

2019 National Earthquake Program Managers Meeting
Salt Lake City, UT | April 22 – April 26, 2019
Meeting Notes

Meeting Participants:

Mulivanu Aiumu, American Samoa	Laura Kelly, Western States Seismic Policy Council
David Applegate, US Geological Survey	Noriko Kibble, FEMA
Aditi Archer, US GAO	Emily Kleber, Utah GS
Jason Ballmann, Southern California Earthquake Center	Cheickh Koma, FEMA Region VII
Brad Bartholomew, Western States Seismic Policy Council	Annie Laukaitis, Creative Engagement Solutions, LLC (CES)
Doug Bausch, NiyamIT	Jose Lebron, FEMA
Dan Belanger, Alaska	Brandon Lee, Anacostia Consulting Group
Karen Berry, Colorado Geological Survey	Denise Lewis, US Virgin Islands
Brian Blake, Central U.S. Earthquake Consortium	Mike Mahoney, FEMA
Colin Blaney, ATC	Ginger Martin, Georgia
Bill Blanton, FEMA	David Maurstad, FEMA
Hilda Booth, Arkansas	Natasha McCallister, Central U.S. Earthquake Consortium
Clark Brewer, FEMA Region I	Sean McGowan, FEMA Region VIII
Jeff Briggs, Missouri	Darlene Messina, FEMA Region III
Lara Brodetsky, Western States Seismic Policy Council	Kevin Miller, California
Steven Bruemmer, Elliot Workgroup	Bart Moore, FEMA Region VI
Steve Brukwicki, Kentucky	Justin Moresco, ATC
Heather Byers, Ohio	Chelsea Morganti, New Mexico
Denille Calvo, Homeland Security	Ines Pearce, Pearce Global Partners Inc./CREW
Bob Carey, Utah	Hugh Perry, South Carolina
Leslie Chapman-Henderson, Federal Alliance for Safe Homes	Ryan Pietramali, FEMA Region VIII
Sarah Chason, Federal Alliance for Safe Homes	Kevin Richards, Hawaii
Mike Conway, Arizona Geological Survey	Althea Rizzo, Oregon
John Crofts, Utah	Anne Rosinski, FEMA Region IX
Allison Curry, Indiana	Jesse Rozelle, FEMA
Lee dePalo, FEMA Region VIII	Daniel Ryan, FEMA Region V
Maximilian Dixon, Washington	Pascal Schuback, Cascadia Region Earthquake Workgroup
Luke Dodds, FEMA	Amanda Siok, FEMA Region X
Robert Feeley, Idaho	Robert Smith, Mississippi
Jonathon Foster, FEMA	LaTonya Stephens, Alabama
Justin Fournier, Northeast States Emergency Consortium	Adam Stewart, Tennessee
Angela Gladwell, FEMA	Patti Sutch, Western States Seismic Policy Council
Lora Goza, FEMA	Mai Tong, FEMA
Mike Harryman, Oregon	Heidi Tremayne, Earthquake Engineering Research Institute
Andrew Herseth, FEMA	Mariano Vargas, Puerto Rico
Natasha Jackson, Alabama	Seno Vseavea, Homeland Security
David Javier, FEMA	Matthew Wall, WSSPC
Kevin Kalbaugh, North Carolina	Cecil Whaley, Tennessee

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Jim Wilkinson, Central U.S. Earthquake Consortium
Jason Williams, Illinois
Kelly Williams, FEMA
Seth Wittke, Wyoming State Geological Survey
Janell Woodward, Nevada
Keily Yemm, Washington
Alesia Za Gara, Creative Engagement Solutions, LLC (CES)
Adam Zubowsky, Virginia

NEPM Day 1 – Tuesday, April 23rd, 2019

I. Welcome and Introductions – Bob Carey, Utah Earthquake Program Manager/NEPM Chairman; Kris Hamlet, Director, Utah Division of Emergency Management; Lee dePalo, Regional Administrator, FEMA Region VIII; Dave Maurstad, Deputy Associate Administrator, Federal Insurance and Mitigation Administration, FEMA; Dave Applegate, Associate Director for Natural Resources, USGS

Bob Carey began the meeting by thanking everyone for attending. He discussed the agenda and welcomed his Directorate, Chris Hamlet.

Chris Hamlet introduced himself as the State Director of the Utah Division of Emergency Management. He had been in emergency management for 24 years and had been with the directorate for six years. Chris added that last week was the Utah ShakeOut which had over 1 million participants. He concluded by stating that there was an excellent culture of preparedness in Utah and introduced the next speaker, Lee DePalo.

Lee DePalo introduced himself as the Regional Administrator for Region VIII. Lee presented on the resilient Wasatch Front of 2023. By 2023, they planned to implement the Brick by Brick Program to the Wasatch Front, enhance a private sector outreach and integrated response plan, and identify opportunities and strategies to enhance the resilience of critical infrastructure. There had been inter-division collaboration led by mitigation and response to save lives, minimize damage to infrastructure, and reduce response demands along the Wasatch Front. The financing, policy, and partnerships that would reduce unreinforced masonry included the URM Summit, promoting earthquake insurance, and a model mandatory URM ordinance. Lee then noted the private sector outreach and response planning included activities such as engaging the private sector and integrating public and private catastrophic planning. Lee concluded his presentation which can be accessed [here](#) and thanked everyone for attending NEPM.

David Maurstad noted that he was the Deputy Associate Administrator for FEMA. He thanked everyone for their help in putting this event together and expressed his appreciation to Lee for all the work that he was doing on the Wasatch Fault. He added that FEMA saw itself as one link in the critical chain of influencers who could enhance the country's ability to adapt to events. Strengthening the nation's ability to ensure limited loss was a FEMA key priority. David believed that FEMA's strategic plan would help meet this challenge. He then addressed three acts that the government has passed in the last year:

1. The NEHRP Reauthorization Act
2. The DRRA
3. The Bipartisan Act

David noted that another program at FIMA was currently in the reauthorization process. The act provided several changes that would allow a multi-agency approach. As FEMA continued to work for other federal agency partners, the act mandated that FEMA would emphasize the importance of reducing risk and improving overall community resilience. David added that FEMA was working with federal partners on a long-range plan. He then discussed important measures that had been taken recently. One such measure was legislation signed by the President which showed a means to reduce the complexity of FEMA and build the nation's resilience for the next catastrophic event. He then noted that the DRRA provisions were being

implemented through a range of rulemaking, policies, and reports. Some of the provisions had already been implemented while others would take several years to be passed. David added that the US Geological Survey was currently building out an earthquake alert called “Shake Alert” in California, which might be expanded to other states. Earthquake early warning projects departed significantly and raised questions on topics like eligibility. FEMA and HMA Grants Policy staff were working diligently through these issues, concerns, and challenges. DRRA also recognized the benefits of pre-disaster mitigation as demonstrated in section 1234. David added that BRIC was a generational, game changing initiative that would be funded at \$5-6 million a year. With this reliable system of funding, communities and states would now be able to plan and execute for a disaster. DRRA would help save lives, reduce long-term cost, and contribute to a cost of preparedness.

David then noted that section 1235 of the Stafford Act specifically addressed how FEMA defined the word “resilience.” This was intended to demonstrate one federal government definition that could be consistent. The DRRA section 1231 dealt with BS assessment teams. The BSB partnered with ATC to ensure the structural integrity and habitability of buildings and structures. FEMA was also excited for the federal cost share. This provision encouraged states to adopt the latest building codes. David stated that he encouraged everyone to learn about these state activities and visit with them. David concluded by extending his thanks to everyone, especially the earthquake program managers.

Bob introduced David Applegate who thanked everyone for letting him present. He was impressed by the partnership they had enjoyed with FEMA over the years. David reiterated David Maurstad’s statement by saying that this was an exciting time for both the earthquake endeavor and the mitigation passage of DRRA. There had been a great opportunity for USGS to sit down with FEMA and talk about the possibility of expanding efforts to create earthquake early warnings. Currently, the focus was on California, Oregon, and Washington. David then expressed that USGS was very pleased to see the reauthorization of NEHRP. It had been 10 years since the last reauthorization lapsed. It was a statement that was a part of Congress that this was an important issue. The federal government invested in science and technology, and the fruits of those investments must be used effectively. David expressed that was the heart of it for NEHRP, whereas seeing that science used was the heart of it for USGS. USGS had worked on a wide range of hazards. They supported NOAA responsibilities for many hazards. The seismic efforts fed into many warning centers. The foundation for USGS was the monitoring capabilities and the expertise that made it possible to deliver long-term hazard assessments to help the emergency management community do its job as well as possible. David concluded by noting that when USGS wants to convey the significance of these events, they must do it in a way that is meaningful to people.

I. FEMA P-1100: Vulnerability-Based Seismic Assessment and Retrofit of One- and Two-Family Dwellings

Mike Mahoney introduced the training portion of FEMA P-1100: Vulnerability-Based Seismic Assessment and Retrofit of One- and Two-Family Dwellings. Mike then welcomed Colin Blaney from ATC as one of the key people involved in the creation of this publication.

Colin began the FEMA P-1100 training session. Key topics that were discussed included: Pre-standard purpose, scope, and documents; Why vulnerability-based, and what’s covered; Looking ahead, next steps; Performance objective; Introduction to evaluation and retrofit methods; Prescriptive and simplified engineering retrofits; Leveraging prescriptive solutions;

Permitting and building department approval; Introduction to (Ch.4, 5, 6 and 7); Preview of updates to FEMA 530. The FEMA P-1100 training can be accessed [here](#).

Questions:

- Someone asked if this was geared towards the small, villager community.
- Colin responded absolutely; the goal was to make this very simple.

II. 10:00 – 10:20: Break

III. FEMA P-1000 Training Continued

Colin continued the training on FEMA P-1100.

Questions:

- David Javier asked if there had been any costs associated with these actions.
- Colin responded that there had been one, the pre-earthquake cost, but that it would total less than the cost of post-earthquake. The barrier was averaging \$4 or \$5 thousand to get the work done. One take away was that if the engineering was imbedded, it would save costs.
- Someone asked if Colin had visualizations of the zipper effect.
- Colin replied that he did, and he would share them.

IV. State/Territory Update

Nevada, Janell Woodward

Janell began her presentation on the State of Nevada Earthquake Awareness Billboards. Nevada created billboards to generate public awareness on earthquake safety. The project goals included public outreach and education, reducing the loss of life and injuries, and reducing the possibility of damage and losses due to earthquakes. The total funds were projected to \$35,123 and they currently had billboards in 22 locations, both street and highway. This was a WSSPC managed project and with more staff and time, they planned to host a design contest and encourage public participation. Janell presented an example of one of their billboards before concluding her presentation which can be accessed [here](#).

Questions:

- Someone asked how Nevada measures the success of their billboards.
- Janell responded that the billboard companies gave statistics on who drove past each billboard. They also asked the general public.
- Someone else asked if they used billboards to boost ShakeOut.
- Janell responded that she did not know the answer to that question.
- Someone else asked about school participation in ShakeOut.

- Janell replied that it was mandatory for schools to participate.
- Someone else asked how they make it mandatory for schools to participate
- Janell responded that she didn't know because she didn't handle that part of her program.

Washington, Maximilian Dixon

Maximilian presented on the Washington Emergency Management Division Earthquake Safety Projects for 2019. Maximilian began by discussing ShakeOut project goals which included increasing participation, reaching new audiences, engaging new stakeholders, emphasizing earthquake early warnings, and developing new products which can be shared with partners. Maximilian noted that they were focusing on involving youth with ShakeOut through the creation of video projects with the help of CREW. He then noted that the state had created a manual for Tsunami Vertical Evacuation Structures (TVE) in order to help promote tsunami safety. Maximilian discussed the creation of a White Paper on earthquake protective actions to support education and training on earthquake early warning and to use as a base to support unified messaging for protective actions. He then shared a video that was created by a partner to inform the public on earthquake safety. Maximilian's presentation can be found [here](#).

Questions:

- Someone noted that the White Paper was a great resource.

Hawaii, Kevin Richards

Kevin began the presentation by noting that Hawaii was not well staffed. He thanked Tennessee for giving one of their staff members to Hawaii. He also thanked those states which sent EMAC staff to help Hawaii during their recent natural disasters. Hawaii recently had three hurricanes and volcanic activity. Roughly 800 homes built on the side of the volcano were destroyed. Many people were insured, however, there were limited places for people to stay after the volcano. Kevin noted that Hawaii always brought in short term support in parallel with FEMA's long-term support. In the past, this worked well, but after this volcano, FEMA did not cooperate with this system.

Questions:

- Someone asked how many people were directly impacted by the volcanic activity.
- Kevin answered that he believed 15-20,000 people were impacted.

Oregon, Althea Rizzo

Althea presented on the Oregon Geological Hazards Program, a NEHRP Direct States Assistance grant funded project. Something that the state had implemented is the Train the Trainer Program for FEMA P-50 and FEMA P-50-1. This project focused on seismic retrofits of homes that allowed people to stay safely in their homes during an earthquake. Three individuals were given the training course so far, and they went on to teach the course in Medford, Bend, and Baker City.

Another NEHRP Direct States Assistance Grant funded project Oregon was working on was an earthquake comic book series. It would be in both English and Spanish to reach out to both Spanish and English-speaking populations. They partnered with Dark Horse Comics to make a complete set of earthquake and tsunami comics.

Althea then discussed the state's tsunami evacuation drill guidance and their upcoming Tsunami Conference. Oregon created a Blue Line Project to improve tsunami evacuation as well as tsunami evacuation signage guidance. Althea's presentation can be accessed [here](#).

Questions:

- Someone asked who the target audience was for the Dark Horse Comics.
- Althea answered that teens and young adults were the target audience.
- Someone commented that New York created a comic book hero called Ready Girl and suggested investigating it further.
- Someone appreciated the Blue Line Project.
- Someone asked how they were able to implement the Train the Trainer project.
- Althea answered that they used some of their funding to pay for it, but a lot came from FEMA.

V. 12:00 – 1:00: Lunch

VI. Briefing on NEHRP Reauthorization and FEMA NEHRP Update

Bill Blanton began the briefing on NEHRP Reauthorization and FEMA NEHRP Updates. Bill discussed the NEHRP Reauthorization Act of 2018 passed by Congress on November 27, 2018 and signed into law by the President on December 1, 2018. The Act authorized appropriations for NEHRP from FY 2019 to FY 2023. Bill then noted changes which included:

- Alignment of FEMA State Assistance Grant Program with existing non-disaster grant programs.
- Requirements from NIST and FEMA to convene a panel of experts “to assess and recommend options for improving the built environment and critical infrastructure...”
- Simplification of the original nine areas of responsibilities for FEMA to five.

Bill then noted the FEMA staff and concluded his presentation by introducing Angie Gladwell, the Deputy Assistant Administrator Risk Management for FEMA/FIMA.

Angie began her portion of the presentation by listing the National Mitigation Investment Strategy (NMIS) goals. These were:

- Goal 1: Demonstrate How Mitigation Investments Reduce Risk
- Goal 2: Coordinate Mitigation Investments to Reduce Risk

- Goal 3: Establish Mitigation Investment as a Common Practice

Angie proceeded to note FEMA strategic goals and the FY19 RMD strategy which included:

- FEMA Strategic Plan
 - Build a Culture of Preparedness
 - Ready the Nation for Catastrophic Disasters
 - Reduce the Complexity of FEMA
- FY19 RMD Strategy
 - Priority 3: Risk Reduction Strategies and Plans

Angie concluded her presentation by thanking everyone for their attendance and introducing the next speaker, David Javier. Bill and Angie's presentation can be found [here](#).

David presented on new NEHRP initiatives for 2019. His first point addressed the creation of a FEMA Intra-Agency Earthquake Working Group. Some of the intentions of this working group included:

- Bringing together all elements within FEMA associated with the Agency's earthquake efforts
- Facilitating the coordination and collaboration on outreach, exercises, plans and grants
- Supporting the Administrator's guidance and FEMA Strategic Plan, Strategic Goal III, Reducing the Complexity of FEMA

The plan was to establish the Intra-Agency Working Group and have a draft Collaboration Strategy available by December 31, 2019. In addition to creating a strategic plan for agency-wide collaboration, the group would address two specific actions in CY 2019: promoting the purchase of earthquake insurance and the development of a plan for enhancing the resilience of Lifelines.

Another initiative David noted was the development of a FEMA Earthquake Insurance Promotion Strategy. FEMA was working internally to develop a strategy and was taking initial steps including:

- The promotion of EQ Insurance now an allowable activity for NEHRP Grants.
- The development of promotional materials.

A listening session was intended to be conducted later in the year. David added that the goal was to increase the purchase of earthquake insurance nationally by 5% by 2025.

Finally, David introduced the initiative to enhance the resiliency of lifelines. This initiative addressed requirements for developing and disseminating seismic design guidance on lifelines infrastructure as contained in the NEHRP law. The initiative would also build on the recent FEMA 2019 Annual Planning Guidance that prioritizes "Advancing Community Lifelines through the FEMA Strategic Plan." The plan was to address lifelines infrastructure by working with ORRA and elements of Resilience (such as the new Building Resilient Infrastructure and Communities program) through the newly created Intra-Agency Working Group and assisting them in their efforts to improve the preparedness of lifelines and FEMA's response and recovery from lifeline damages after disasters. They also planned to initiate a new contract to investigate

and implement lifelines infrastructure-related topics as identified in the NEHRP lifelines infrastructure strategic plan; *Earthquake-Resilient Lifelines: NEHRP Research, Development and Implementation Roadmap*.

David concluded his presentation and introduced the next speaker, Jon Foster. David's presentation can be accessed [here](#).

Jon began his presentation on NEHRP state assistance grant programs. He discussed the tasking timeline for the 2019 year and the changes to the NEHRP State Assistance Grant Program. The new allowable activity of earthquake insurance had changed and FEMA would pay for state attendance to NEC 2020. Jon then noted earthquake Consortia and Partner state support. FEMA planned to eliminate the state support component of NEHRP but would continue to provide Federal funding to specific regional Earthquake Consortia and Partners that possessed the critical skills necessary to develop and implement regional (multi-state) and/or national earthquake risk mitigation activities. Jon's presentation can be found [here](#).

Mike Mahoney then began his presentation on updates to the FEMA Earthquake Program. Mike noted that the recent NEHRP reauthorization, P.L. 115-307, included a new Section 5 Seismic Standards that required NIST and FEMA to perform the following:

- Not later than December 1, 2019, ... jointly convene a committee of experts from Federal agencies, nongovernmental organizations, private sector entities, disaster management professional associations, engineering professional associations, and professional construction and homebuilding industry associations, to assess and recommend options for improving the built environment and critical infrastructure to reflect performance goals stated in terms of post-earthquake re-occupancy and functional recovery time.
- Report to congress. —Not later than June 30, 2020, submit a report on recommended options for improving the built environment and critical infrastructure to reflect performance goals stated in terms of post-earthquake re-occupancy and functional recovery time.

Mike then added that NIST and FEMA have held coordination meetings and have developed a plan to meet this requirement:

- NIST and FEMA were working to identify members of the Committee of Experts.
- FEMA would fund the work of the Committee of Experts during the current fiscal year to collect information and develop an outline.
- NIST would fund a series of public events to collect input and prepare the report in FY 2020.
- NIST would then submit the report to Congress (after internal Commerce and OMB approvals).
- Finally, FEMA would publish the final report for public distribution.

Then Mike gave an update on Model Building Codes and noted that the 2021 ICC Code update cycle was now underway and presented a timeline:

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- For this year, the codes being updated included IBC Structural, IEBC, IRC Building, ICC Performance Code, and others.
- SCSC submitted 10 code change proposals by the 1/19 deadline.
- The Code Action Hearing (CAH) would be held April 28-May 8, 2019. SCSC would have positions and testimony on almost 100 code change proposals.
- Public Comments on the code change proposals and the recommended actions were then due in July, and the Public Comment Hearing (PCH) would be held October for full ICC membership balloting.

Mike discussed FEMA P-58, Existing Building Guidance, and Homeowner Outreach Guide. He then presented a guide for the Repair of Earthquake Damaged Buildings to Achieve Future Resilience. The main points were:

- The repair of earthquake damage was a critical component to the recovery of a community after an earthquake disaster and in turn the overall resiliency of a community. However, guidance on repair of earthquake damage was both limited and dated.
- Following the 2011 Christchurch earthquake, New Zealand devoted considerable resources to developing repair guidance to improve resilience. This information would be imported into the new guide on the improvement of building design to promote resilient behavior after an earthquake and simplify repair.

Mike concluded his presentation which can be found [here](#).

Mai Tong began his presentation on lessons learned, new knowledge and research results to improvements of building codes, standards and design practices. Mai discussed the development of the 2020 NEHRP Recommended Seismic Provisions and New Seismic Design Maps that include:

- Recommendations of Project 17 Committee for the new Seismic Design Maps
 - Continue with the Risk-Targeted Maximum Considered Earthquake - MCE_R
 - Revise the deterministic ground motions for near fault areas
 - Adopt twenty-two points multi-period design spectra
- USGS 2018 National Hazard Model
 - Implemented NGA East models
 - Incorporated new modeling of basin effects for Los Angeles, Seattle, San Francisco, and Salt Lake City regions.
- PUC Revision of Soil Classification
- Add new subclasses of soils BC, CD, and DE

Mai then discussed FEMA P-2012 before concluding his presentation. His presentation can be accessed [here](#).

Luke Dodds began his presentation on the DRRA Section 1233: Earthquake Early Warning. Luke noted that HMGP and PDM/BRIC assistance may be used for improvements such as:

- Regional seismic networks;
- Geodetic networks
- Seismometers, Global Positioning System receivers, and associated

infrastructure

- FEMA in early stages of coordination with USGS, states, and other stakeholders
- Challenges and questions included:
 - Benefit cost analysis
 - Alert generation and dissemination vs seismic sensing and associated infrastructure
 - Framework for interagency coordination
- Timeline for milestones and deliverables still being worked on

Luke then noted that recipients of hazard mitigation assistance provided under [section 404] and section 203 could use the assistance to conduct activities to help reduce the risk of future damage, hardship, loss, or suffering in any area affected by earthquake hazards, including:

- (1) improvements to regional seismic networks in support of building a capability for earthquake early warning;
- (2) improvements to geodetic networks in support of building a capability for earthquake early warning; and
- (3) improvements to seismometers, Global Positioning System receivers, and associated infrastructure in support of building a capability for earthquake early warning.

Luke concluded his presentation and introduced the next speaker, Drew Herseth. Luke's presentation can be found [here](#).

Drew Herseth began his presentation on building code related provisions in the DRRA and BBA. He reiterated that there were three new legislative implementations. There was also talk about the new FEMA Strategic Plan which would include building a culture of preparedness as goal one. Within that, objective 1.1 was to incentivize risk. Drew referenced objective 1.1 from his presentation which stated:

FEMA would continue to work directly with SLTT and non-governmental partners to advocate for the adoption and enforcement of modern building and property codes. Disaster resilience started with building codes, because they enhanced public safety and property protection. Furthermore, FEMA would encourage robust code enforcement and provide education and training when needed to help convey the value of standardized, up-to-date building codes.

Drew then noted that the Bipartisan Budget Act did something that FEMA had talked about doing for years. It incentivized the adoption codes. The Cost Share Initiative was in place for years, and then Congress codified it by passing a law that allowed the President to increase the cost share based on a few things that communities or states could do. This amended the Stafford Act in two places in the DRRA section 1206. FEMA public assistance was now allowed to come in post event and provide local government assistance in a post-disaster environment. The other amendment to the Stafford Act added base and overtime wages for extra hires to facilitate this recovery period for up to 180 days in section 406d.

Drew then discussed DRRA section 1234, also known as the building resilient infrastructure and communities (BRIC). The two paragraphs about latest published editions were included in this section. This section also covered that it was an allowable activity for pre-disaster mitigation. States and communities that had adopted the latest published additions would be the first ones looked at when awarding these grants. They could even be offered a higher ranking, but there

was still a lot of work left to be done, so this wasn't certain. Drew noted that the term "latest published editions" was defined in this law and could be found in the Stafford Act as "the two most recent editions." The definition, "latest published editions," would expire on October 5th, 2021.

Drew proceeded to explain another amendment to the Stafford Act in section 406 which authorized FEMA to provide public assistance funding to replace and restore disaster damaged facilities to the standards of the latest published editions of codes. Drew then noted procedures for DRRRA Section 1241 (a). These included:

- Publishing guidance (including best practices) on conducting post-disaster building safety assessments, specifically related to structural integrity and livability.
- For example, ATC-20 (earthquakes) and ATC-45 (flood/wind) for Post-event Safety Evaluations of Buildings that resulted in green (inspected), yellow (restricted use) and red (unsafe) tagged buildings.
- 50% draft review completed in March. Final publication due Oct 2019.
- 1241(b) was being led by the FEMA NIC and required the functions of post-disaster building safety assessment to be accurately Resource Typed within the National Incident Management System (NIMS).

Drew thanked everyone and concluded his presentation which can be accessed [here](#).

Sean McGowen began his presentation on Brick by Brick by telling a story about a house that was caught in the eye of Hurricane Michael. The house was built to code and withstood the storm. However, all its surroundings were damaged by the storm, leaving the house location undesirable. This example highlighted the need for all houses to be built to code as well as the reality that many are not. In Region VIII, there was a 43% chance that a 6.75 earthquake would be seen in Utah in the next 50 years. The number went up to 57% for a 6.0 earthquake. These would cause devastating effects because there was so much unreinforced masonry. In Salt Lake City, over 30,000 buildings had unreinforced masonry, and on the Wasatch Front there were over 147,000 buildings. Reinforcing these buildings was an easy fix from an engineering standpoint, but the economic standpoint would need to be overcome.

Currently, there was a large-scale resilient Wasatch Front effort between resilience and response. Region VIII was hosting a URM seminar this summer to work on mitigation strategies. A diverse group consisting of engineers, emergency managers, public officials, civic organizations, churches, and philanthropic groups would attend to work on these efforts. Region VIII wanted to work together with these groups on grants to push this forward and look at what other Regions and States had already done. The three things that Region VIII wanted to get people talking about after the summit are:

- The cost of funding opportunities.
- How could those funding opportunities be found?
- How to gain by and locally.

Sean concluded his presentation by stating that Region VII wanted to enhance private sector outreach and integrate response planning by identifying opportunities and strategies to enhance

the resilience of critical infrastructure. Sean's presentation can be found [here](#).

Amanda Siok began her presentation on the 2018 Alaska earthquake. At the end of November 2018, there was a 7.1 earthquake in Alaska. There was great collaboration and response in Alaska that included:

- FEMA Regional Response and Coordination Center (RRCC) Level 1 Activation to coordinate with State of Alaska.
 - IMAT deployed to State Emergency Operations Center
- Deployment of National Incident Management Team (IMAT) to State Emergency Operations Center.
 - Command and Support Role (Not in field)
- EERI Clearinghouse Nightly Calls.
- FEMA, State, Locals conducted Preliminary Damage Assessments together.

Additionally, right after the event, they ran Hazus level 1 with the data from the first ShakeMap. This was used along with the states response plan to inform mass care needs, sheltering, potential medical needs, and stage sites for logistical operations. The Hazus was run a second time with the updated ShakeMap from the earthquake and their results were not what they expected. Region X planned to have a call with the Pacific Northwest Hub to work through these issues.

Amanda then discussed the importance of building codes. It was a huge success that no deaths were caused by this earthquake. However, many homes were damaged by the earthquake. FEMA inspectors were brought in and did abbreviated training on what earthquake damage looked like. However, there were a few issues with the local level red tagging buildings.

Amanda noted that Alaska had limited earthquake policies. Only about 20% of people had coverage during the earthquake which was very low. Additionally, there was a very high deductible. In Alaska, the event period was the date of the earthquake plus 72 hours. There were over 3,000 aftershocks which would not be covered by insurance. Educating state constituents on earthquake insurance was very important. Amanda then discussed four different types of reports that Region X was considering developing:

- Community Outreach and Education
- Support 406 Integration and Implementation with Public Assistance (PA)
- Seismic performance assessments and recommendations to inform recovery and mitigation projects
 - Collecting and analyzing results of State code inspections of critical facilities
 - Reviewing performance of mitigation projects previously completed
 - Assessing building performance based on building codes
 - Validating results of Rapid Visual Screenings conducted for school buildings and understanding limitations to mitigation actions.
- Training- Maximizing Mitigation and E-74 Reducing Non-Structural Damages

Amanda concluded her presentation by noting next steps such as compiling the information they had gathered for the states and presenting them nationally. Amanda's presentation can be accessed [here](#).

Questions:

- Someone asked if there were there any hospitals or health care facilities effected by the earthquake in Alaska. If so, what lessons were learned from that?
- Amanda responded that a lot of hospitals were impacted particularly by flooding. A lot of the boilers had been retrofitted to be secured down but weren't attached to anything which caused them to move around. The state level inspection of critical facilities was identified as a process that needed improvement. The process needed to be broadened to expand it from fire code only to include seismic.
- Someone asked if the strategy was a joint strategy for FEMA at the state. They also asked if there was an option for buyouts.
- Amanda responded that it was a joint process between the state and FEMA. They had looked at the Napa Earthquake Mitigation Strategy, which was available online. In response to the second question, Amanda did not believe that there was an option for buyouts. They had looked at substantial damage for flooding. If a home in the floodplain was substantially damaged by the earthquake, that could trigger those requirements. There were a lot of floodplains in Alaska, but because of GIS and some smart people, there were only about 20 parcels, three of which had holes but were not substantially damage.
- Althea had a question about the insurance. The most common deductible was 20% of the value of the home, but many homeowners realized that retrofitting costed a lot less than that 20%. Had Alaska considered allowing a homeowner to buy down on the deductible if they retrofitted their home or business? Althea found that the value of earthquake insurance had a lot of economic disadvantage.
- Mike Mahoney responded that when there was more control over the retrofit, the CEA had more faith that the retrofit fitted properly. Outside of California, states weren't comfortable recognizing retrofitting because they didn't know if it was done properly. There was a long way to go with the private insurance companies before that point could be explored.
- Someone asked if they were looking at any associations to join committee. Was there room for a local to be on the committee?
- Mike answered yes, they were requesting that associations be on the committee. However, the local builders told the associations what to say so there wasn't room for a local to be on the committee. With the association representative, a broad spectrum of opinions would be given as opposed one local person who may not actually represent the association.
- There was a question regarding competitive loss. What were some of the variables that would be looked at following a seismic event for potential buyout?
- Mike responded that the only place with a competitive earthquake loss was San Fernando Valley. Regarding buyout, the location wasn't generally the problem unless it was sitting on top of a fault. In California, there were already laws in place for this.
- Althea remembered Amanda mentioning that earthquake insurance companies switched from main shock to aftershock. Was there any way to get the insurance companies to acknowledge this?
- Amanda responded that every state did their earthquake insurance differently, and each

had different lengths of event periods. David Maurstad was on his way to Alaska to meet the state insurance initiator and start this conversation. These concerns were heard, and FEMA was pushing on this.

VII. 3:00 – 3:15: Break

VIII. General Session Presentations

- Great ShakeOut Campaign and Media/Social Media – Maximilian Dixon, Washington State Earthquake Program Manager

Maximilian Dixon began his presentation on the Great ShakeOut Campaign and Media/Social Media. The previous year, ShakeOut participants increased by over 100,000 people. NEHRP funding was essential for ShakeOut; they wouldn't be able to make do it without it. Maximilian thanked David Javier and Jon Foster for changing the date to August 1st so that Washington could be awarded funding. The goals of ShakeOut were then noted which include:

- Increasing participation
- Engaging more students with the youth video contest
- Reaching new audiences
- Incorporating Earthquake Early Warning
- Developing new products which can be shared with partners

Maximilian explained that the video contest was a success and gave kids a chance to learn about the hazards of earthquakes. Maximilian and his team also collaborated with a local radio station that discussed earthquakes during on their show. Teens created radio ads about earthquakes that played on air to raise awareness.

In another outreach effort, the state spent \$3,000 to raise awareness through social media. They reached 380,134 people through methods such as Facebook Live, social media ads, and posts. Some of the topics they discussed included ShakeOut, World Tsunami Day, and earthquake anniversaries.

Maximilian concluded by discussing the interviews they gave to increase earthquake awareness. He then noted some tips for success that include:

- Send talking points
- Practice ahead of time
- Check yourself and surroundings
- Don't rush
- Stick to what you know
- Always follow up

Maximilian's presentation can be found [here](#).

Questions

- Someone asked what social media platforms the state used.
- Maximilian responded that they used Facebook, Twitter, and Reddit.

- Someone asked who they sent their prepared talking points to.
- Maximilian responded that for new or controversial topics, he worked with his PIO for talking points before emailing them to the interviewers.
- Someone asked how they recruited schools and kids for the video contest.
- Maximilian replied that while they used social media and flyers, their school's liaison was their biggest asset. She was a contractor with OSPI and had connections with many schools.
- Someone said that they found it helpful to communicate with the reporter beforehand about what questions they planned to ask.
- Maximilian responded that they agreed. After reviewing the questions, he would send them the talking points.
- Brian Blake ShakeOut presentation

Brian Blake introduced himself and noted that he would be presenting on improving ShakeOut participation for grades K-12. In Brian's Region, CUSEC coordinated ShakeOut activities in 23 states, the Commonwealth of Virginia, Kentucky, and the District of Columbia. 75% of their participants in ShakeOut were K-12. Brian's team defined critical counties for outreach in school participation as schools that had a moderate to high seismic area according to the USGS. 14 of the 23 states that had moderate seismic risk had only 28% of students participating. CUSEC came up with some goals to increase participation such as improving the focus on critical counties and increasing K-12 participation to 35%. After a lot of hard work, they were able to meet their goal and increase their participation to 35%. Brian left the group with three takeaways before concluding his presentation:

- It takes a village.
- Prioritize your outreach/strategy.
- Measure what is important to you.

Brian's presentation can be found [here](#).

- **Fix the Bricks – Audrey Pierce, Salt Lake City, Emergency Management**

Audrey Pierce began her presentation on Fix the Bricks by explaining the purpose of this project: to prevent collapsing buildings and reduce the number of death and injuries during the expected 7.0 earthquake by seismically retrofitting unreinforced masonry homes in the Salt Lake City boundaries. This could be achieved by completing top life safety priority details by creating roof-to-wall attachments and chimney bracing. This program started with a steering committee, educational outreach, idea pitched from a tornado shelter, mayor's press conference, and program implementation. They eventually decided to start using grant funding to help the citizens of Salt Lake City as opposed to using the funds internally. Audrey and her team had a conversation with the state and decided to apply for pre-disaster mitigation funding. After their press conference with the Salt Lake City mayor, they had 600 participants. Audrey and her team went through many phases in developing this grant. The process included:

- Pre-application
 - Scope of work
 - Seismic EHP
 - BCA

- PDM application/award
- Pre-construction/bids/homeowners contract
- Construction/documentation
- Closeout/FEMA reimbursement

The overall Grant has 75% grant funding and 25% match. They tried to pass that down to the homeowners as much as possible. Audrey added that an administration fee was added to cover what her team paid for up front. The homeowner would pay for construction costs and administration fees, but Audrey's team evaluated all the bids and rent against their original estimate. The homeowner selected who to work with, but Audrey's team had the last say on whether the amount they were being charged was feasible. After this process, the grant was awarded, and the homeowner had 90 days to get all their paperwork completed and submitted back to them. Audrey concluded her presentation which can be accessed [here](#).

Questions

- Someone asked if Audrey's team could influence insurance companies through the committee for benefits.
- Audrey responded that in the beginning, they had conversations with insurance companies about this. However, the house would still have damage, so no benefit would be given.
- Someone asked if there was any mechanism in place that outlined bids.
- Audrey answered yes, they had an outline that could be given to homeowners, and they could get feedback on their home. Currently, her team had approval to share a homeowner's contact information with a whole group of contractors, but they couldn't tell a homeowner who to look for to do the construction.
- Someone asked if a homeowner had never done something like this, what mechanisms would show them how to do due diligence? What process could Audrey's team give homeowners to help them make their decision without doing it for them?
- Audrey replied that they talked to some of the contractors that they had worked with a little bit more. They allowed them to use the Fix the Bricks logo, and if they wanted people to find them, then they should have a social media presence. They would also try to give homeowners guidelines on questions to ask contractors.
- Someone asked if they ran into any unforeseen conditions often. They then asked if Audrey's team could blacklist contractors.
- Audrey answered yes, they had an issue with one contractor. Unfortunately, they were not allowed to tell the homeowner that they didn't work with this contractor.
- Someone asked what the average cost was for a project.
- Audrey replied that the average was about \$20,000 to do the work. To date, they had roughly 35 homes that were completed and paid out.

IX. DRRR 1241/Post-Disaster Building Safety Assessment/NIMS Resource Typing

Mike Kaminski from FEMA began his presentation on NIMS resource typing. The NIMS Resource Management document was under the NIMS document, and it included the NIMS Resource Typing Program. In 2016 and 2017, the National Qualification Doctrine was released.

It addressed credentialing personnel qualification, qualifying and credentialing personnel, and resource typing. The key elements are that they resource type people, resource type teams, resource type equipment, and individual pieces of equipment, specifically unique pieces like a fire engine popper. They also resource type facilities. Resource typing went hand in hand with mutual aid. Providing mutual aid was one of Mike's roles in his position. They had also provided funding to NEMA since 1996 to allow NEMA to utilize resource typing through EMAC. Mike then noted that resource types were viewed as ad hoc standards or minimum requirements. Under that construct, they wanted to get as many people and jurisdictions as possible involved and based in mutual aid.

Mike explained resource typing by stating they normally identified items by category such as kind and type. Type one was normally the most capable resource. Section 320 Title Six of the code stated, "according to Congress NIMS provides authority for to the National Immigration center to lead development and maintenance of research diving definitions for resources shared on local interstate regional, or national scale." That was their mandate for Congress from 2017 and the reason why Mike attended NEPM to discuss building safety assessment tapes.

Mike noted the resource typing timeline which included the development of doctrines and input from subject matter experts. They then developed a draft document in a template and submitted it for national engagement to solicit input. It was a 30-day national engagement that went to the Federal Register. Next, they got a special dispensation from their legal counsel to say no, they put the document out on its own. They collected all of those and sent them to their stakeholders and their team. Those comments would be found either substantial, administrative, or non-applicable. They were then kept for future files and future deliberation. When that had all been done, they grew and released them from all the documents in the future.

Mike then discussed the Building Safety Assessment Team which was developed by the DRRRA of 2018. Under the Post Disaster Building Safety Assessment, section 1241, they were directed by FEMA to develop the guidance and building efforts to use when assessing structures after a disaster. The Building Safety Science School and Building Science Branch were developing the guidance of the standard. The NIMS of the Nation Branch that Mike was part of was supporting the resource typing effort. They were looking into developing and drafting a Building Safety Assessment Team, structure of condition evaluator, and any other additional positions to be developed depending on any outcome from the National engagement. Mike concluded his presentation which can be found [here](#).

Brett Lizundia began his presentation on post-disaster building safety assessment guidance. They were coordinating with local and state organizations to find best practices for assessing buildings. Brett noted the project had been contracted with ATC. Andrew Herseth was the lead on this project, and a diverse team of engineers, environmentalists, mayors, and building officials was working on it to cover a variety of issues since it was a multi-hazard issue. They were also looking at making sure the buildings fit the term "livability".

Brett noted the incident types they would be focusing on which included:

- Earthquake
- Hurricane
- Tornado
- Flood
- Tsunami

- Land Instability
- Volcano
- Snow/hail/ice
- Fire
- Explosion

Brett mentioned that they wanted to be specific about tags when tagging a building to define what was habitable and what is not. Brett then noted that the environmental hazards caused by these events were not often addressed. There was a chapter included that addressed these hazards and gave guidance on how to assess them to make buildings more habitable. Brett concluded his presentation which can be accessed [here](#).

X. Close for the day

XI. Reception – Viewing State Awareness videos and YouTube Presentation

NEPM Day 2 – Wednesday, April 24, 2019

I. **Field Trip**

- Board bus
- Tour of Utah State Capitol Retrofit
- Lunch at Utah State Emergency Operations Center
- Earthquake video
- Gilbert Geological Park
- University of Utah Seismograph Stations
- Return to hotel

NEPM Day 3 – Thursday, April 25, 2019

I. Welcome and Overview of the Day – Bob Carey

II. State/Territory Updates

South Carolina, David Perry

David Perry introduced himself as the Operational Planner for the South Carolina Emergency Management Division. David discussed initiatives that his division was taking that included earthquake and tsunami response plan re-writes; updated facts/assumptions/SERT responsibilities; modifications to the NEHRP Grant; Federal EPA Workshop promoting earthquake resilience for water & waste water facilities in the SC Low Country; NOAA Coastal Resilience Grant; Participation in Shaken Fury; and Enhanced SCEMD in-house training program. David concluded his presentation that can be accessed [here](#).

Questions:

- Anne Rosinski suggested looking at a ShakeMap if they hadn't considered the potential for the effects of an earthquake in South Carolina.
- David replied that for the sake of Shaken Fury, they would focus on mutual aid. They were prepared to address those issues. One battle they had was back to back earthquakes. It was hard to get people to think about seismicity. They had dealt with so many flooding issues that it was difficult to focus people on earthquakes.

Kentucky, Steve Brukwicki

Steve began his presentation by noting activities the state had done or planned to do. These included participating in the 2019 grant, sending notifications to FEMA Region IV and CUSEC, and passing through to CUSEC. Some projects the state was currently working on were ShakeOut and their annual conference. The state currently had 20 cases of 2-weeks ready pamphlets, 10 cases of passports, and two shake tables. They were still looking for more ideas from other states to promote ShakeOut. Steve concluded his presentation which can be found [here](#).

Arkansas, Hilda Booth

Hilda discussed the states ShakeOut awareness campaign. The goal was to train building inspectors, engineers, architects, and similar occupations in rapid building inspection after a catastrophic event. Training gave 7 PDH/7 HSW. It would be managed by CUSEC and cost \$15,000. Arkansas also implemented Go-Kit passport booklets to help people prepare for an earthquake. They created learning cards, educational materials such as shake tables, and free giveaways to encourage people to reach out and learn about ShakeOut. Hilda concluded her presentation which can be accessed [here](#).

Questions:

- Someone asked if Arkansas focused on mitigation projects such as water tank straps.
- Hilda responded that they gave away a lot of straps this year. She didn't know how many people were using them, but she was open to anything that will get the word out.

- Someone stated that they found to work with schools, they partnered with a group that did science in the classroom, and they had connection with teachers as a third party.
- Hilda replied that that could be really helpful, and she would investigate it.
- There was a question asking where Arkansas got their Shake Table.
- Hilda replied that they got it from CUSEC.

Arizona, Michael Conway

Michael discussed monitoring and outreach efforts his state has been working on for ShakeOut including the Advisory Group Seismic Safety, Story Maps they made for the 10 earthquake rattles in Arizona, and videos they created for the Mead Slope Fault. He noted that the 2019-2020 Arizona Seismic Safety Commission had established protocols and objectives for how to respond during an earthquake. They were also influencing earthquake preparedness and mitigation. Michael concluded his presentation which can be found [here](#).

Question:

- Amanda thanked Michael for bringing up the idea of geo tourism. Washington D and R had done some story maps that linked glacial flood history and created a road map. She loved the direction Arizona is headed.
- Michael replied that it was a beautiful story map. Right now, they were looking at geo heritage and were building out story maps. They currently had a volcanic hazard in Arizona. There were 600 young volcanos, so they created a geo heritage tour that would tell people about the risk. Talking about the geology and informing people was something they could do for Arizona.
- Someone stated they felt an earthquake in Arizona before in 2015. They also noted that if a big earthquake happened in southern California, there would be geo refugees.
- Michael replied that in 2015, Arizona experienced a magnitude 4.1 earthquake. He agreed that a big earthquake in California would result in geo refugees and shared that there were plans in place that FEMA and FIMA must deal with these refugees.
- Someone stated they needed to focus less on the state agency side and more on the outside such as housing, homebuilders, and K-12. If it was all directed at state agencies, then no one would pay attention from the public standpoint.

New Mexico, Chelsea Montego

Chelsea began her presentation by stating that there wasn't much seismic activity in New Mexico. A lot of their funding came from New Mexico Tech. ShakeOut was most of their earthquake project. Their participation had unfortunately been very small, but they just hired a new PIO which could change things. The previous year, they did a Quake Smart Workshop to coincide with ShakeOut. This provided steps from private entities to inform how to prepare for and respond to an earthquake. In 2018, they updated their State Hazard Mitigation Plan which included hazard damage information models. These provided information to individual counties on their risk. They also created susceptibility maps for different areas in New Mexico, so they knew what their risks were. For the past 22 years, they had hosted a conference for New Mexico Tech teachers. Chelsea concluded her presentation which can be found [here](#).

- Someone asked how large the conference for New Mexico Tech teachers was.
- Chelsea responded that the smallest was 15 people and the max was 30-40. It

depended on the area, but they usually got more participation towards the South.

III. 9:30 – 9:45 – Break

IV. State/Territory Updates

Missouri, Jeff Briggs

Jeff discussed the Missouri SAVES Coalition enhanced training. There were 1,000 members and 8-10 training sessions each year. It was a state-funded membership that must be renewed every 3 years. The leadership training course used ICS standards and could be used nationally. It also incorporated bridge inspection training for doing quick inspections during deployment and MoDOT field training. The state was also doing school structural assessments sponsored by the Seismic Safety Commission where volunteers assessed seismic vulnerability. So far, 14 schools and over 100 buildings had been assessed. The state didn't fund this; rather, NEHRP paid for the project coordinator and volunteer expenses. Jeff concluded his presentation by discussing the Earthquake Summit, the first annual conference for professionals in southeast MO to discuss EQ preparedness response. 275 people attended this year's summit, and the next would expand to include discussions on utility, insurance, geology, and the private sector. Jeff's presentation can be accessed [here](#).

Questions:

- Someone asked who the 1,000 members of the Mitigation SAVES Coalition were and what their backgrounds were.
- Jeff responded that they had three main groups. A large portion of them were engineers, architects, and the third and largest group were building officials.
- Someone asked if Jeff had thought about making a resource typing for EMAC request.
- Jeff answered that the chairmen of his SAVE Coalition was one of the members, and they were working on FEMA resource typing. Missouri's input, as well as the resource training, were being engaged with currently.
- Someone asked, based on the rapid visual screenings, had the schools taken that information and mitigated?
- Jeff responded that getting to know the commissioners to follow-up afterwards was a challenge for them. It was hit and miss right now, and they needed to do a better job of that. It is hard to get vacancies filled on their commissions. They had probably followed up with about half the school districts so far. Some followed up, and some didn't.
- Someone asked if they took account structural failures into consideration for the assessments. Did they investigate sight specific conditions?
- Jeff answered that they did. Part of the assessment was determining if it was a high seismic zone. Jeff answered yes to the second question but did not know the details.
- Cheikh said for the Missouri joint mitigation plan with FEMA, they tapped into their assessment. It was included, so that should be followed up with.
- Jim said Indiana and Missouri created the first MRP's. He stated that they found out there were no resources at EMAC. They then created this piece nationally. Many good things came from the EQ program. Everyone needed to do a better job of patting themselves on the back and highlighting these tools.
- Someone asked what outreach Missouri did for the annual meetings.

- Jeff replied that when he put together the planning committee, it was mainly public sector people. It grew from people in the planning committee inviting people that they worked with.

Alaska, Dan Belanger

Dan discussed the recent earthquake in Alaska. It happened on November 30, 2018 and was a 7.1 Cook Inlet Earthquake. Dan showed a video that captured the earthquake beginning in a school. The students and teachers reacted calmly and utilized the Drop, Cover, and Hold On strategy. Dan then addressed elements of the Alaska Earthquake and Tsunami program. For this program, the ASHSC legislative audit was completed and recommended for another 8-year commitment; the USGS, DGGs, AEC created a response workgroup to review the field guide developed by DGGs and compare to actual event; and the 2018 IBC adoption should be completed by summer of 2019. Project goals were to create a Rapid Visual Screening (RVS) project with Juneau & Sitka School District through ASHSC (NEHRP); create an Anchorage Earthquake and Tsunami Workshop to show mitigating impacts; create earthquake Preparedness playing cards (NEHRP); and to host a Tsunami Operations Workshop (NOAA). Dan's presentation can be found [here](#).

Questions:

- Someone asked if Alaska had a plan in place before this went off. Did that plan address what to do for an aftershock, and did it work? Did recovery and response need to be reset?
- Dan answered that while they did have a plan in place, it didn't work. They didn't have major damage, but there was a certain time period where they altered what the plans were afterwards. Alaska had 3-4 magnitude earthquakes all the time. Because they were so common, the initial inspections weren't done until days afterwards. They also had an issue with the Department of Transportation. Dan's team would get in contact with the Red Cross and other inspectors to do inspections for a resident who would call asking what to do.
- Someone asked if there was a fuel hub in Anchorage and whether it was damaged.
- Dan replied that the main fuel hub is in Anchorage, and it was down for 6 hours.
- Someone asked if there were any other utility infrastructures that were damaged.
- Dan replied that many electrical utilities were damaged. Some people even lost their GCI, but it was back up in a few hours. The longest power outage was about 18.5 hrs. In about 12 hours, the numbers went from 14,000 people without power to 3,000.
- Jeff thought the video Dan showed in the beginning was amazing. It was the ultimate demonstration of what Earthquake Program Managers were trying to accomplish with ShakeOut.
- Dan replied that the video is on YouTube.

Andrew Robert Smith, MEMA

Andrew presented Mississippi's Earthquake Program. He noted that on January 8, 2019, there was a 3.7 magnitude earthquake in Washington County. This was the strongest MS earthquake since 1967. The state had been working on earthquake awareness and increasing participation in The Great ShakeOut. In 2017 they had 267,884 participants, and in 2018 they had 341,610 participants. The state also implemented NETAP funded training which consisted of two courses on FEMA P-154 and ATC-20, and FEMA E-74.

Andrew noted that MEMA and CUSEC teamed up to create an earthquake screening and mitigation pilot project in Tunica, MS that consisted of two phases. Phase 1 included seismic safety inspections and critical facility inventory. Phase 2 consisted of a non-structural mitigation project. Andrew concluded his presentation which can be accessed [here](#).

Questions:

- Someone asked how the ShakeOut market increase happened.
- Andrew responded that his planning crew was amazing, and their lead was the result of the increase. Unfortunately, the lead recently left their team.

North Carolina, Kevin Kalbaugh

Keven presented on the North Carolina Teach the Teachers Workshop and Business EOC TTX. The Teach the Teachers workshop involved 4 Earthquake Education Workshops provided by the North Carolina Geological Survey and workshops led by national award-winning earth science teachers. Participants included K-12 teachers, North Carolina State Park rangers, and educators from museums and youth camps across North Carolina.

Kevin proceeded to discuss the Business EOC TTX which was designed to identify the steps necessary to coordinate unity of effort between private and public entities for short- and long-term recovery after an earthquake in North Carolina. This project would strengthen partnerships by identifying key players in the EOC/SERT and contacts for business-to-business mutual aid. Kevin's presentation can be found [here](#).

CREW, Pascal Shuback

Pascal noted that CREW was a consortium for the Pacific Northwest that worked as a partner to promote earthquake safety. Some projects they were working on included videos to promote earthquake preparedness and the Earthquake Protection Action Paper. They did support work for the Maritime Symposium. This year, they were working a lot on energy and separating the process of electrical vs natural gas. CREW had also been implementing Mass Care Workshops to show the needs of mass care. The project Pascal enjoyed most was the video contest for youth. He enjoyed seeing children and parents getting excited about earthquake safety. They had also done two-weeks ready support so that people could understand the importance of earthquake preparedness. They were currently focusing on earthquake early warning. They were trying to get these resources out so everyone could benefit from them. Pascal's presentation can be accessed [here](#).

v. 11:30 – 12:30 – Lunch

VI. Breakout Sessions

FEMA/Consortia/Partners

Heidi Treymayne presented the ideas discussed in the FEMA, Consortia, and Partner breakout session. The breakout session talked about how FEMA had advanced from last year's goal to better inform new Earthquake Program Managers. There were conversations about how to document the history of activities, learn from past progress, and facilitate that progress for

anyone new coming in. There was also talk about documenting what the group accomplished in a way to share knowledge so that new Earthquake Program Managers could learn what FEMA's role is. At the session, people also discussed developing an infographic of the different modules of direct state assistance. This could help Earthquake Program Managers understand the different types of workflow for FEMA, Earthquake Program Managers, and partners. People hoped these ideas would evolve over the year.

People also discussed increasing involvement from State Earthquake Program Managers and representatives from the different types of groups that were represented. Other ideas discussed included developing training and expanding CUSECS training to leverage and help new Earthquake Program Managers. The big, overarching need that was identified was how to raise the visibility of what everyone at NEPM does. There had been great progress done and marketing those successes would increase visibility and allow more progress. Creating ways for higher ups to see these successes would make everyone more noticeable and hopefully increase funding. Ultimately, this could be done by making a longitudinal plan to increase visibility and leverage each other's work. Finding a way for Earthquake Program Managers to feed into the rest of NEHRP would help create visibility as well.

The final thing discussed was creating more opportunities for Earthquake Program Managers to get involved in NEC 2020. They were looking for Earthquake Program Managers to get involved in committees and showcase their ideas so it could better benefit them. Heidi concluded her presentation by noting that everyone was excited for the new ideas ahead.

State/NEPM

Maximilian began the state brief-out by noting that the states were unaware of which action items from last year's NEPM were completed, and they wished they had received a spreadsheet on how the \$9 million budget for the NEHRP program was appropriated.

Maximilian reported that after the FEMA presentations on Tuesday, the states felt that they didn't receive the information they were looking for regarding the DRRA and NEHRP funding/changes. They would have preferred more discussion regarding programmatic changes and what they meant for the states and suggested that in the future, there was a workshop to help states better understand what projects are eligible for funding. Maximilian then added that the telephone conference calls between the states and FEMA about Comprehensive Cooperative Agreement (CCA) were challenging because the states felt they didn't receive much detailed information. The states wanted to work with HQ to come up with a better process for communicating this information.

At last year's NEPM conference, Ed Laatsch said, "We need to sell NEHRP." Yet Maximilian noted neither he nor the other states (to his knowledge) were never reached out to about the great things they were doing to help sell the program. The states wanted to know how they could better market themselves and help others do the same. Maximilian asked, "how do we do that? How do we market ourselves better?" The states wanted more feedback from FEMA.

Maximilian then stated that the states had feedback regarding the NEPM agenda topics. The 101 session at last year's NEPM conference was effective, and they wanted to further define what the core elements of EQ Program Managers were from a state perspective and replicate this training opportunity. Maximilian added that the states needed some clout to say, "This is a program that's really important, and we need to build it." The states needed to know what their roles and responsibilities are. Building that together bottom up and top down was important so

that more folks could be supported at the national level. Some additional needs included:

- Having conversations about where the EQ Program Managers gaps and needs are.
- States didn't need a lot of engineering/building code related information.
- States wanted more information about NEHRP Funding, DRRA, outreach/marketing, etc.
- Needing to work to better identify what training elements the states could provide each other and what info was needed from FEMA and Consortia/Partners to build a National EQ Program.

Maximilian noted state funding needed to be increased. At future NEPMs, the states wanted to better communicate the great projects they were working on with one another. They also wanted to add more time to the State-only breakout session and further discussion about how to best maximize their time at NEC 2020. At NEC 2020, they wanted an option for training and presentation times to help highlight the great things they were working on and information that should be shared with new Earthquake Program Managers.

They wanted states and territories to go through the development or re-evaluation of their strategic plans to help define the program, goals and objectives.

Maximilian thanked everyone for all their hard work and concluded the state brief-out.

I. Break

II. NEMA Subcommittee Meeting

The NEMA subcommittee meeting began by discussing membership and noting who was part of the subcommittee. The committee discussed the workplan strategy and collaborated with states, FEMA, and NEMA members to come up with new ideas and goals.

III. State/Territory Report Updates

Ohio, Heather Byers

Heather presented on the Ohio EMA Earthquake Mitigation Tabletop Exercise, a discussion-based exercise that would be implemented on May 28th, 2019. It would explore topics such as mitigation, resource management, communications, decision making and information sharing, and vulnerability identification and assessment. The objectives were to determine future mitigation actions based on identified earthquake-related vulnerabilities; identify decision making concerns that can be mitigated prior to incident; evaluate process for resource requests between stakeholders; and discuss communication resources available during normal operations (pre-response) and response. Heather discussed the different modules of the exercise, then proceeded to discuss next steps that included TTX, identifying future projects and developing improvement plans, and increasing education and outreach. Heather concluded her presentation which can be found [here](#).

Questions:

- Someone asked if Heather's vendor would write the AAR.

- Heather responded that her vendor was responsible for writing every documentation, but she could send off anything that anyone needed.
- Someone asked when the tabletop exercise would be.
- Heather answered it would be on May 28th and Shake and Fury would be on May 29th. When they first scheduled it, we were unsure on the dates but so far everyone has accepted the invitations.
- Someone asked when her team put out the bid for the tabletop exercise and how long they had been planning this.
- Heather responded that they put out the bid in October. They reached out to all their approved instructors and re-put out the bid that fell under their \$30,000 budget.

Indiana, Allison Curry

Allison discussed the state's goal to increase education and outreach and expand Indiana's knowledge about earthquake disasters and their impacts. They were focusing on informing kids and teenagers through their Quake Cottage, and hopefully they would go home and teach their parents what they learned. They hosted 11 events at schools, museums, and fairs that totaled to 1,864 participants. They reached many goals, including getting Gov. Holcomb to ride in the Quake Cottage with Indianapolis Public School children. They also got support for earthquake education from the Department of Education by sending out messaging to schools to participate in UP. Allison concluded her presentation which can be accessed [here](#).

Questions:

- Someone asked if Allison could give an overview of a seismic plan.
- Allison responded that they made a Wasatch Valley plan, and they were trying to come up with the worst-case scenario to see what resources were needed. It was the same as a response plan.
- Amanda asked how they paid for the Quake Cottage.
- Brian Blake answered that it was originally funded through the NEHRP program and some other funds through the geological survey.
- Someone asked if there were samples of the media presses and PIO's.
- Allison replied that she was more than happy to share them with him.

Tennessee, Cecil Whaley

Cecil began his presentation by discussing earthquake preparedness in Tennessee. The state was currently working on developing ShakeOut PSA. Part of the NEHRP Grant, the project was a continuous effort. They partnered with local EMA's, engineer associations, the Architect Institute, and code officials to increase the participation in earthquake preparedness. This was a continuing outreach partnership they were building on hoping to increase their partners and associations. They created awareness through Go-Kit Passports, Two Week Ready Brochures, and their Shake Table. The state was supporting CUSEC regional information-sharing IT/GIS. Cecil concluded his presentation which can be found [here](#).

SCEC, Jason Ballmann

Jason discussed his involvement with SCEC and which measures they were taking to promote earthquake safety. California proposed two projects under NEHRP 18' which included support to SCEC for ShakeOut, ECA, and EEW messaging, as well as EEW broadcast media

campaigns. ECA statewide activities included developing messaging and resources, supporting Tsunami Preparedness Week, and the creation and coordination of the Great California ShakeOut. Jason described the seven steps to earthquake safety which could be easily found at EarthquakeCountry.org/sevensteps. The Terremotos.org website also contained downloadable earthquake safety materials and the seven steps. Jason discussed the importance of Drop, Cover, and Hold On and the import of being prepared for an earthquake. They had created short videos to demonstrate earthquake safety and addressing why it was important to protect yourself. Jason also presented resources applicable to seniors and those with disabilities. He then noted the ECA sector-based outreach committees and the Participation Bureau.

Jason went into detail on the benefits of registering for ShakeOut and presented example statistics of the participant list. All state participation information could be accessed through the ShakeOut website. With FEMA/CalOES support, SCEC created and distributed regionally customized ShakeOut Update newsletters, sent personalized emails to those who hadn't renewed their registration, called larger organizations to invite them to renew, posted frequent social media messaging, managed the database/website, and provided translations in French and Spanish through partners and interns. Jason then showed examples of these types of messaging and graphics, as well as materials for children ages 5-9 and college ShakeOut resources. Jason concluded his presentation which can be accessed [here](#).

Questions:

- Someone asked if Jason could provide the analytics.
- Jason suggested anyone interested email him for data regarding the google analytics.
- Sean asked if Jason had heard any interesting mitigation steps that had been taken.
- Jason answered yes, he heard many interesting mitigation steps. He also requested that states consider getting county level members on board to help with the recruitment process. Shakeout was the social science multi-channel approach.
- Someone noted that they had created local champions. They were the ones who wanted to do more and were asking states to create a Facebook page for them.
- Jeff asked if he could pick a handful of people in his county to be given access to the portal to search specific organizations and get in contact with them.
- Jason replied that is correct.

NEPM Day 4 – Friday, April 26, 2019

I. 2020 NEPM Planning Meeting

Maximilian led the planning meeting by asking if there were any volunteers to be the 2020 NEC Chairmen. Jeff Briggs from Missouri volunteered, but he would have to discuss with his management before he could give a definite answer.

II. NEC 2020 Discussion

Heidi Treymanne from EERI and Leslie Chapman-Henderson from FLASH discussed planning for the 2020 NEC Conference. They informed the group that they were looking for committee members and any ideas that could be presented at the conference. They're presentation can be found [here](#).

III. 10:00 – 10:15 – Break

IV. State/Territory Updates

Colorado, Karen Berry

Karen presented on earthquake activities that had been done over the past year. Colorado was monitoring seismicity to increase their knowledge on potential active faults. They expanded their network to 40 states and installed 2 new seismometers. They would be implemented in 2019 to replace the defunct USGS Aspen/Snowmass site.

Karen then discussed the Quarterly Fault database update. They implemented a map server with locations of all cataloged earthquakes in Colorado. It also had fault lines that ruptured within the last 23 million years. The project would move from DNR to the University and update. This site got hundreds of unique views every month, and they would be adding GIS story maps to it. Karen proceeded to address the Cheraw Fault investigation educational projects they had worked on. These projects included a co-sponsored Quake Smart event with CGS, earthquake videos, and presentations given with FEMA to military EM planners. Karen concluded her presentation which can be found [here](#).

Illinois, Jason Williams

Jason stated that Illinois had been a pilot program for hospital mitigation. Four outreach activities have been conducted throughout the past year for health care facilities. They conducted FEMA 154 ATC-20 for the state. Jason presented an interactive video and two videos that were online.

Questions:

- Someone asked how Illinois got into working with hospitals.
- Jason stated that he and Brian were invited to the Illinois department of public health and had several presentations. It was through another state agency that they got into working with hospitals, but they were another conduit.
- Someone asked if Jason ever thought about putting the interactive part online.
- Jason didn't think it was possible because it was licensed.
- Someone asked if the hospital training was funded by NETAP or NEHRP. They also

asked how to find this training.

- Jason answered that it was funded through DEHRP. It could be found through FEMA courses.

Wyoming, Seth Wittke

Seth discussed updates in Wyoming. The state created promotional materials in support of the Great Wyoming ShakeOut. NEHRP used \$27,000 of funding to create items such as phone accessories and playing cards. They recently did paleo-seismic work in the Buffalo Bowl as well as the Antelope Flats. Seth's presentation can be found [here](#).

Utah, John Crofts

John began the presentation by stating that there were fires in a large portion of the state last summer that caused extensive damage and threatened critical infrastructure. They discussed the concept of growth and how the state leveraged their key three partners to work towards earthquake safety. The groups met and talked about projects and future goals. While they had different responsibilities, they had the same goal, which allowed them to communicate a clear, consistent message. John noted the importance of really getting to know your partners so that you could work together effectively.

The state also had the Utah Seismic Safety Commission which would be holding their 25th anniversary this summer. Many people participated in this group, and they had quarterly meetings.

v. WSSPC Awards Luncheon (all invited) / End of Meeting

vi. WSSPC Board Meeting

VIII: 2:00 – 2:15 – Break

IX: WSSPC Annual Business Meeting

2019 NEPM Action Items

- FEMA to document what they have accomplished in a way to share this knowledge so that new Earthquake Program Managers can learn what FEMA's role is.
- FEMA to develop an infographic of the different modules of direct state assistance so that Earthquake Program Managers can know the different types of workflow FEMA, Earthquake Program Managers, and partners.
- Raise visibility of what those who attend NEPM accomplish.
- Create more opportunities for Earthquake Program Managers at NEC 2020.
- Email Jason Ballmann for ShakeOut Google Analytics.
- Jeff Briggs from Missouri to confirm if Missouri can be the NEC 2020 Chairmen.
- Let Heidi Treymanne and Leslie Chapman-Henderson know if anyone has ideas for NEC 2020 or would like to be part of a planning committee.