



ASA HUTCHINSON
GOVERNOR

**STATE OF ARKANSAS
DEPARTMENT OF EMERGENCY MANAGEMENT**



A.J. GARY
DIRECTOR

October 29, 2018

The Honorable Bill Sample, State Senator
The Honorable Jim Dotson, State Representative
Co-Chairs, Arkansas Legislative Council
c/o Bureau of Legislative Research
Room 315, State Capitol Building
Little Rock, AR 72201

Dear Sirs:

Enclosed is the annual Arkansas Earthquake Program report as required per ACA 12-77-107. This report is being provided in an electronic version; a print version may be provided upon request.

Please do not hesitate to contact me if I or my staff may be of further assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "A.J. Gary".

A.J. Gary
Director and State Homeland Security Advisor

To the Co-chairs of the Legislative Council:

In accordance with the House Bill 2032 amending Act 711, the Arkansas Department of Emergency Management (ADEM) hereby reports the following activities of the Arkansas Earthquake Program as they relate to specific requirements of the bill:

A. Continued assessment from proper scientific authorities of the seismic risk to the state:

In 2018, ADEM maintained its relationship with the Arkansas Geological Survey (AGS) and the State Fire Marshall through meetings, email, phone correspondence, and educational events

- State officials from the above listed agencies attended the Arkansas Governor's Earthquake Advisory Council (ARGEAC) meeting in July 2018. ADEM and AGS share responsibilities for the ARGEAC meetings.
- The Arkansas Department of Emergency Management and the Arkansas Geological Survey continue to interact frequently. Activities that involved both agencies were the FEMA R6/AR New Madrid Seismic Zone (NMSZ) Plan rewrite and exercise that was held in April 2018 at Camp Robinson in North Little Rock, INSPARK training, and the regular discussion of possible projects that might be undertaken with the funding available from the National Earthquake Hazard Reduction Program (NEHRP). ADEM and AGS work together to spread earthquake awareness and mitigation throughout the state cooperatively staffing booths at the following awareness events.
 - January 11, April 20, May 18, July 30, and September 14, 2018 – AGS and ADEM partnered with INSPARK leadership to teach ATC-20 classes in Jonesboro, Fayetteville, Little Rock twice, and Hot Springs.
 - February 1, 2018- E-Stem Charter School Science Fair, Conway, AR
 - October 11, 2018- QuakeSmart Preparedness Seminar, Benton, AR
 - October 26, 2018- STEMFEST, Jacksonville Air Force Base, Jacksonville, AR
- ADEM reaches out to the State Fire Marshall for subject matter expertise – most often to answer questions about the Arkansas' Building Code.

Earthquake Hazard Study for the Little Rock Metropolitan Area

Arkansas Geological Survey has applied for grant funding through the United States Geological Survey focusing on an Earthquake Hazard Study for the Little Rock Metropolitan Area. The purpose of the study is to collect and analyze geologic and

geotechnical data about the soils and geology in the Little Rock metropolitan area. Analysis of the information will offer insight into how specific areas – beginning in central Arkansas – will be affected by strong earthquakes. A kick off meeting was held on May 1, 2018 to educate stakeholders on the details of the project, why it should be undertaken, how it will be funded, etc. The project is phased and will be completed over multiple years. It will use existing soil data available from various state and federal agencies such as the Arkansas Department of Transportation, private geotechnical firms and the U.S. Geological Survey. It will collect data first hand in areas where no studies have yet been made.

B. Training and education of the state and local government officials, employees, and citizens of Arkansas regarding preparation and protective measures that can be taken before, during, and after an earthquake:

In 2018, ADEM hosted courses focused on building capabilities to support response to earthquakes. Below is a list of classes offered by the state to all citizens, government officials and employees.

- January 11, 2018-ATC-20 Rapid Visual Inspection training at Arkansas State University in Jonesboro
- April 20, 2018- ATC-20 Rapid Visual Inspection training at University of Fayetteville, Fayetteville, AR
- May 18, 2018- ATC-20 Rapid Visual Inspection training, Arkansas Electric Co-Op, Little Rock, AR
- July 20, 2018-ATC-20 Rapid Visual Inspection training, Arkansas Labor Department, Little Rock, AR
- September 14, 2018-ATC-20 Hot Springs Fire Department, Hot Springs, AR

C. Planning coordination, guidance, and assistance to all state and local government officials in preparation for, response to, and recovery from earthquakes:

Rewrite of the *New Madrid Seismic Zone Catastrophic Earthquake Response Joint FEMA R6 – State of Arkansas Operations Plan (hereafter referred to as the Joint OPlan)*

A project was undertaken to rewrite the 2010 plan and better address the preparedness, response, recovery, and mitigation operations for a catastrophic New Madrid earthquake affecting the northeast counties of Arkansas. The project was funded by FEMA at the national level and included five personnel contracted specifically to support this initiative. One contractor, a mid-level planner, was embedded within ADEM.

The Joint OPlan project began in January 2017 and was completed and exercised nationally on April 25 and 26, 2018. The tabletop exercise was a success. It brought together local, state, federal, and private sector stakeholders who worked within the constraints of the plan to ensure life safety, alleviation of human suffering, the continuity of critical government functions, maintenance of or restoration of services and ensured that the essential infrastructure could be stabilized and repaired.

INSPARK (INSPEct ARKansas)

Arkansas has had a training program for building inspection in place for over twenty years. In October 2014, the earthquake program began working to better organize and utilize these trained building inspectors after a catastrophic earthquake. This included the creation of a new database, the execution of multiple classes to help certify building inspectors and the creation of a standard operating guide to document how Arkansas will identify and deploy teams of inspectors after an earthquake. This program successfully tested its call down, notification system, and its personnel accountability standards in October of 2018.

The “Collector App”, the primary means of data collection during trainings and real-life events, has been successfully integrated into the INSPARK Program. The Collector App information can be conveyed to the State Emergency Operations Center (SEOC) in real time during disaster. The Collector App was updated in 2018, with Arkansas’ assistance during the testing phases of the update.

INSPARK is currently serving as a model program for member and partner states of the Central United State Earthquake Consortium (CUSEC) to develop their programs. Kentucky and Louisiana are working to build programs similar to our Arkansas’ INSPARK program. CUSEC and Arkansas’ INSPARK hosted a meeting on Petit Jean Mountain October 24-25, 2018 to work with the leaders of each of CUSEC’s states (Alabama, Tennessee, Kentucky, Indiana, Illinois, Missouri, Mississippi, and Arkansas.) At the Petit Jean meeting, Rapid Building Inspection Teams trained on the updated “Collector App” and made plans for the Building Inspection Teams participation in the June 2019 Shaken Fury Exercise.

Arkansas Children’s Disaster Reunification Plan Pilot Program (CDR3P)

The Arkansas Voluntary Organizations Active in Disaster have partnered with the National Center for Missing and Exploited Children to serve as one of two pilot programs in the United States to develop a disaster reunification plan for children who are separated from their parent or caregiver as a result of earthquake or other disaster. The Arkansas Department of Human Services (DHS) is the lead agency for this effort. The Arkansas Department of Emergency Management and others support DHS. The Reunification Plan will be rehearsed in March 2019.

D. Coordination of earthquake program activities with comparable agencies of the federal government and other states:

Private Sector Coordination

Arkansas has worked over the past year to create relationships with key stakeholders within the private sector. Through this relationship building, the Arkansas Department of Emergency Management has collaborated with industries, like Union Pacific Railroad; to identify what types of resources will be available within the State of Arkansas during a catastrophic earthquake response. The Earthquake Program received a \$5,000.00 grant from State Farm to be used for educational and awareness items to be given out to K-12 students and teachers to increase earthquake awareness and preparedness. Modifications to software used in the State Emergency Operations Center (SEOC) are underway to enable private sector partners to participate more fully in response and recovery. Representatives from the private sector community are offered the opportunity to exercise their capabilities with ADEM virtually and provide feedback to the state emergency operations center.

Arkansas Governor's Earthquake Advisory Council

The Arkansas Governor's Earthquake Advisory Council (ARGEAC) meets bi-annually:

- January 12, 2018 in Jonesboro, Arkansas
 - Meeting canceled due to inclement weather
- July 13, 2018 in Heber Springs, Arkansas
 - Martha Kopper, Geology Supervisor Arkansas Geological Survey (AGS), spoke about the continual monitoring of seismic activity in Arkansas and updated us on AGS's work on a new seismic map that will show the potential for increased chance of liquefaction damage across the state during a catastrophic earthquake. AGS worked closely with different departments from around the state to remove a sinkhole on the Spring River in Sharp County.
 - Hilda Booth, ADEM's Earthquake Program Manager, discussed the work the Central United States Earthquake Consortium (CUSEC) is doing to update the collector app that is used to aid in rapid building inspection, making the app more user friendly and adding information that will make identifying and marking damaged buildings easier. CUSEC has a Table Top Exercise planned for February 5, 2019.
 - Hilda Booth, ADEM Earthquake Program Manager, also discussed the recently finished re-write of the Joint Arkansas/FEMA Region 6 New Madrid Seismic Zone (NMSZ) Earthquake plan exercised in April of 2018. Hilda also explained her plans to promote statewide

participation in the 2018 Great ShakeOut, especially in schools in and around the NMSZ.

- o Dr. Clinton Wood, University of Arkansas at Fayetteville, gave a presentation entitled Observations from the Mw 7.1 September 19, 2017 Puebla-Mexico City Earthquake. He discussed the geotechnical and geologic background of Mexico City and compared the damage from the 1985 Mexico City earthquake with the 2017 earthquake.

National Earthquake Program Manager's Meeting and National Earthquake Conference

The Arkansas Department of Emergency Management participated in the National Earthquake Program Manager's (NEPM) Meeting held May 1-4, 2018 in Seattle, WA. The meeting provides an opportunity for FEMA, at both the national and regional levels, to brief the states and territories about funding streams and other national developments that will influence state and territorial earthquake preparedness. The states are able to exchange information about their individual education and awareness campaigns. The meeting also provides an opportunity for various partners, such as the Central U.S. Earthquake Consortium, to share what they can do and have done to help the state earthquake programs.

A significant amount of time is also set aside for training including National Earthquake Hazard Reduction Program (NEHRP) funding, National Earthquake Technical Assistance Program (NETAP), Earthquake Early Warning technology, Grants Management, and the Earthquake Performance Assessment Tool (EPAT). The next NEPM meeting is scheduled for April 22-26, 2019 in Salt Lake City Utah.

Emergency Management Assistance Compact

In March of 2018 ADEM Operations Branch participated in the annual All Hazards Resource Allocation Workshop with the National Guard. This workshop brings together Guard representatives from every state to discuss their most catastrophic event and to allocate resources through handshake agreements. In the event of an earthquake, these Guard resources will be requested and sent through EMAC. ADEM participates because all EMAC missions, by law, must be coordinated by state emergency management.

Interstate Emergency Response Support Plan

The Interstate Emergency Response Support Plan (IERSP) is an agreement between the five FEMA Region 6 states – Texas, Arkansas, Louisiana, Oklahoma, and New Mexico – under which the states lean forward to assist each other. The states become familiar with each other's needs and capabilities so that assistance is faster within our FEMA Region. The FEMA Region 6 IERSP may be the only agreement of its kind in the nation.

The Interstate Emergency Response Support Plan (IERSP) group has met four times this year to review and update planning processes. The group participated in the NMSZ planning process through the Course of Action (COA) workshop in January and the tabletop exercise April 25-26, 2018.

Arkansas is working to identify 'triggers' for the deployment of other FEMA Region VI states' Mission Ready Packages. With triggers in place, resources will be automatically dispatched toward Arkansas if communications are so damaged that Arkansas cannot reach out to ask for those resources.

Shaken Fury

Vigilant Guard is a quarterly exercise where the National Guard works with local, state, and federal emergency agencies to coordinate and practice emergency response techniques. On October 30-November 1, 2018 the Guard met to discuss the National Guard's Earthquake exercise planning for Shaken Fury 2019. ADEM briefed on the state's earthquake program and the 2018 NMSZ Joint OPlan and Martha Kopper from the AGS gave a brief earthquakes presentation.

ShakeOut

The Arkansas Earthquake Program participated in the Central United States ShakeOut in 2018. This yearly drill encourages people in homes, schools, businesses, and other organizations to practice what to do during an earthquake and improve preparedness using the "Drop, Cover and Hold On" methodology. Billboards are used in northeast Arkansas to promote the event and they remain in place after the event to reinforce the "Drop, Cover and Hold On" message.

This year the exercise held on October 18 at 10:18 am. Participation tripled from the previous year. We had 208,970 participants in the state of Arkansas, up from 70,000 in 2017, which fell into the following categories:

- 175 individuals and families
- 1,749 childcare centers and pre-schools
- 61,873 K-12 students
- 27,370 College or University Students
- 583 local government workers
- 7,251 state government workers
- 96 federal government workers, including military
- 101,601 employees of businesses
- 25 hotels and other lodgings
- 6,603 healthcare workers

- 703 senior facilities/communities
- 300 disability/Access and Functional Needs (AFN) organizations
- 192 non-profit organization workers
- 160 preparedness workers/organizations
- 62 faith-based organizations
- 6 volunteer radio groups
- 21 Media Organizations
- 200 Civic organizations

The Arkansas Department of Emergency Management participated in different preparedness presentations and used various outreach methods to connect with a wider array of people throughout the state to show an increase in participation this year.

Conference calls, presentations, and meetings

- January 8, 2018 (and the second Thursday of each month) Monthly Central United States Earthquake Consortium (CUSEC) conference call
- January 9, 2018 (and the second Tuesday of each month) Central and Eastern United States (CEUS) Earthquake Coordination Committee conference call
- January 17-18, 2018- NMSZ Earthquake Plan Course of Action Development Review at Camp Robinson, North Little Rock
- January 19, 2018- Greene County Safety Summit Preliminary Meeting, Paragould, AR
- February 13, 2018- Greene County Kiwanis Club Meeting
- February 21, 2018- Wynne County Rotary Club
- February 22, 2018- Greene County Safety Summit, Paragould, AR
- February 26-28, 2018- Earthquake Program Managers/Public Information Officer ShakeOut planning meeting, Indianapolis, IN
- March 28, 2018- Earthquake presentation to the Arkansas Association of Structural Engineers, North Little Rock, AR
- April 25-26, 2018- FEMA/AR New Madrid Seismic Zone table top exercise
- April 28, 2018- Safety Summit, Randolph County, AR
- April 30-May 3, 2018- National Earthquake Program Managers Meeting, Seattle, WA
- June 6, 2018- American Society of Civil Engineers Monthly Meeting, Fayetteville, AR
- June 25-26- Shaken Fury preliminary meeting, Franklin, TN
- July 6, 2018- Greene County Youth Preparedness Council Orientation Day, Paragould, AR

- July 13, 2018- Governor's Earthquake Advisory Council Meeting, Heber Springs, AR
- August 9, 2018- Youth Preparedness Council, ADEM, North Little Rock, AR
- October 16, 2018- EMHS Conference, Arkansas Tech University, Russellville, AR
- October 18, 2018- The Great ShakeOut Earthquake Drill
- October 23, 2018- Woodruff Electric Earthquake Preparedness Meeting, Wynne, AR
- October 24-25, 2018- CUSEC/INSPARK Rapid Inspection Teams from IL, MS, MO, KT, LA, AR, IN, TN- updated collector app training and Shaken Fury preliminary meeting
- October 26, 2018- STEMFEST, Jacksonville Air Force Base, Jacksonville, AR
- October 30, 2018- National Guard Shaken Fury preliminary meeting, North Little Rock, AR

E. The dissemination of information to the public pertaining to earthquake hazards, especially to Arkansans living near the New Madrid Fault, protective measures, seismic resistance in building construction, and appropriate actions to be taken before, during and after an earthquake and other matters the Arkansas Department of Emergency Management shall determine to be necessary or appropriate to educate, inform, and equip citizens in this state to deal with an earthquake:

- January 22, 2018- Valley View Tennis Ball Project with 2nd graders from Valley View Elementary in Jonesboro, AR
- February 1, 2018- E-Stem Charter School Science Fair, Conway, AR
- March 16, 2018- Piggott High School Student Activity Day
- April 21, 2018- McCain Mall Safety Summit, North Little Rock, AR
- June 21, 2018- Cave Springs Senior Citizens Group earthquake presentation, Cave Springs, AR

Recommendation for Improvement

Due in large part to the efforts put forward by the Arkansas Earthquake Program, in conjunction with the Central United States Earthquake Consortium (CUSEC) and the Federal Emergency Management Agency (FEMA), many Arkansas citizens have become aware of the potential threat posed by the New Madrid Seismic Zone (NMSZ). However, there is still room for improvement. The recommendation of the Arkansas Department of Emergency Management is to continue to provide public outreach to gain citizen

involvement and awareness in relation to the New Madrid Fault System. Additional consideration for improvement would be to identify and obtain additional funding sources to assist with the forward progression of the Arkansas Earthquake Program.