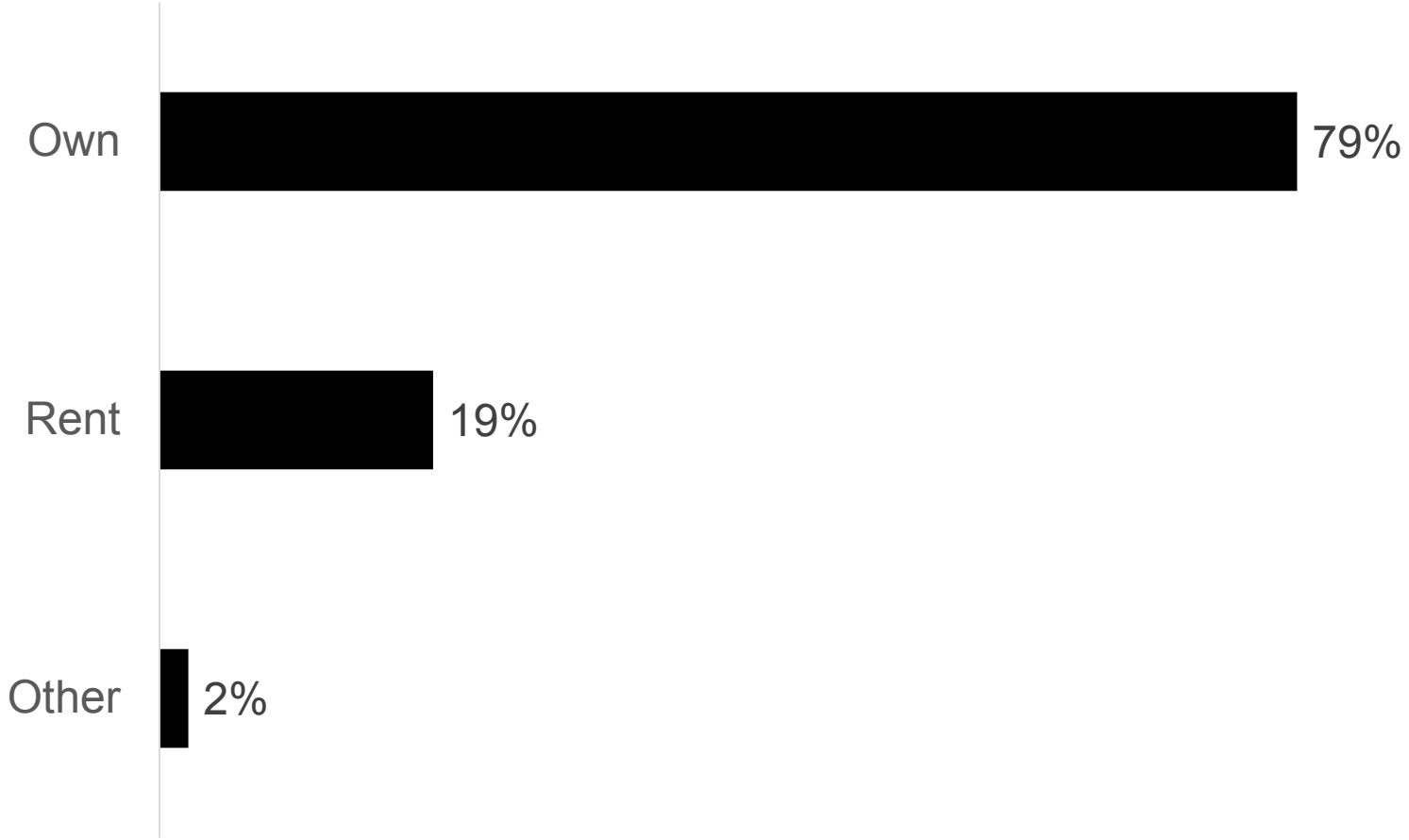
Q16. Which of the following options would you be most likely to use to evacuate? (N= 586)



Q17. Which of the following best describes your home? (N= 546)

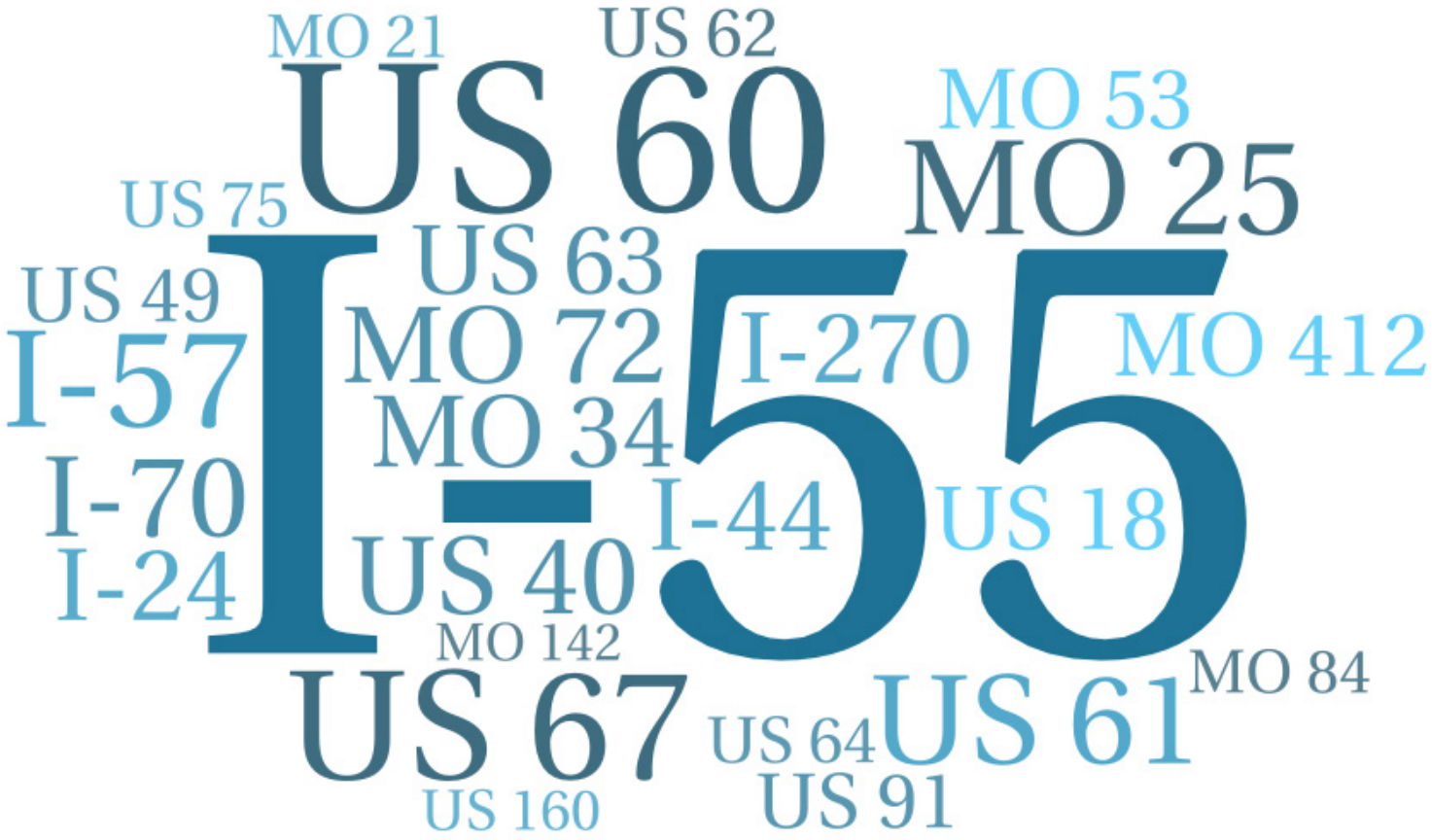


Q18. Do you (or your family) own your residence or do you rent? (N= 544)

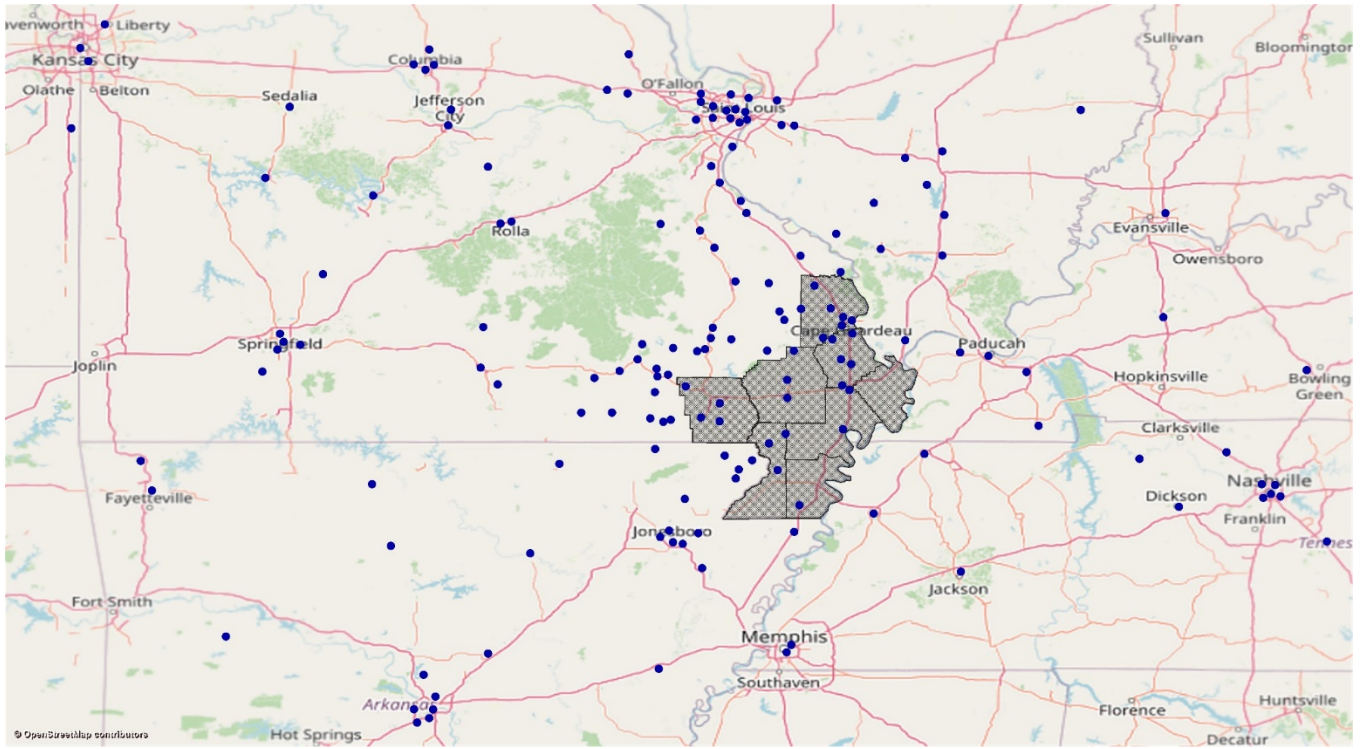


Q19. Where would you go? (N= 603)

Q20. What route would you take to get there? (N= 539)



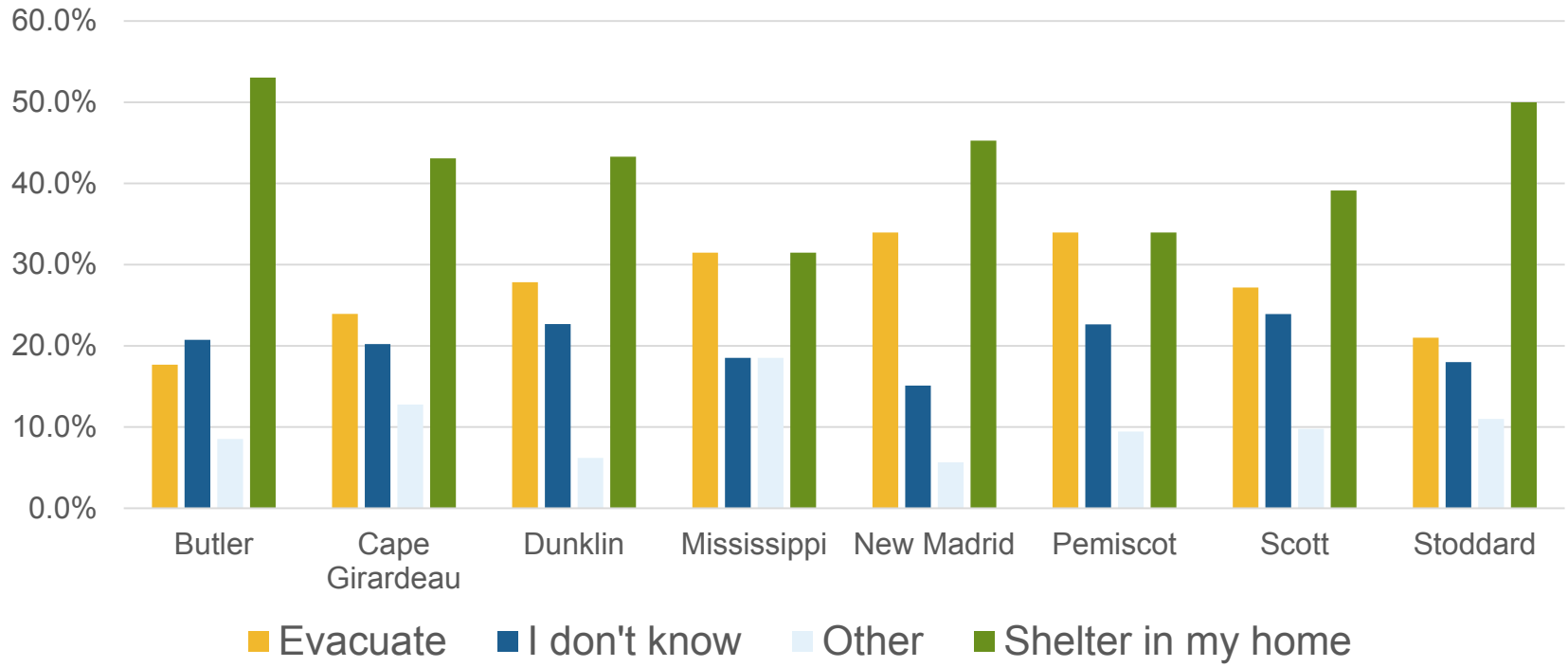
Destination choice



Destination	St. Louis	Springfield	Arkansas	Kansas City+ Columbia+ Jefferson city	In region (within eight counties)
Percentage	27.3%	18.1%	19.7%	11.7%	23.2%

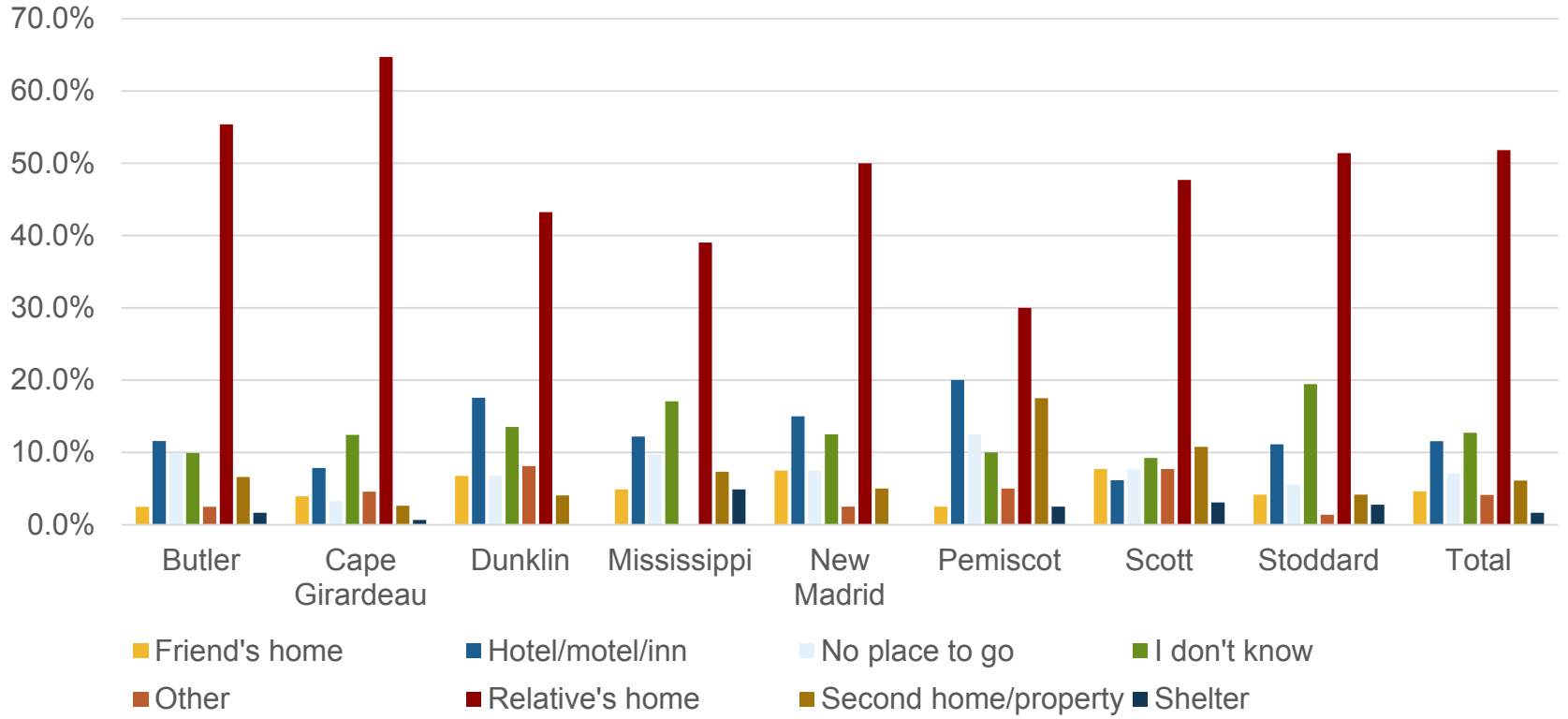
Evacuation/Stay Decision by County

- Percentage of evacuation decision varied across the counties.
- People who live in New Madrid, Pemiscot and Mississippi County are more likely evacuate (likely due to proximity to the river).



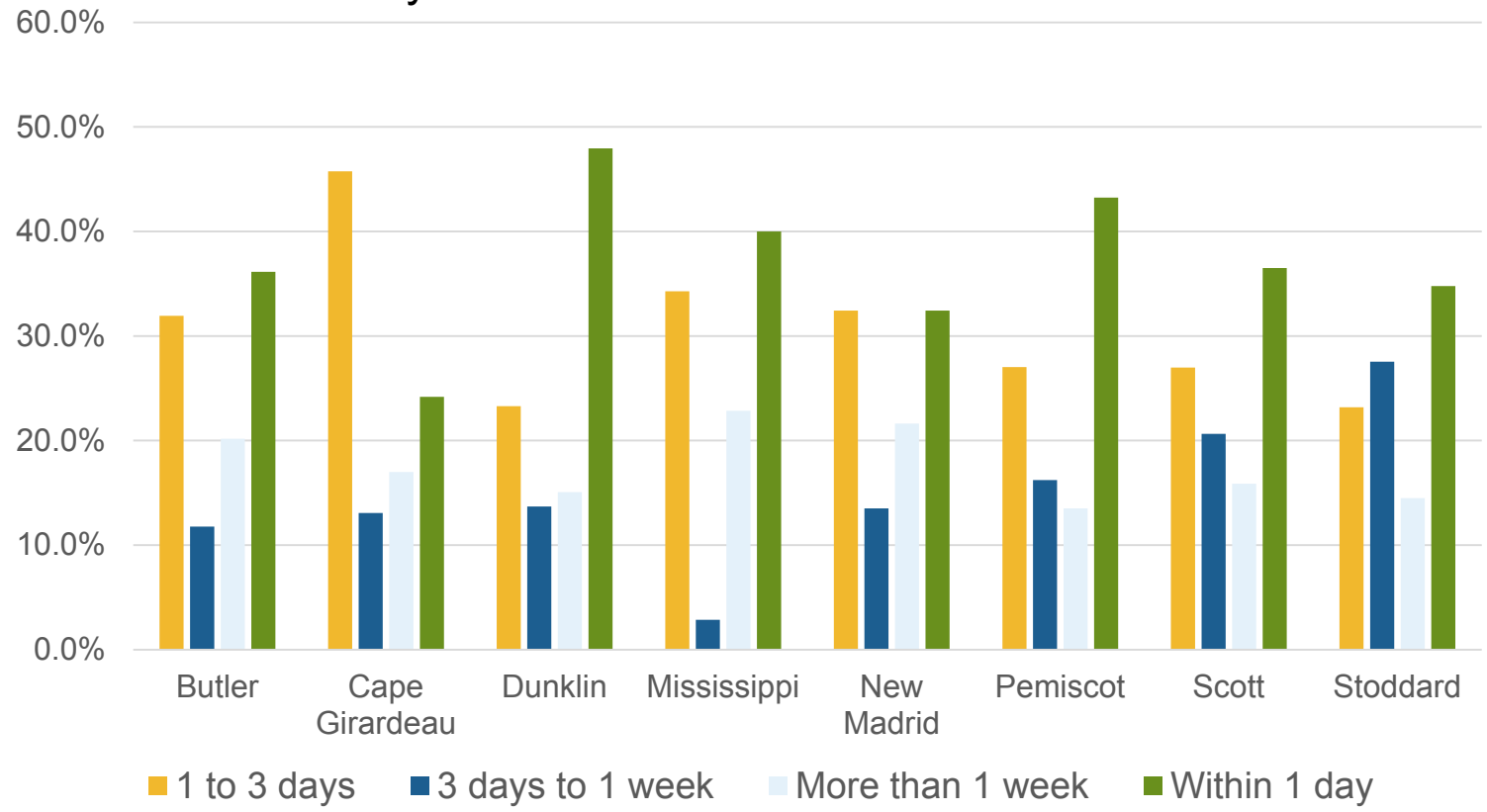
Evacuation destinations

- The dominant destination type was relative's home followed by hotel/motel/inn.
- Public shelter only 1 to 5 percent.



Evacuation Departure Time

- Expected departure time varied by counties
- Those living in Dunklin, Pemiscot and Mississippi County more likely to evacuate within 1 day



Next Steps

- Build travel demand models using survey data and other public datasets (Census, ACS, BTS, etc)
- Generate demand between origin-destination pairs and assign it in traffic simulation models
- Generate evacuation performance measures
  - Delays, clearance time, bottlenecks

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FEMA NEHRP Update

Grant Program Updates

FEMA Regional Updates

NETAP Training Updates

NATIONAL EARTHQUAKE PROGRAM MANAGERS MEETING

FEMA NEHRP Update

Jon Foster, CFM
FEMA/NEHRP Program Specialist
FEMA Earthquake and Wind Programs Branch

March 29, 2022

NOFO Timeline

Task	Date*
✓ NOFOs submitted for Review	Early March
• Anticipate publishing NOFOs	Early May
• Nation-wide calls for individual participating States and Territories	Late April and Early May
• Applications due in ND Grants	Early June
• National Panel Review	Mid June
• Anticipate Awards	July
• Projected Period of Performance Start Date	August 1st (18-months)
• Post Award Meeting with Non-Profits and Institutions of Higher Education	August/September

*Dates are subject to change

Highlights of NOFO

- Extending Period of Performance from 12 months to **18 months**
- Continued use of Performance Measures and Logic Models (more on **Thursday**!)
- States/Territories to include travel to **NEPM** for 2023 in their work plan (like this year)

Thank you!

FEMA

NEPM 2022

NEHRP Technical Team Project Brief – Mike Tong, NEHRP, FEMA HQ

March 29, 2022, Memphis TN

FEMA

FEMA NEHRP Statutory Requirements

National Earthquake Hazards Reduction Act of 1977 (PL 94-125) as amended and most recently authorized by the National Earthquake Hazards Reduction Act of 2018 (P.L. 115-307)

(A) PROGRAM RESPONSIBILITIES

The Administrator of the Federal Emergency Management Agency:

State Assistance Grants Program for Individual States (ISEA) & Multi-State & National (MSNEA)

National Earthquake Technical Assistance Program (NETAP)

Seismic Code Support & Technical Guidance Development:
Model Building Codes & Standards Support and FEMA Technical Guidance Publications

Demonstration Projects

Four NEHRP Agency Program Coordination
Interagency Coordination Committee (ICC)
Policy Coordination Work Group (PCWG)

*(i) shall operate a **program** of grants and assistance to enable **States** to develop mitigation, preparedness, and response plans, … (excluded,) prepare inventories and conduct seismic safety inspections of critical structures and lifeline infrastructure, update building, land use planning, and zoning codes and ordinances to enhance seismic safety, increase earthquake awareness and education, and provide **assistance** to **multi-State groups** for such purposes;*

*(ii) shall support the implementation of a **comprehensive earthquake education**, outreach, 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 preparing for, mitigating against, responding to and recovering from earthquakes and related disasters;*

*(iii) shall, in conjunction with the Director of the NIST, other Federal agencies, and private sector groups, **use research results to** support the **preparation, maintenance, and wide dissemination of seismic resistant design guidance and** related information on **building codes, standards, and practices for new and existing buildings**, structures, and lifeline infrastructure, aid in the development of performance-based design guidelines and methodologies, and **support model codes** that are cost effective and affordable in order to promote better practices within the design and construction industry and reduce losses from earthquakes;*

*(iv) shall enter into cooperative agreements or contracts with States and local jurisdictions and other Federal agencies to establish **demonstration projects** on earthquake hazard mitigation, to link earthquake research and mitigation efforts with emergency management programs, or to prepare educational materials for national distribution*

*(v) shall **support** the Director of the **NIST** in the completion of **programmatic goals**.*

Projects for New Building Design – Tong/Aronson

An IDIQ contract with BSSC/NIBS from 2021-2026

NEHRP Recommended Seismic Provisions for New Buildings – The 2026 NEHRP Recommended Seismic Provisions (BSSC) *(Tong & Aronson)*

- Formed the 2026 NEHRP Provisions Update Committee (PUC) with 28 voting members and NEHRP agency representatives from FEMA, NIST and USGS.
- Updates the consensus process to include broad stakeholders and more diversified participants.
- Evaluates and adopts ASCE/SEI 7-22 as the baseline document for the 2026 NEHRP Provisions.
- Prioritizes and forms Issue Teams based on the report: *Future Topics and Research Needs Identified by the 2020 NEHRP Provisions Update Committee* and other inputs from code and standard organizations, earthquake engineering research community and design practitioners.

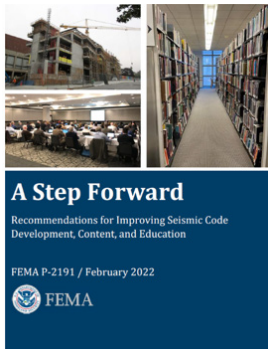
Committee on Functional Recovery for New Buildings (BSSC) *(Tong & Aronson)*

- A consensus committee to support the PUC and NEHRP agencies for developing design practice guidance and feasible code and standard requirements for increased functional recovery in new buildings.

Recent Technical Resources for New Building Design

FEMA P-2191: A Step Forward: Recommendations for Improving Seismic Code Development Process, Contents, and Education *(Tong)*

- Surveyed and interviewed with code users, stakeholders and code development experts.
- Provides recommendations for improving seismic code development process, contents and education.

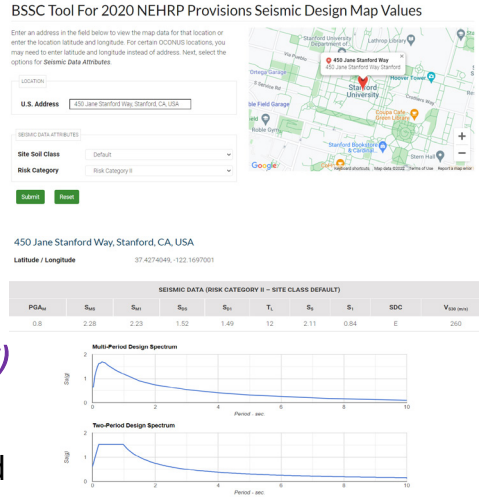


FEMA P-2192: 2020 NEHRP Provisions: Design Examples, Training Materials and Design Flow Charts *(Tong)*

- Technical and training resources for the 2020 NEHRP Provisions and ASCE 7-22.
- Helps design practitioners and building officials to understand major seismic code changes in ASCE 7-22.
- A series of free webinars are offered monthly to the public by BSSC in 2022.

New Seismic Design Maps for 2020 NEHRP Provisions, ASCE 7-22, 2024 IBC and IRC (USGS, FEMA) *(Tong)*

- Translates 2018 USGS seismic hazard maps into building code and standard design maps.
- Provides an interface to USGS web-based data service for design ground motion parameters and spectra.
- Web interface tool for the 2020 NEHRP Provisions is available at www.wbdg.org/additional-resources/tools/bssc-2020-nehrp



FEMA P-366 HAZUS Estimated Annualized Earthquake Losses for the United States (FEMA, USGS) *(Rozelle & Tong)*

- Updates to the AEL based on 2020 census data, nationwide building footprints, 2022 replacement costs, and nationwide parcel data attribution.
- Applies improved ground motions using the 2020 NEHRP Provisions/ASCE 7-22 including the 2018 USGS hazard maps and 2022 update for Hawaii.

Seismic Building Code-Related Activities - Mahoney/Scott/Aronson/Tong

These are projects in the last year of a 5-year contract – no changes/expansions to scope are available. Next 5-year overall contract in the works.

1. Seismic Code Support Committee (SCSC) Activities – *(Mahoney & Scott)*

- In 1/22, the SCSC developed and submitted to the ICC a total of 51 Group B code change proposals;
  - 14 for the IBC, 24 for the IEBC, 12 for the IRC and 2 for the ICC Performance Code.
  - Major change includes new ICC policy to place all code provisions on existing residential buildings to the IRC (currently in both IRC and IEBC and uncoordinated).
- All submitted code change proposals are then heard at the Committee Action Hearings.
  - Taking place March 27 to April 7 in Rochester, NY.
  - Committee recommends approval, disapproval or approval as modified.
- Recommended committee actions open for public comment in July.
- Public Comment Hearings are held in September for ICC membership vote on resolution of public comments.
- Updated ICC codes are published as the 2024 edition.

Projects for Existing Building Evaluation & Retrofit – Mahoney/Scott/Aronson

These are projects in the last year of a 5-year contract – no changes/expansions to scope are available. Next 5-year overall contract in the works.

1. Improving Seismic Retrofitting Guidance Project (ATC-140) *(Mahoney & Aronson)*
   - Investigates technical issues and develops guidance for the seismic evaluation and retrofit of existing buildings.
   - These are then submitted as proposed revisions to the ASCE/SEI 41 consensus standard.
   - This year focuses on finalizing and documenting previous three years of technical development and the recommended change proposals for updating **ASCE/SEI 41-17**.
2. Update of Weak Story Design Guidelines Supplement (ATC-137) *(Mahoney & Aronson)*
   - Ongoing development of a supplement publication to existing *Seismic Evaluation and Retrofit of* ***Multi-Unit Wood Frame Buildings with Weak First Stories*** (**FEMA P-807**) to address the tuck under parking issue commonly found in southern California.
3. Guide for Repair of Damaged Buildings to Achieve Future Resilience (ATC- 145) *(Mahoney & Aronson)*
   - Updates and improves **FEMA 306, 307, & 308** guidance for post-earthquake assessment, repair and retrofit procedures of concrete buildings.
   - This final year of the initial project compiles the studies and assessment framework for reinforced concrete structures into a draft report on assessing damage.

Projects Providing Other Technical Design Guidance Publications

Mahoney/Scott/Aronson/Tong

These are projects in the last year of a 5-year contract – no changes/expansions to scope are available. Next 5-year overall contract in the works.

1. Performance Based Seismic Design Guidelines/Functional Recovery (ATC-138) *(Mahoney)*
   - The FEMA Funded ATC-138 project is using Performance Based Seismic Design to Estimate Functional Recovery Time (ATC-138). This will be published as a new **Volume 8 of the FEMA P-58 Performance Based Seismic Design** series and will provide guidance on how to use FEMA P-58 to accurately estimate functional recovery time.

2. Building Occupancy Resumption Guidance (ATC-137) *(Mahoney & Aronson)*
   - Document and develop national level guidance based on local programs on using outside resources to perform building safety inspections to more quickly resume occupancy.
   - The intent of this project is to develop supplemental guidance for *Post-Disaster Building Safety Evaluation Guidance* (FEMA P-2055).

3. Earthquake Resistant Design Concepts (ATC-137) *(Scott)*
   - Update **P-749** to include recent changes to the seismic provisions of the building codes.

4. Homebuilders' Guide to Earthquake Resistant Design and Construction (ATC-137) *(Scott)*
   - Update of FEMA 232 has been kicked off. This design guide is for one- and two-family light frame structures and the intended audience is homebuilders and other non-engineers.

5. USGS Circular 1242 (ATC 137) *(Scott)*
   - Updates for NEHRP post-earthquake event coordination document.
   - USGS has invited FEMA EWPB and a FCO to be part of the update committee to provide input.

6. Improving the Nation's Lifelines to Achieve Resilience (ATC-150) *(Mahoney)*
   - Begins development of coordinated seismic guidance for the nation's lifelines infrastructure.

7. Improving Building Performance in Very High Seismic Regions (ATC-154) *(Tong)*
   - Conducts problem-focused study on high collapse risk for buildings in very high seismic regions and develops solutions and recommendations for use by building code and standard.

Mike Tong
Physical Scientist
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FEMA

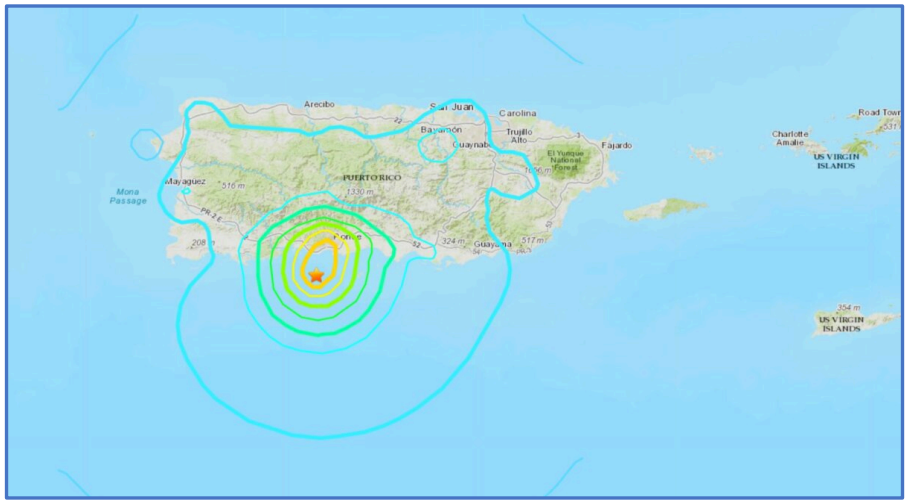
NATIONAL EARTHQUAKE PROGRAM MANAGERS MEETING

2020 Puerto Rico Earthquake Mitigation Update

José A. Lebrón
Regional Earthquake Program Manager
FEMA, Region 2

Question?

- What do you remember from the 2020 Puerto Rico's Earthquakes?

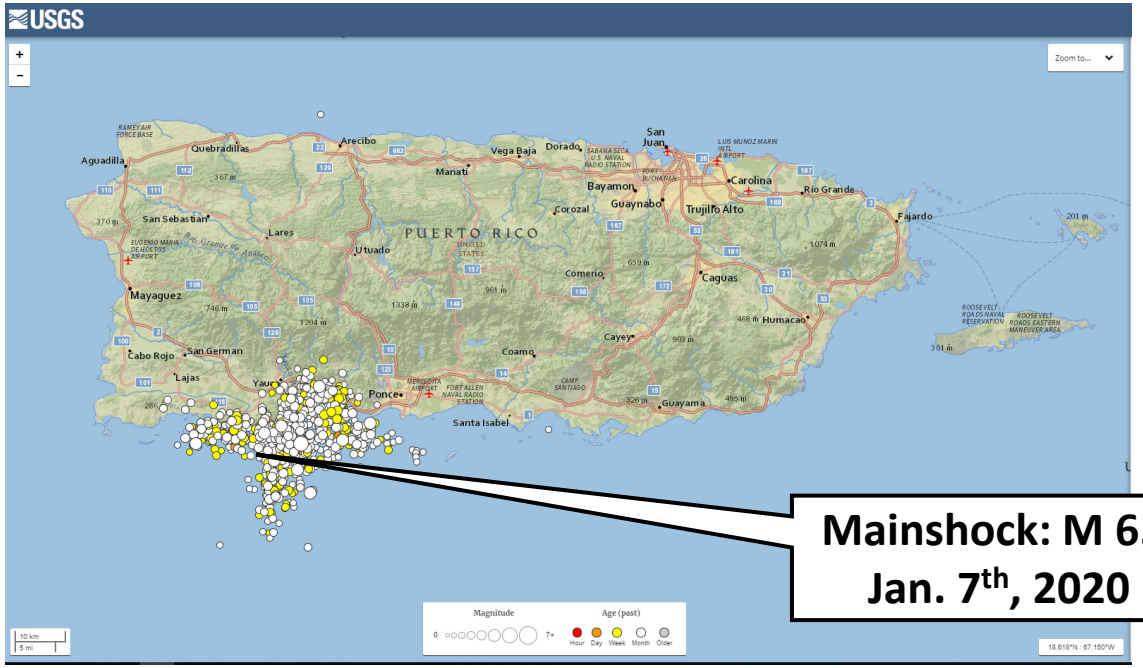


Suggested Responses

DR-4473-PR Hazard Mitigation Report

Operational Period Report

March 14 - March 20



Public Assistance: C-G Projects

Projects processed through HM queue during the operational period: 8

- Projects with HMPs: 5 (57%)
- A&Es: 1
- No mitigation: 2

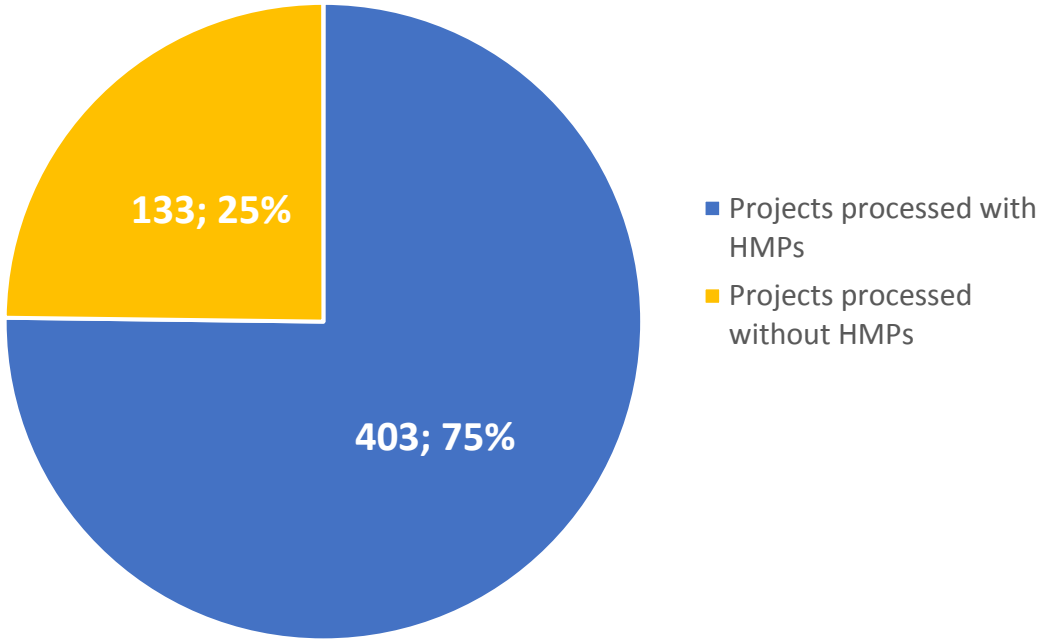
- Projects pending to be processed: 17
- Seismic retrofits for this week: 1
  - (School Elvira Vicente, Yauco)
- HMP Costs for this week: $1.12M

  (265 % of the Best Available Cost)

C-G Projects processed by HM (Sent to Insurance)

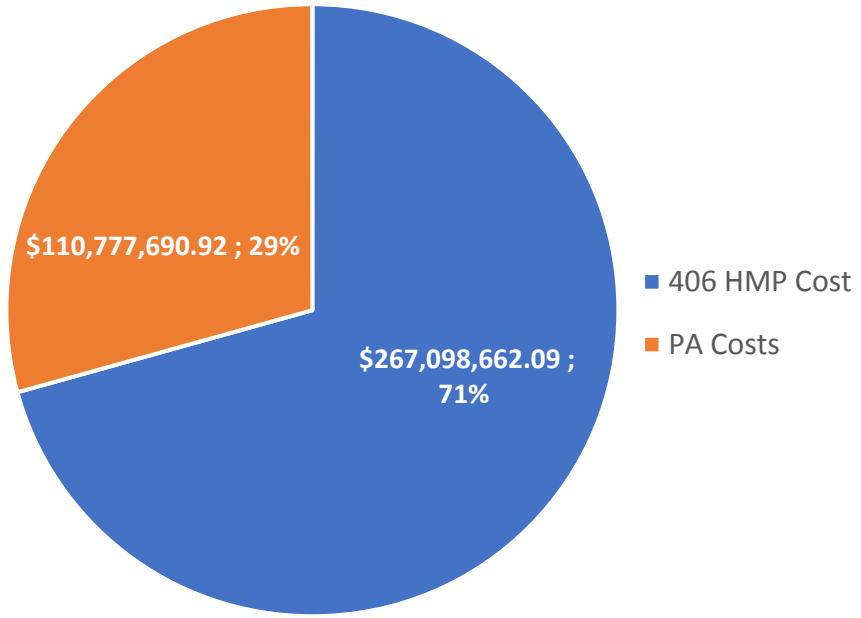
DR-4473PR Processed Projects

Total processed projects =536

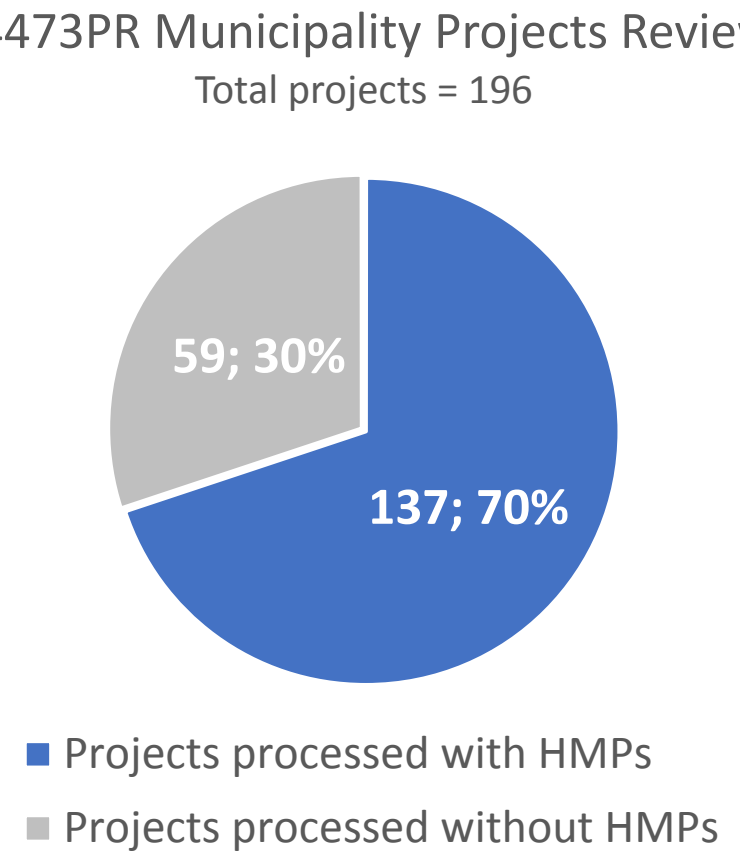


DR-4473PR Best Available Cost vs. 406HMP Cost

Total Best Available Cost (includes Mitigation) = $377,876,353.01



C-G Projects processed by HM: Municipality



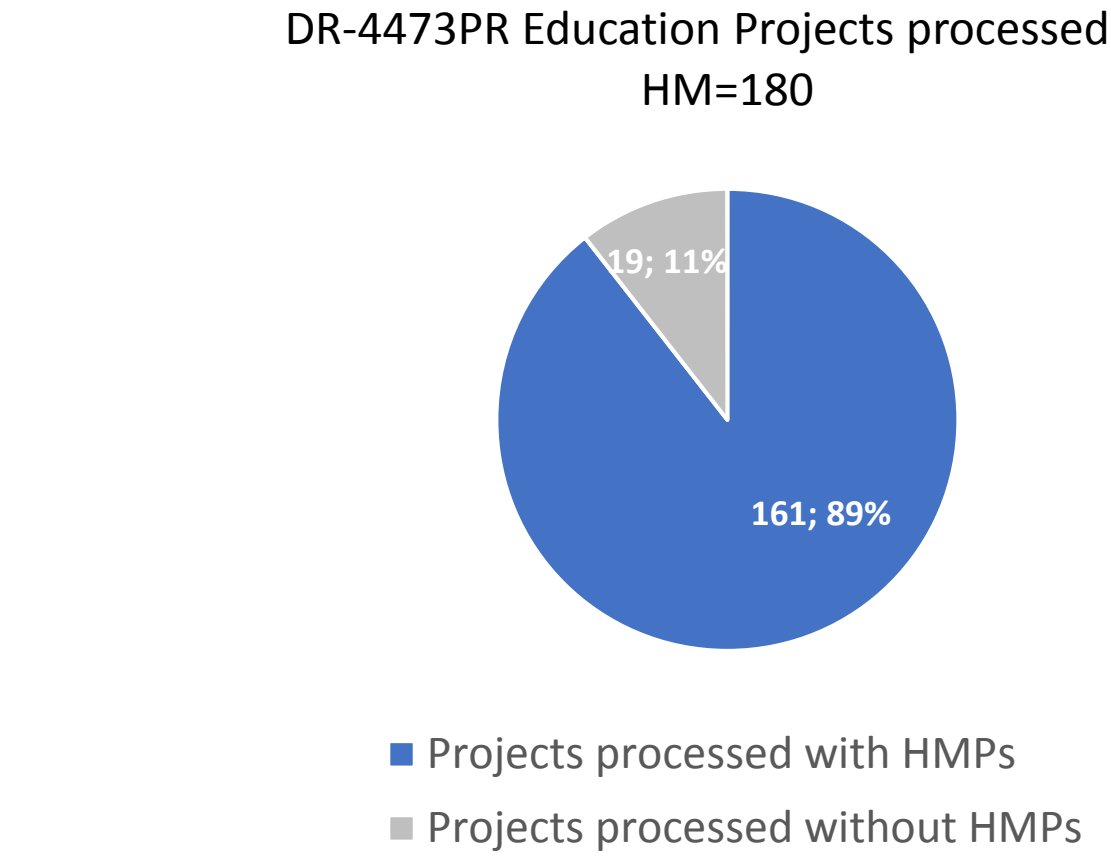
Total Municipality Projects Processed: 196

Total municipality projects with HMP: 137 (70%)

Total HMP cost: $5,904,716.40 (20%)

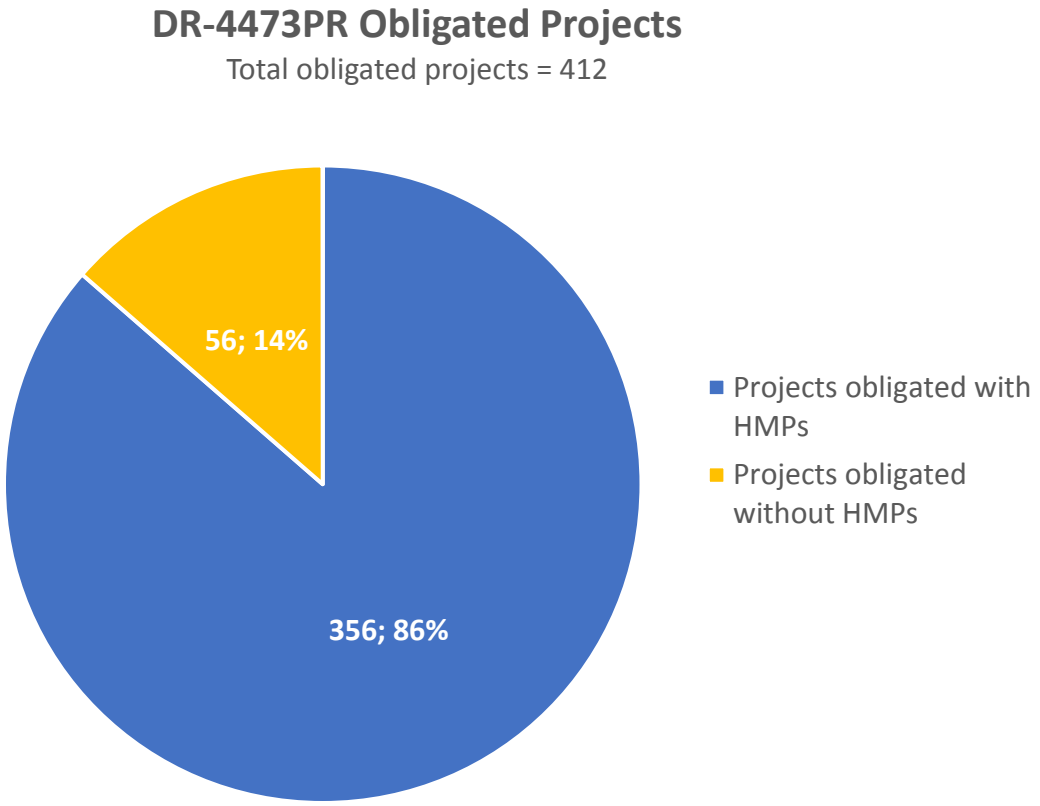
Municipalities with HMPs: 14 / 14

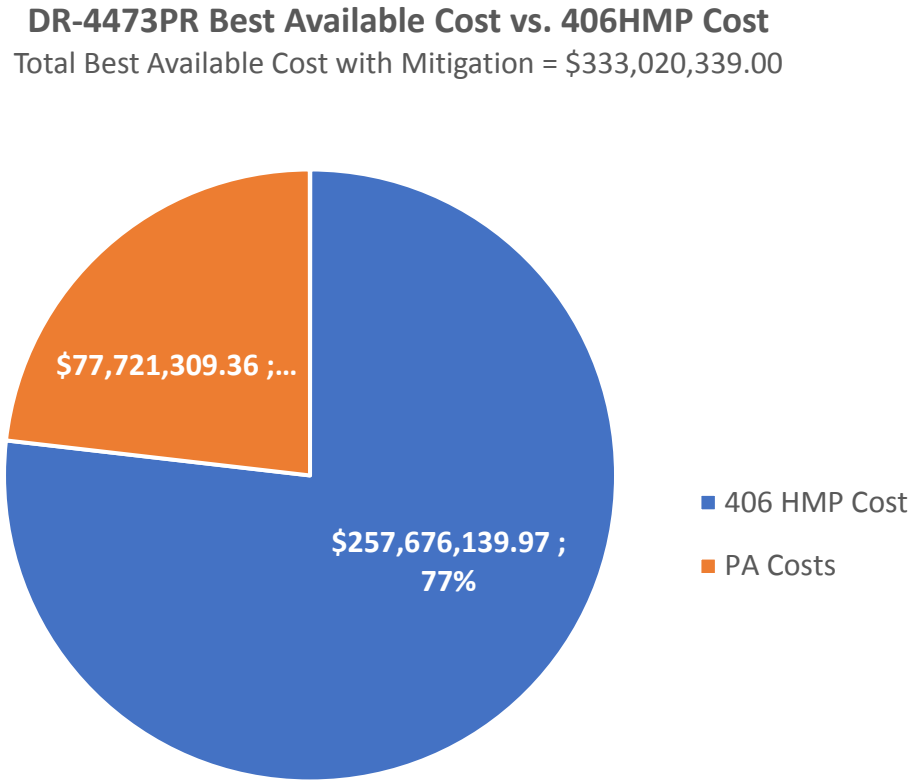
C-G Projects processed by HM: Education



- Education projects processed: 180
- Education projects with HMPs: 161 (89%)
- Total HMP cost: $254,996,884.74 (88% of Best Available Cost)
- Total HMPs for Schools processed with seismic retrofit BCA : 157 including three PNP's that are Private School and a College.

C-G Projects Costs for Projects Obligated





Hazard Mitigation Challenges

- Meeting with PRDE for seismic retrofits.
- Meetings with other applicants to evaluate possible seismic retrofits.
- Preparation of mitigation alternatives for Historic Buildings.
- Meeting EHP regarding seismic-retrofit.

Hazard Mitigation Grant Program (Section 404)

Hazard Mitigation Grant Program

Projects with Seismic Retrofits *Completed*

DR-1798-PR

- Installation of Four Seismicity Monitoring Station, PRSN
  - Providing the Puerto Rico Seismic Network (PRSN) the capability of locating and disseminating earthquake information in less than 5 minutes after an earthquake event.
  - The scope of work consisted of the installation of four stations in areas where azimuthally coverage was lacking, installed 4 accelerometers co-located at the seismic stations, installed and monumented 3 Geodesic Positioning System Stations eastward and westward of the seismo-active zone, installed a data concentrator linked to the PRSN via station for satellite data transmission and, incorporated the seismic and ground motion instruments into PRSN real-time monitoring system.
  - Project Cost
    - Federal Share: $237,677
    - Local Share: $79,268
    - Total Cost: $316,945

Hazard Mitigation Grant Program

Projects with Seismic Retrofits

Completed

DR-1136-PR

- **Seismic Retrofit of 96 Seismic Schools, PRDE**
  - Project Cost
    - Federal Share: $10,852,829
    - Local Share: $3,617,610
    - Total Cost: $14,470,439

Questions?

Summary

- Amount of PA Mitigation obligated 77 % more than regular PA projects.
- Seismic Retrofit Projects Completed the HMGP.

Leveraging NEHRP Grant for $Millions in Earthquake Mitigation

NEPM– 3/29/2022

Background

NEHRP Eligible Activities (*paraphrased*)

1. Develop seismic mitigation plans
2. Develop inventories
3. Update building codes, zoning codes, and ordinances
4. Increase earthquake awareness and education
5. Emergency management exercises with mitigation component
6. Promotion of Earthquake Insurance
7. Assistance to Multi-State Groups to do any of the above

NEHRP Eligible Activities (*paraphrased*)

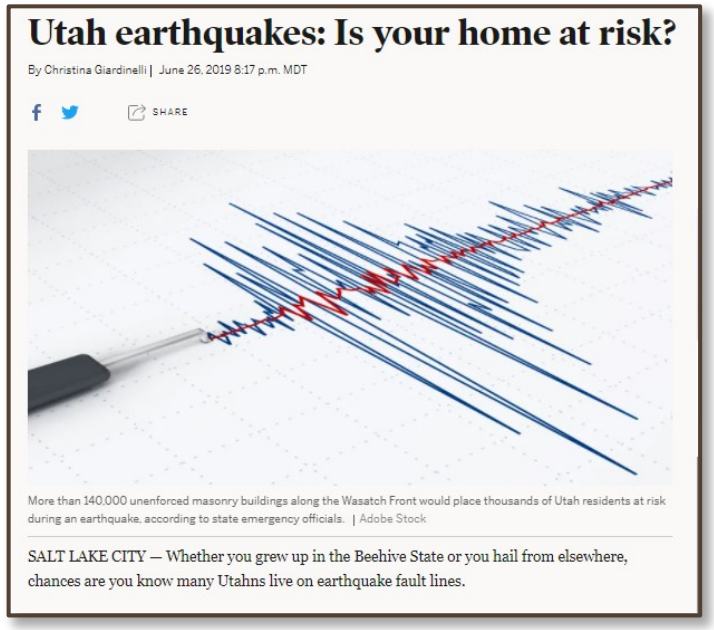
1. Develop seismic mitigation plans
2. Develop inventories
3. Update building codes, zoning codes, and ordinances
4. Increase earthquake awareness and education
5. Emergency management exercises with mitigation component
6. ~~Promotion of Earthquake Insurance~~
7. Assistance to Multi-State Groups to do any of the above

Pursued by Utah since 2016

Step 1: Outreach & Multistate Support

Unreinforced Masonry Summit

- 120+ participants with a broad range of expertise.
- Led by Utah DEM
- Support from FEMA (R8, R10 & HQ) and ATC



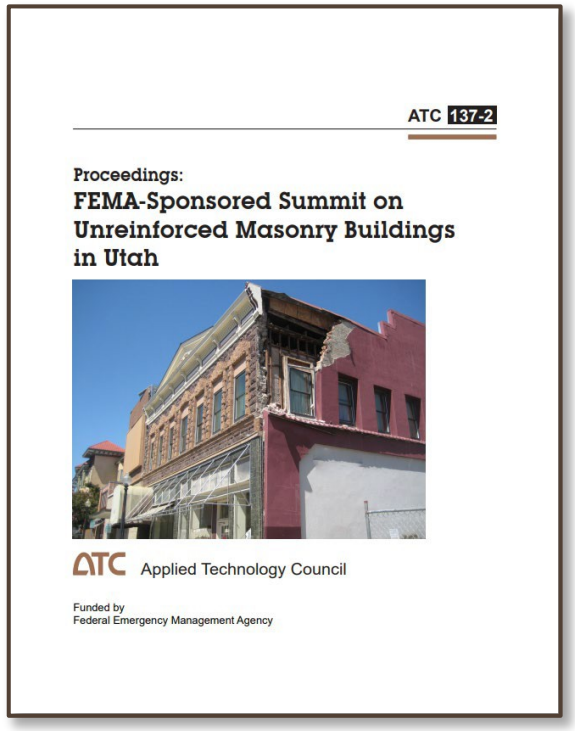
Utah earthquakes: Is your home at risk?

By Christina Giardinelli | June 26, 2019 8:17 p.m. MDT

SHARE

More than 140,000 unenforced masonry buildings along the Wasatch Front would place thousands of Utah residents at risk during an earthquake, according to state emergency officials. | Adobe Stock

SALT LAKE CITY — Whether you grew up in the Beehive State or you hail from elsewhere, chances are you know many Utahns live on earthquake fault lines.



ATC 137-2

Proceedings:

FEMA-Sponsored Summit on Unreinforced Masonry Buildings in Utah

ATC Applied Technology Council

Funded by
Federal Emergency Management Agency


Step 2: Have a
“Designer”
Earthquake*
*NOT RECOMMENDED

Magna Earthquake – March 18, 2020

- Presidentially Declared Disaster
- Recovery ongoing
- >100 damaged Utah schools
- Majority of damaged schools are shelters and on URM Inventory
- 406/PA Mitigation Funding is challenging for structural seismic damages

Slide credit: Brian Stahnke, FEMA R8

Step 3: Mitigation Planning, Building Codes, & Multistate Support

Wasatch Front Unreinforced Masonry Risk Reduction

- Risk Reduction Strategy released (March 2021).
  - *National Mitigation Investment Strategy* Pilot
  - Interagency support intended, but limited
  - Included equity considerations
- Led by DEM & FEMA (R8, R10, & HQ)
- Support from ATC

URM Strategy: Overarching Goals

1

Establish a statewide URM risk reduction program.

2

Protect schools: retrofit, repurpose, or demolish vulnerable schools.

3

Mitigate critical government facilities to implement recovery.

4

Tighten existing building code loopholes at the state level.

5

Empower local communities to enforce existing retrofit requirements and enhance as locally appropriate.

URM Strategy: Goal 2

Protect schools

- Shelters & community hubs
- Set aggressive dates to repurpose, retrofit, or demolish URM schools.
- Technical & funding support.

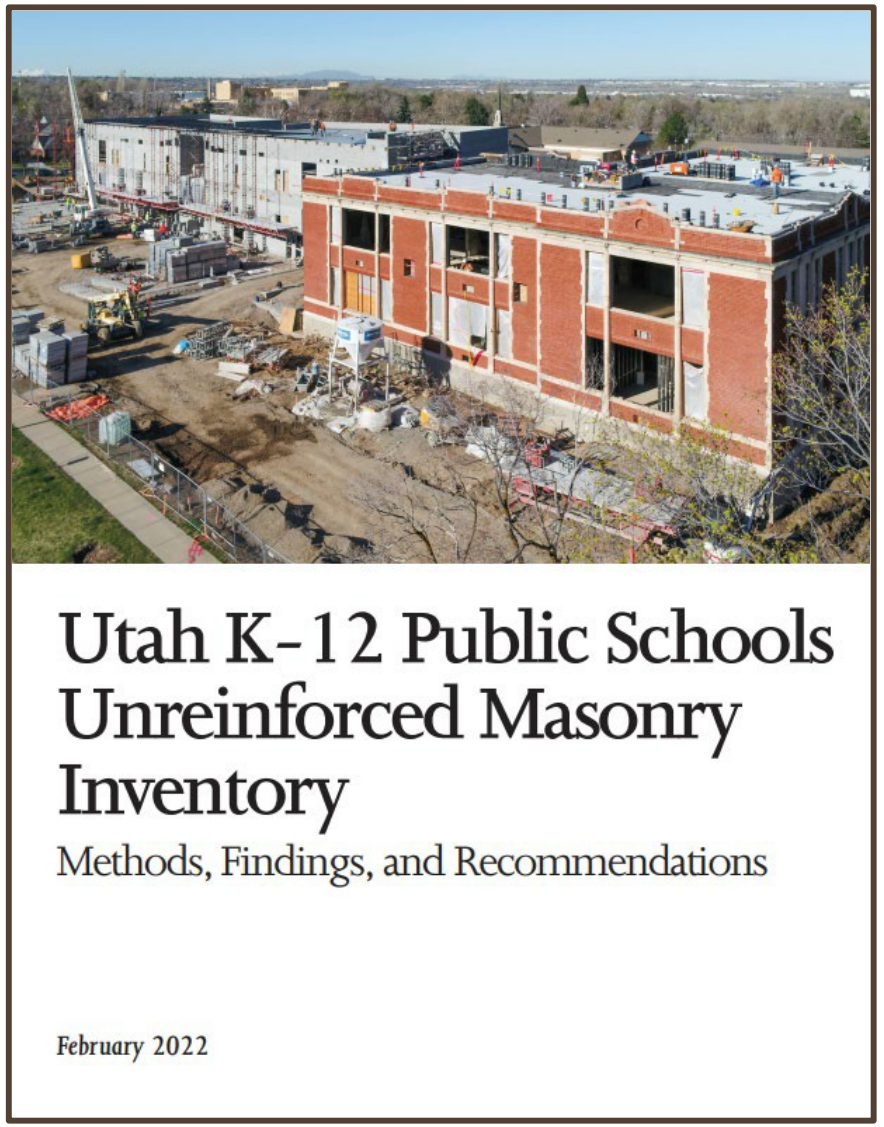
Image source: Deseret News

Step 3: Inventory, Education, & Multistate Support

Utah K-12 Public Schools
Unreinforced Masonry Inventory

What it includes:

- 130 school campuses with 161 URM buildings or additions.
- 76,000 children, or 13% of total K-12 public school enrollment
- Value of buildings at risk: ~$2 billion.
- Recommendations for reducing risk.
- Led by DEM
- Support from FEMA (R8 & HQ) and ATC



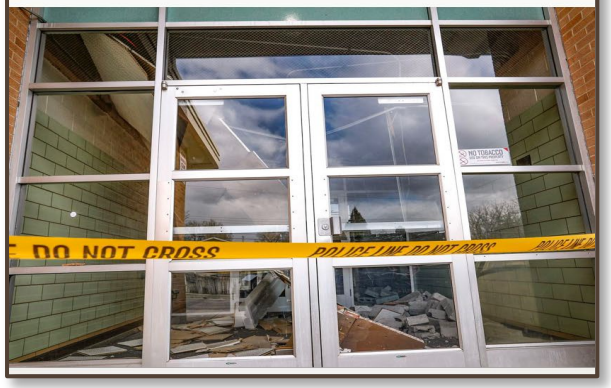
Strong Media Response

DeseretNews.

Report: 119 Utah public school buildings ‘susceptible to significant earthquake damage’

New state, federal report found construction of 119 structures on Utah public school campuses makes them susceptible to significant earthquake damage

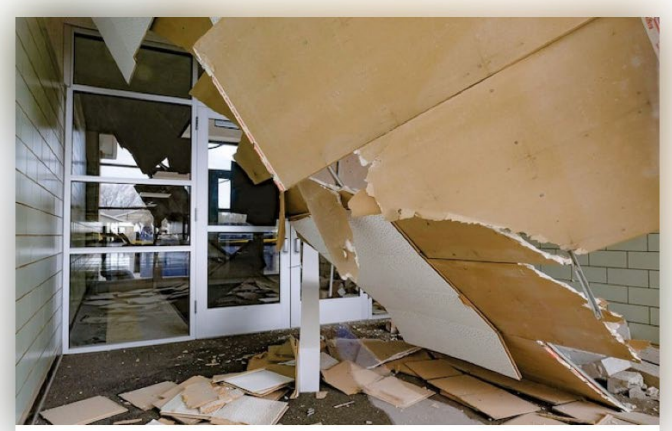
By Marjorie Cortez on February 10, 2022 11:01 am



The Salt Lake Tribune SUBSCRIBE

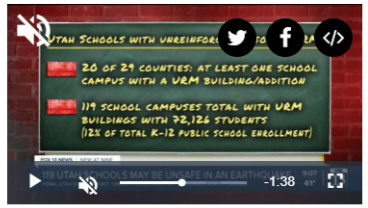
These are the 119 Utah schools that experts worry put kids most at-risk in an earthquake

The report marks the first time all schools in the state have been studied and inventoried. And it follows the 2020 quake in Magna.



DPS and FEMA study shows what Utah schools are at greater risk of collapse from earthquake

Over 100 Utah schools may be unsafe in an earthquake



FOX13 SEARCH ▶ FOX 13 UTAH

By: Spencer Joseph

Watch FOX 13 News on your favorite

Progress!

$171 million

Takeaways

Earthquake Risk Reduction on a Budget

- Let's admit it: the NEHRP Grant is not large
- Two (or more?) approaches to big problems:
  - Build year-to-year
  - Use smaller project (inventory) to highlight need; attention and funding may follow
- Ongoing need for coordination across States, Regions, and sectors

FEMA

nehrp

NATIONAL EARTHQUAKE PROGRAM MANAGERS MEETING

Region 9 Update

Anne Rosinski, C.E.G.

Earthquake Program Manager

Region 9

- National Earthquake Hazards Reduction Program (NEHRP)
  - FEMA Region 9 Mitigation Division NEHRP grant task requirements in addition to NEHRP NOFO and Terms and Conditions
- *NEW* Region 9 Planning and Implementation Branch (PIB)
- Seismic BCA update
  - Proposed pilot: Pre-calculated benefits for soft story structures
- 2nd Inventory workshop - Date TBD (late 2022 or early 2023)
- Earthquake Insurance project - Phase II
- Earthquake Mitigation 101 and Planning guide

National Earthquake Program Managers Meeting

Region 10 Update

Amanda Siok

Earthquake Program Manager

Amanda.Siok@fema.dhs.gov

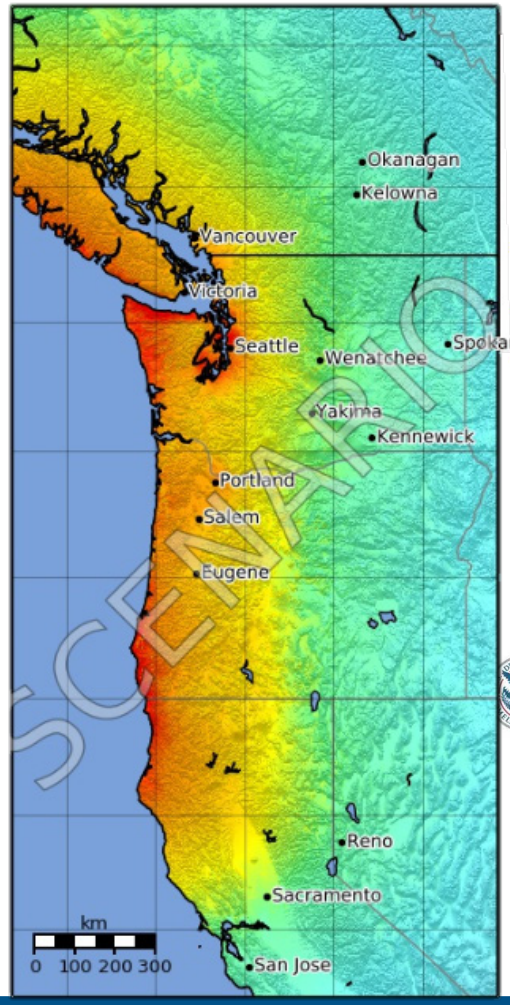
Steven Weissman; The Stranger

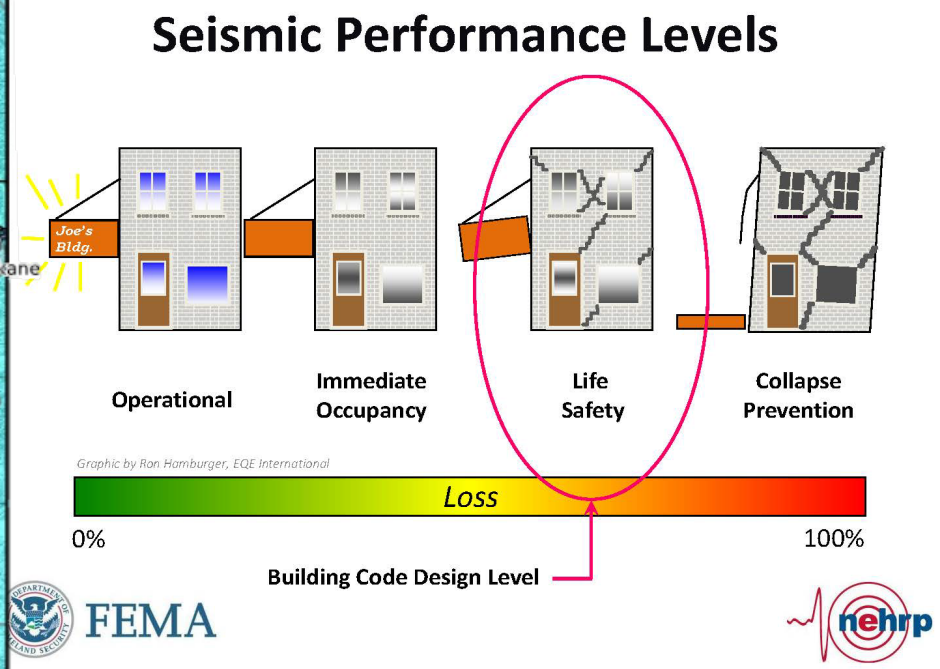
I, ANONYMOUS

I, Anonymous: SHUT UP About the Big One!

by Anonymous · Mar 9, 2022 at 11:00 am

RED doesn't have to mean destruction





- **Retrofit older buildings**
  - pre-2000s
  - Alignment with energy efficiency upgrades
- **Require new buildings to meet higher standards**
  - Consider performance objectives

CSZ Exercise

- October RISC “Takeover”
  - NETAP Trainings
  - USGS Products
  - Clearinghouse processes
  - Post-Quake Inspections

CASCADIA RISING 2022

- Next Steps:
  - Exercise and Mitigation Planning Linkages
    - Goals:
      1. Coordination across silos (Response, Preparedness, Mitigation)
      2. Messaging support for exercises to advocate mitigation solutions

Successes

Identify

State Fund

Plan

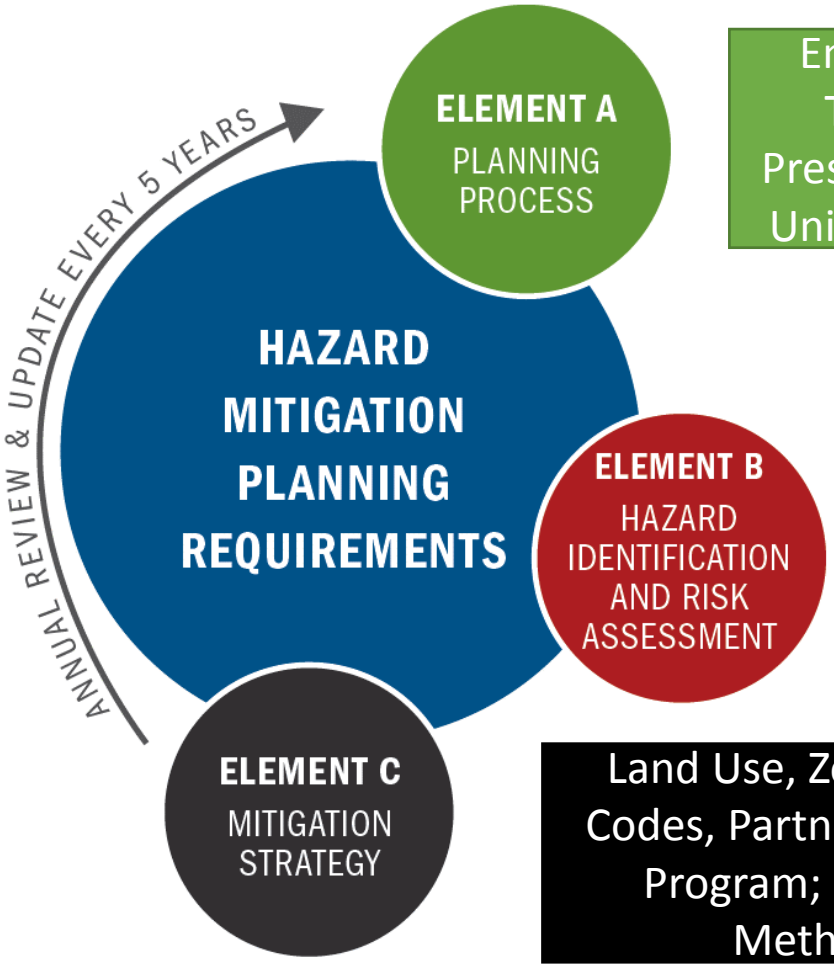
Successes

Identify

State Fund

Plan

Earthquake Mitigation 101 & Planning Guide



Engineering Groups, EERI, Tenants Rights, Historic Preservation, School Districts, Universities, Developers, etc.

Building Inventories, RVS, Insurance coverage, Building Code Analysis, Hazus Runs, Demographic & Equity Analysis

Land Use, Zoning, Building Codes, Partnerships, Retrofit Program; Prioritization Methodology

Rapid Visual Screening of Buildings for Potential Seismic Hazards: A Handbook
Third Edition
FEMA P-154 / January 2015
FEMA

Techniques for the Seismic Rehabilitation of Existing Buildings
nehrp

Natural Hazard Retrofit Program Toolkit
A Guide for Designing a Disaster-Resilient Building Retrofit Program in Your Community
FEMA

NEHRP Recommended Seismic Provisions for New Buildings and Other Structures
Volume I: Part 1 Provisions, Part 2 Commentary
FEMA P-2082-1/ September 2020
FEMA nehrp

Reducing the Risks of Nonstructural Earthquake Damage – A Practical Guide
FEMA E-74 / December 2012
FEMA nehrp

Planning Matters

Mitigation Plan

Post-Disaster Findings

HAZARD MITIGATION STRATEGY
DR-4413-AK / Declared: January 31, 2019

PURPOSE
This document provides an agreement to implement the Hazard Mitigation Program strategy in response to DR-4413-AK, 2018 Cook Inlet Earthquake. This agreement is the framework for implementing long-term cost-effective solutions to minimize future disaster damages and is consistent with the State Hazard Mitigation Plan.
The State of Alaska, Division of Homeland Security & Emergency Management (DHS&EM) and the Federal Emergency Management Agency (FEMA) participated in developing the goals and objectives to deliver Hazard Mitigation Programs in this disaster. This document outlines objectives and actions for each group within the Hazard Mitigation Branch. Many actions will be implemented via the Joint Field Office, while some will be implemented over multiple years with the support of the Regional Office.

EVENT DESCRIPTION
On November 30, 2018, a reported 7.0 Magnitude earthquake occurred in Alaska, with the epicenter located 10 miles north of Anchorage at a depth of 21 miles. The earthquake caused damage to major highways, important public roads, bridges, and other transportation infrastructure. Undermining of road embankments, railroad tracks, and loss of track base. A widespread power, water, and communication disruption; structural collapse and resulting fires to several buildings; and severe damage to private homes, personal property, and businesses.

HAZARD MITIGATION GOAL
The mitigation goal for DR-4413-AK is to increase the capabilities necessary to reduce loss of life and property state-wide by lessening the impact of disasters. This goal will be accomplished through specific objectives related to FEMA Programs, such as Public Assistance (PA) and Hazard Mitigation Grant Program (HMGP), trainings and technical assistance, research and analysis, as well as communication and outreach.
These capabilities include, but are not limited to:

- State-wide and community impacted risk reduction project identification
- Improve the resilience of critical infrastructure and key resource lifelines
- Risk reduction for specific vulnerabilities from natural hazards
- Initiatives to reduce future risks after a disaster has occurred
- Identify potential mitigation opportunities to be incorporated into Hazard Mitigation Plans and Strategies
- Increase awareness and collaboration with other State, Federal and Tribal agencies to support mitigation

DR-4413-AK - Hazard Mitigation Strategy

Page 1 of 6

Disaster Mitigation Strategy

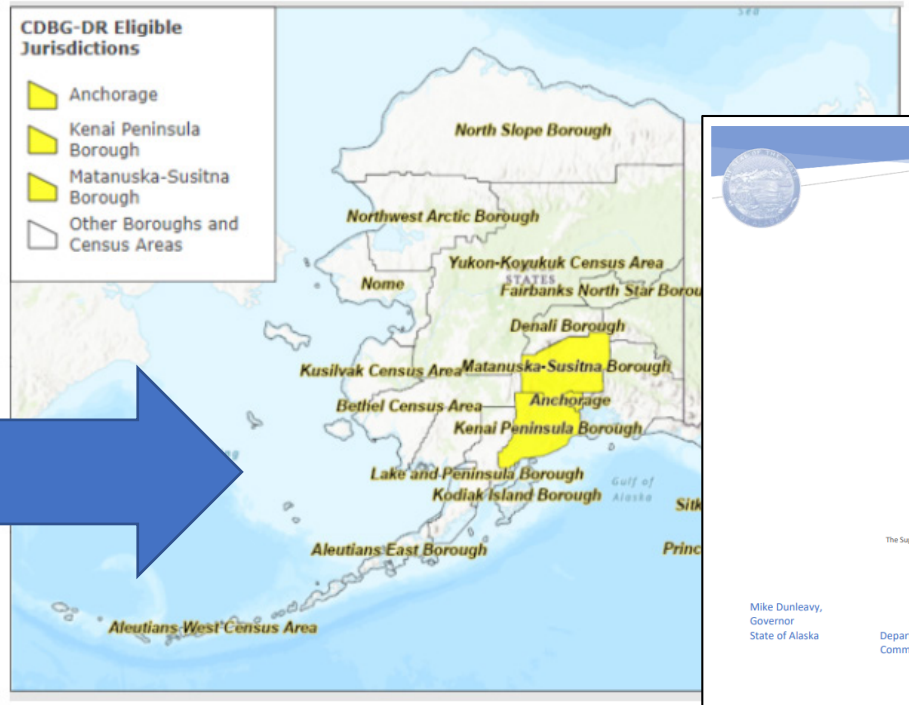
Department of Commerce, Community, and Economic Development
DIVISION OF COMMUNITY AND REGIONAL AFFAIRS

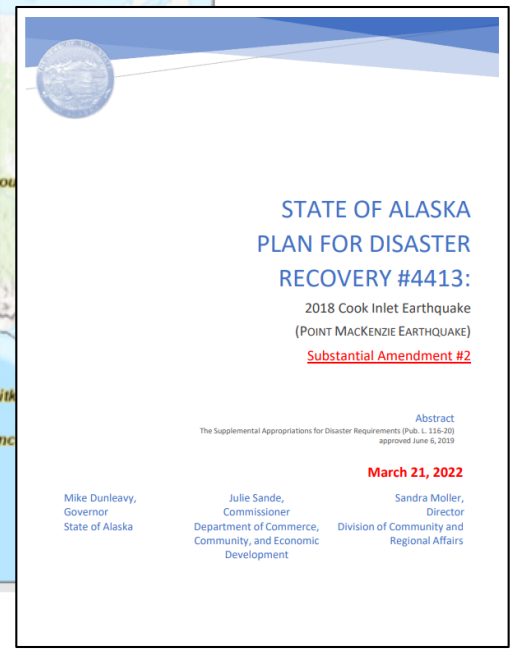
HOME PROGRAMS RESOURCES PUBLICATIONS NOTICES AND C

State of Alaska / Commerce / Community & Regional Affairs / Grants Section / CDBG-DR

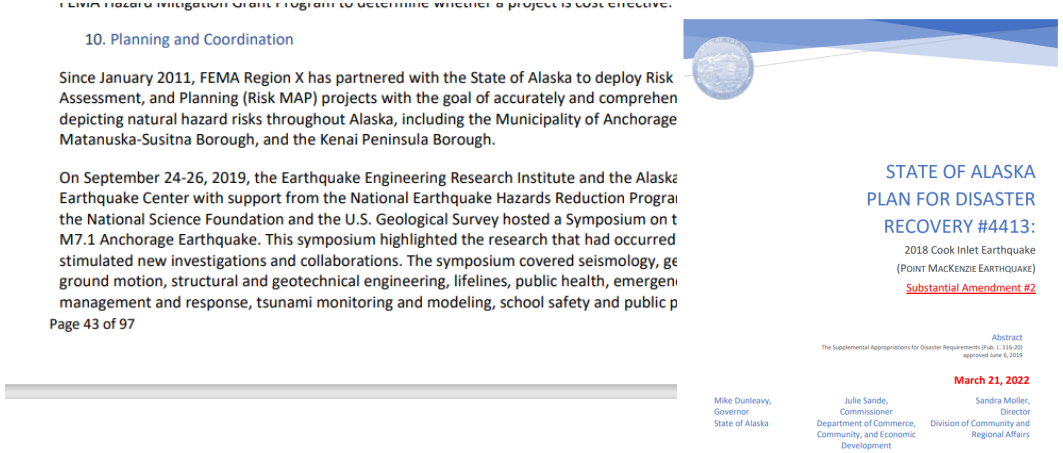
GRANTS ADMINISTRATION

Community Development Block Grant – Disaster Recovery (Alaska CDBG-DR)





HUD Disaster Block Grants



10. Planning and Coordination

Since January 2011, FEMA Region X has partnered with the State of Alaska to deploy Risk Assessment, and Planning (Risk MAP) projects with the goal of accurately and comprehen depicting natural hazard risks throughout Alaska, including the Municipality of Anchorage Matanuska-Susitna Borough, and the Kenai Peninsula Borough.

On September 24-26, 2019, the Earthquake Engineering Research Institute and the Alaska Earthquake Center with support from the National Earthquake Hazards Reduction Prograı the National Science Foundation and the U.S. Geological Survey hosted a Symposium on t M7.1 Anchorage Earthquake. This symposium highlighted the research that had occurred stimulated new investigations and collaborations. The symposium covered seismology, ge ground motion, structural and geotechnical engineering, lifelines, public health, emergen management and response, tsunami monitoring and modeling, school safety and public p

Page 43 of 97

STATE OF ALASKA
PLAN FOR DISASTER
RECOVERY #4413:

2018 Cook Inlet Earthquake
(Point MacKenzie Earthquake)
Substantial Amendment #2

Abstract

March 21, 2022

Mike Dunleavy, Governor, State of Alaska
Julie Sande, Commissioner, Department of Commerce, Community, and Economic Development
Sandra Moller, Director, Division of Community and Regional Affairs

goal of the symposium was to document the consequences of the earthquake and the res a broad range of post-earthquake investigations; identify important lessons learned; formulate an agenda for future research in earthquake science and engineering; and inform possible changes to public policy for earthquake safety.

In July 2021, the Earthquake Engineering Research Institute (EERI) published the EERI Reconnaissance Report: M7.1 Anchorage Earthquake on Nov. 30, 2018, which formally documented their observations of the 2018 Cook Inlet Earthquake. (Reference 2) This report is a multidisciplinary seismological and engineering report that presents the following:

Chapter 1, Introduction and Overview
Chapter 2, Seismology, Ground Motions, and Aftershocks
Chapter 3, Geotechnical Impacts (including Residential Structures)
Chapter 4, Reconnaissance Team Overview
Chapter 5, Nonstructural and Equipment Damage in Buildings
Chapter 6, Performance of Schools
Chapter 7, Performance of Hospitals and Health Care Facilities
Chapter 8, Impact on Transportation Systems (Public Infrastructure)
Chapter 9, Lifelines and Utilities (Public Infrastructure)
Chapter 10, FEMA Post-Earthquake Recommendations for Mitigation (Appendix B.)
Chapter 11, Conclusions, Lessons, and Risk Mitigation Recommendations

CDBG-DR Action Plan (Informed directly by FEMA Mitigation Strategy and EERI Lessons Learned)

Programs

2018 Cook Inlet Earthquake

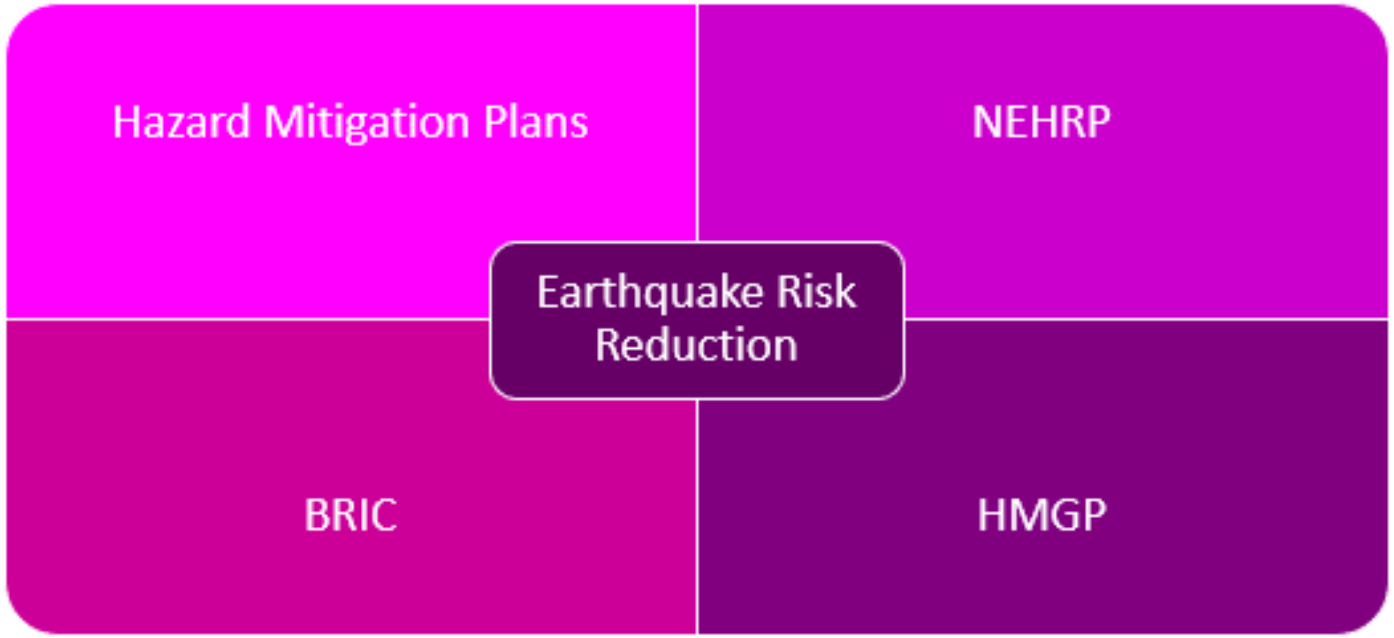
DCCED encourages all impacted homeowners to keep receipts for any repairs made on their home, to include insurance, Federal Emergency Management Administration (FEMA) and Small Business Administration (SBA) funds, to determine CDBG-DR funding eligibility.

- **Forest Park Optional Relocation Program**: Allocates $2.5 Million to provide housing assistance for residents of Forest Park. Maximum benefit is $50,000 per household for 24 months.
- **Indian (Alaska Native) Affordable Housing** - Provides assistance to Cook Inlet Housing Authority for new construction of affordable housing and permanent supportive housing.
- **HUD - Assisted Housing:** Under Revision. Provides assistance to conduct seismic studies, seismic/structural analysis and seismic retrofits or replacement of HUD assisted housing.
- **Home Repair Program**: Under Revision. Allows homeowners to have repairs made to their home including rehabilitation and/or replacement up to $200,000.
- **Local Buyout and Acquisition Program**: Under Revision. Local governments may buyout eligible homes at a post-earthquake fair market value to move homeowners in harm's way in Seismic Hazard Zone 4 or 5 and a FEMA Designated Special Flood Plain Hazard Area to a lower-risk area.
- **Local Infrastructure Program**: Under Revision. Repairs, enhances and restores infrastructure for local communities impacted by the 2018 Cook Inlet Earthquake as part of a comprehensive long-term recovery program.

Seismic Benefit Cost Analysis (BCA)

Exploring:

- Improvements to tool
- Quantifying benefits
- Seismic BCA Educational Materials
- Pursing Pre-Calculated Benefits
  - Soft-Story Structures
  - URM Schools



National Earthquake Technical Assistance Program (NETAP) Trainings

National Earthquake Program Managers Meeting 2022

Ginevra “Gigi” Rojahn, Applied Technology Council

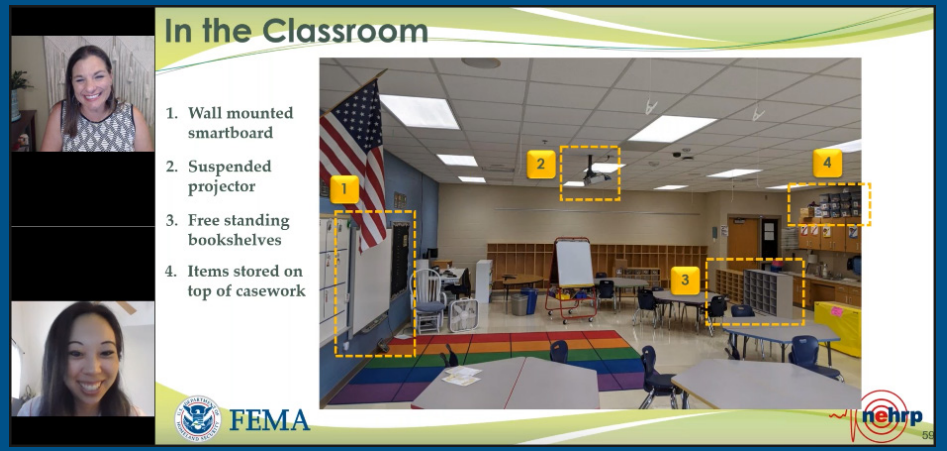
FEMA

ATC

Applied Technology Council

What is NETAP?

- Delivery of FREE trainings on earthquake risk reduction topics
- States/territories request specific courses
- Trainers and trainings material by NETAP
- Participants receive PDH certificates



FEMA

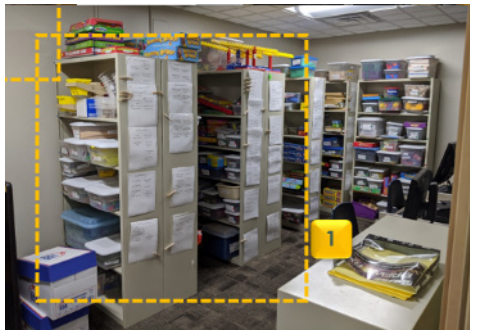
NETAP Course Topics

Reducing earthquake risks

- Hospitals
- Schools
- Residences

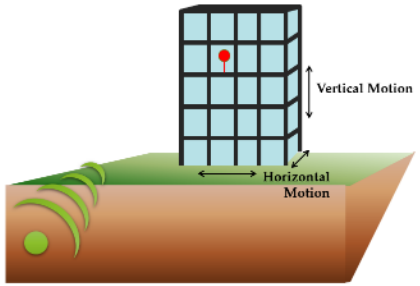
Spotting seismic hazards

- Structural
- Nonstructural



Understanding how buildings perform in EQs

- How earthquakes affect buildings
- Designing new buildings

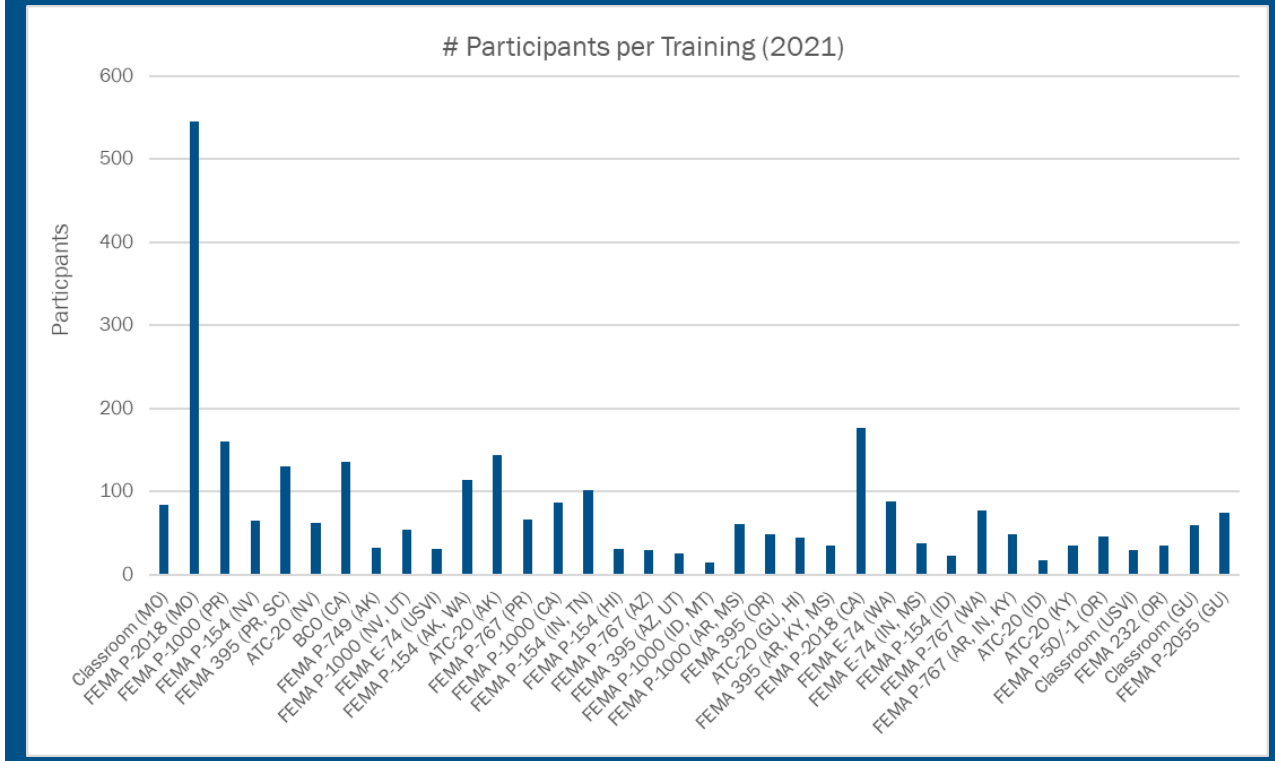


Conducting post-EQ safety assessment

- How to assess
- Planning, managing, & implementing programs

2021 Training Season

- Statistics
  - 20 states/territories participated
  - 36 trainings delivered, all web-based
  - Average of 80 participants/training
- States/territories were grouped into Course Sharing Zones
  - Nearly all requests granted



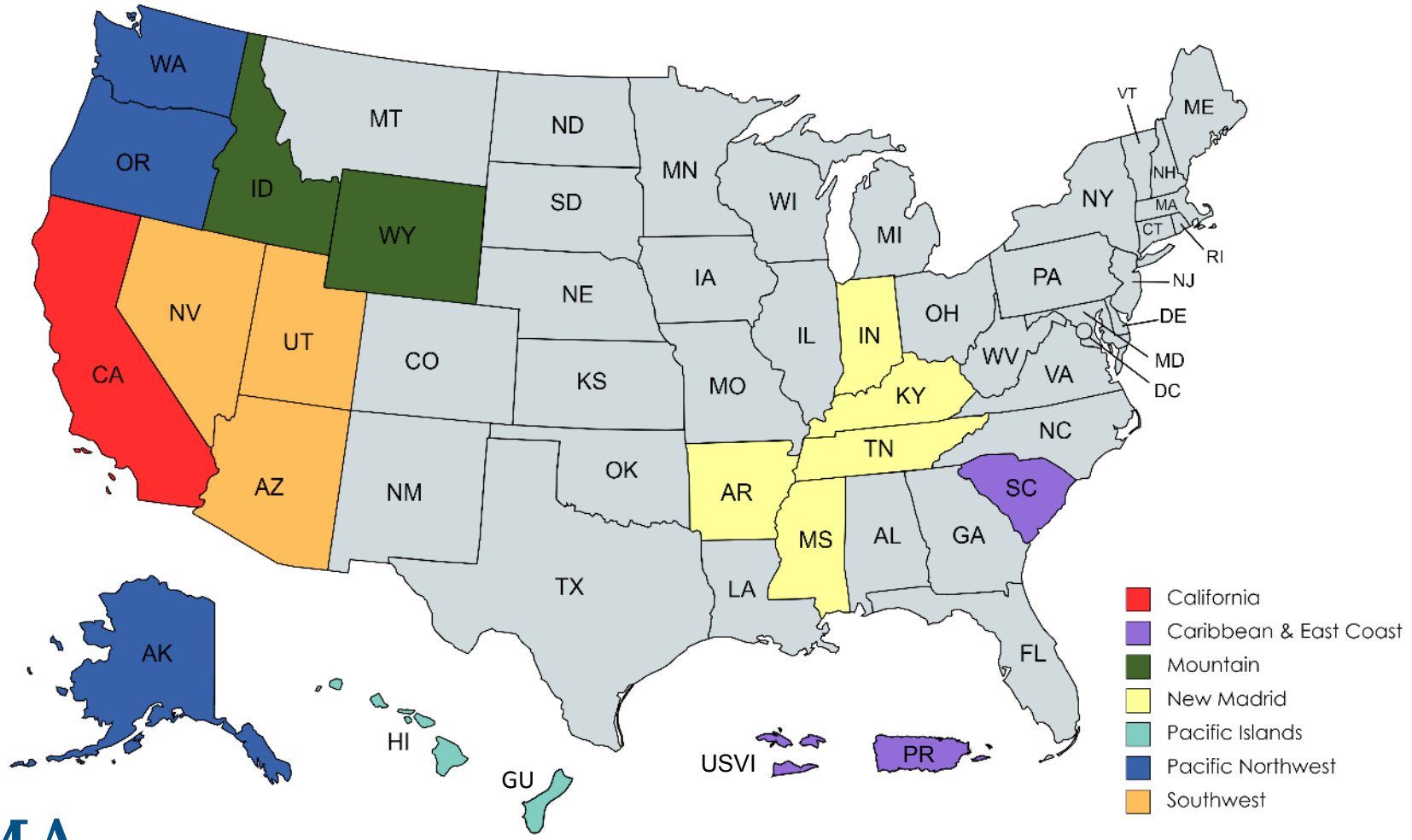
FEMA

2022 Training Season

- Hybrid in-person/web-based training delivery offered this year!
  - States/territories had the option of requesting in-person or web-based
  - 3 states requested in-person
- Statistics
  - 19 states/territories participating
  - 40 trainings planned (7 in-person trainings, 33 web-based)
- Improved accessibility

We're going back to in-person for the first time since 2019!!

Course Sharing Zones



FEMA

Top requested courses, 2022:

9 requests

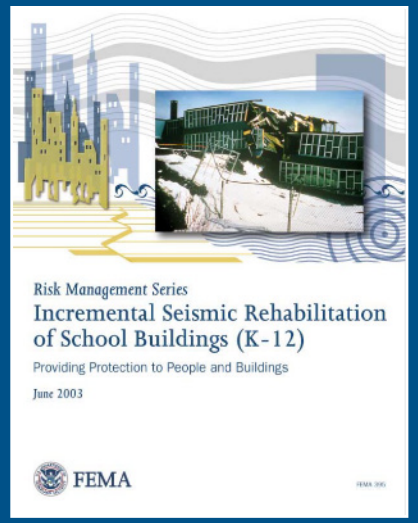
- FEMA P-154, *Rapid Visual Screening*
- FEMA 395, *Mitigation for Schools*

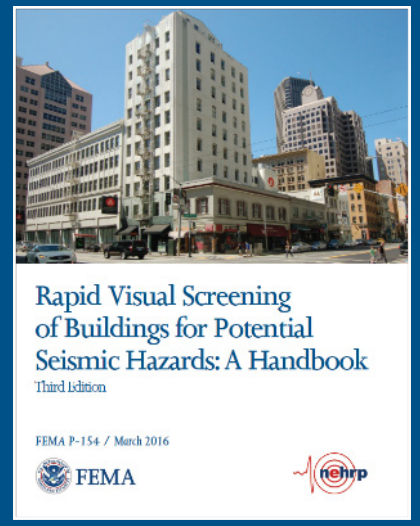
8 requests

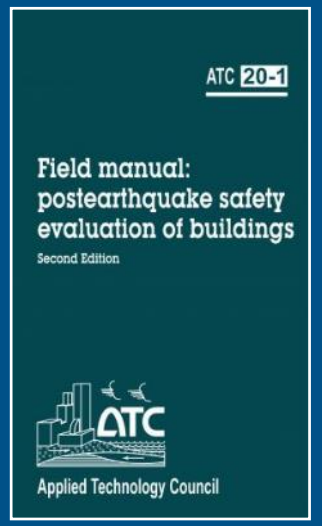
- ATC-20, *Postearthquake Safety Evaluation*

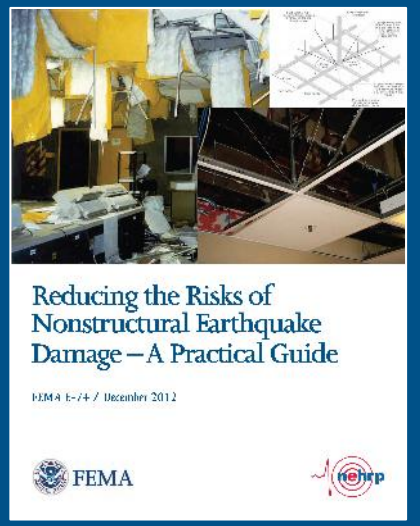
5 requests

- FEMA E-74, *Reducing the Risks of Nonstructural Damage*







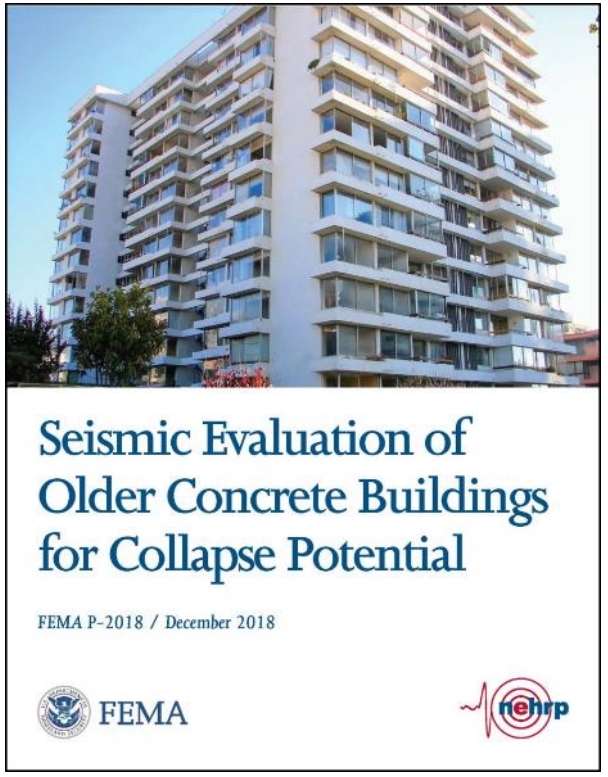


FEMA

New Course Spotlight!

Older Concrete Buildings: Understanding the Seismic Risk and Developing a Mitigation Program

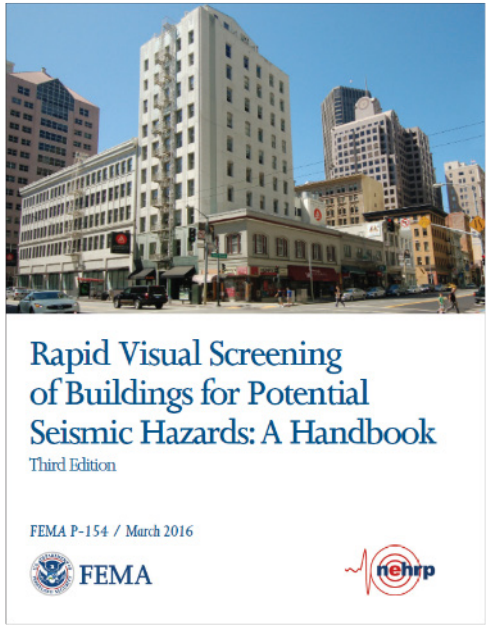
- Non-ductile concrete buildings
  - What they are and how they have performed in past earthquakes
  - Why addressing risk is important to a community's overall seismic resilience
  - Guidance for developing a mitigation program
  - Role of FEMA P-2018 within the overall process (technical engineering details are not discussed)

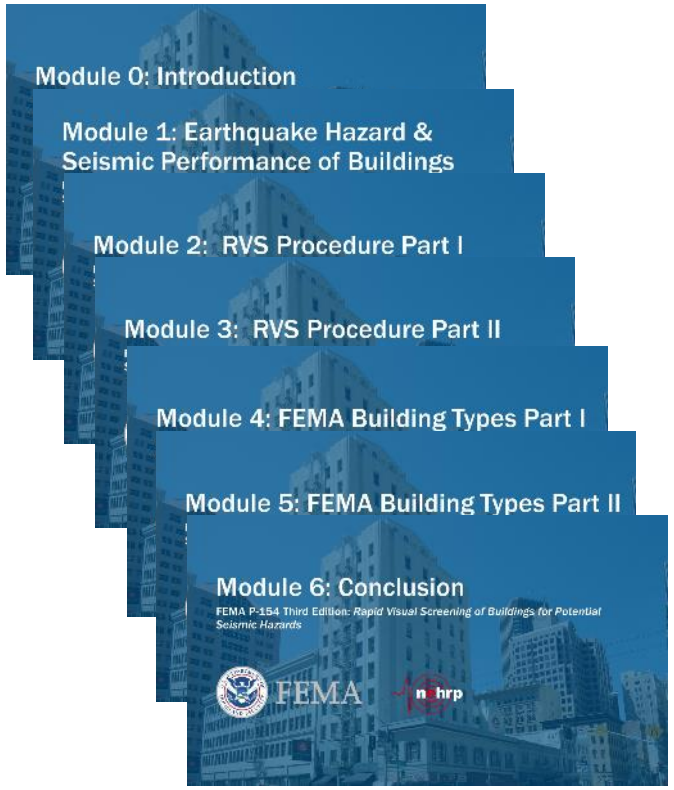


On-Demand Training Development

On-demand recorded training on **FEMA P-154, *Rapid Visual Screening of Buildings for Potential Seismic Hazard, Third Edition***

- To be posted on FEMA's website
- Highest requested course
- Relevant to jurisdictions across the country

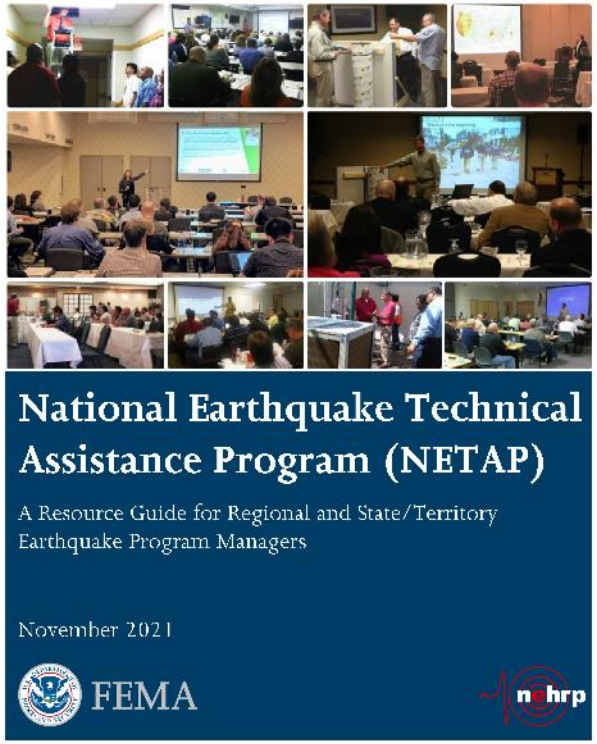




Thank you!

- Questions?
- Send any additional feedback/ideas/questions
  - Email Gigi at grojahn@atcouncil.org
- Learn more

  https://www.fema.gov/emergency-managers/risk-management/earthquake/training/netap



2022 National Earthquake Program Managers Meeting

--- END OF DAY 1 ---

Virtual Participants return March 31 at 8:00AM CDT