



ASA HUTCHINSON
GOVERNOR

**STATE OF ARKANSAS
DEPARTMENT OF EMERGENCY MANAGEMENT**



A.J. GARY
DIRECTOR

October 23, 2017

The Honorable Bill Sample, State Senator
The Honorable David Branscum, 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 blue 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 2017, ADEM maintained its relationship with the Arkansas Geological Survey (AGS) and the State Fire Marshall through meetings, email, and phone correspondence.

- State officials from the above listed agencies attended the Arkansas Governor's Earthquake Advisory Council (ARGEAC) meetings in January and July 2017. ADEM and AGS share responsibilities for the ARGEAC meetings.
- The Arkansas Department of Emergency Management and the Arkansas Geological Survey continue to interact frequently. Some of the activities that involve both agencies are the multi-state exercise that was held in June, 2017, the yearly Rehearsal of Concepts drill, and other exercises; regular discussion of possible projects that might be undertaken with the funding available from the National Earthquake Hazard Reduction Program; and on occasion cooperatively staffing booths at awareness events.
- ADEM reaches out to the State Fire Marshall for subject matter expertise – most often to answer questions about the Arkansas' Building Code.

Quake Catcher Network

Arkansas participates in the Quake Catcher Network (QCN), an award winning initiative run by the University of Southern California. During the fall of 2016, an intern from the Arkansas State University Emergency Management Program was engaged to install twenty additional earthquake sensors in locations around Arkansas. The sensors collect information about the characteristics of earthquakes through different soils and at different distances from the epicenters. Sensors were installed in schools, libraries, emergency management facilities, museums, etc.

Arkansas Geological Survey Clearinghouse Exercise

June 14-16, 2017 – Arkansas Geological Survey ran an exercise concurrent to the building inspection exercise held at Arkansas State University. The players included UA Little Rock, UA Fayetteville, the Arkansas Natural Resources Commission, the U.S. Geological Survey, the Geological Surveys of Indiana, Alabama, and California, and North Little Rock High School.

The Clearinghouse will be staffed by researchers and support personnel who will collect and disseminate the scientific information gathered following a significant earthquake. It will also provide situational awareness to the State Emergency Operations Center in first person

reports from the field. In addition to exercising the Clearinghouse Plan, Arkansas Geological Survey exercised its Ham radio capability, its ability to communicate with staff in the field, its GIS mapping capability and the viability of its call down list.

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 2017, ADEM hosted a variety of 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.

- October 11-14, 2016 – Hosted a Hazards U.S. – Multi Hazard (Hazus-MH) class at University of Arkansas Little Rock. Hazus-MH is a computer modeling software that calculates the exposure for a selected area, characterizes the level or intensity of the hazard affecting the exposed area, and calculates the potential economic losses, structural damage, etc.
- November 14-18, 2017 – Hosted the National Planner’s Course on Camp Joseph T. Robinson in North Little Rock.
- March 24, 2017 – Secured federal funding to hold the California Office of Emergency Services (CalOES) Safety Assessment Program class. Our partners at the Arkansas Electric Cooperative Corporation generously provided a facility. The CalOES Program unofficially sets the standard for post-disaster building assessment.
- June 15, 2017 – Held an Onsite Leadership Course at Arkansas State University.
- June 16 and 17, 2017 – Held two just-in-time training sessions on the Collector App used to collect information during building assessments
- June 16 and 17, 2017 – Held two refresher ATC-20 Post-Earthquake Building Assessment courses in conjunction with the multi-state functional earthquake exercise.
- October 5, 2017 – Held an ATC-20, Post-Earthquake Building Assessment course in Russellville, AR, at Entergy’s Arkansas Nuclear One facility. This training included an extra section about the effect of the 2011 U.S. earthquake on Virginia’s North Anna nuclear facility.
- October 23, 2017 – Held an ATC-20, Post-Earthquake Building Assessment course in Little Rock, AR, at the Arkansas Electric Cooperative Corporation.
- October 24, 2017 – Held an Onsite Leadership Course in Little Rock, AR, at the Arkansas Electric Cooperative Corporation.

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)*

In 2010, four FEMA regions created four different earthquake plans addressing the New Madrid Seismic Zone and a National Level Exercise was conducted to test those plans in 2011. These plans only addressed response operations for the first 72-120 hours post impact.

A project has been 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 is funded by FEMA at the national level and includes five personnel contracted specifically to support this initiative. One contractor, a mid-level planner, is embedded with ADEM.

Officially, the project began in January 2017, but roughly 40 state and federal stakeholders began in November by attending FEMA's National Planner's Course held on Camp Robinson. The Joint OPlan was scheduled to be completed and exercised nationally in April 2018. The timeframe for the exercise has been extended, but the planning team continues to work on the Joint OPlan with the goal of finishing it in spring of 2018.

The intent of the project is to have local, state, and federal stakeholders develop an executable Joint OPlan that will help save lives, alleviate human suffering, ensure the continuity of critical government functions, maintain and/or restore services, and ensure that essential infrastructure is stabilized and repaired.

Rehearsal of Concepts (ROC) Drill

The Rehearsal of Concepts Drill is a tabletop exercise held on an as needed basis to de-conflict any overlapping response efforts at the state-level for a New Madrid Seismic Zone event. The drill was held in March 2017 at the Armed Forces Readiness Center in Jonesboro. Participants came from multiple state agencies, FEMA, FEMA Region VI states, planners engaged by FEMA to assist with the FEMA and Arkansas joint planning project, voluntary organizations active in disaster, and private sector organizations who will respond to a catastrophic event. This year, for the first time, participants came from several counties in northeast Arkansas likely to experience significant impacts from a strong earthquake on the New Madrid Seismic Zone. The intent of this exercise was to determine the areas in which different agencies/entities will stage their resources and personnel in the event of a catastrophic event. The results of this drill will assist the Arkansas Department of Emergency Management and FEMA Region VI with upcoming planning efforts regarding the New Madrid Seismic Zone.

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 and notification system and its personnel accountability standards in March of 2015.

In 2016, the Central United States Earthquake Consortium (CUSEC) adopted a program created by the Environmental Systems Research Institute (ESRI) to collect information that can be conveyed to the State Emergency Operations Center during disaster. The “Collector App” was successfully tested and integrated into INSPARK training in 2016 and is used as the primary means of data collection during trainings and real-life events.

The Arkansas Department of Emergency Management, with funding from the National Earthquake Hazard Reduction Program (NEHRP) sponsored a multi-state, collaborative training, exercise, and workshop, in June 2017, at Arkansas State University in Jonesboro. A-State provided a venue and offered participants food and lodging on campus. Our partners at the Central U.S. Earthquake Consortium (CUSEC) helped obtain and organize materials for the event. Participants in the event, many of whom are volunteers who have committed to the program, came from A-State, the Arkansas Geological Survey, the Arkansas Wing of Civil Air Patrol, FEMA, Missouri, Tennessee, and Indiana.

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. Oklahoma is just beginning to build its inspection program so two representatives from Oklahoma Emergency Management attended the June training event as observers.

In December 2016, the INSPARK leadership, the Central United States Earthquake Consortium, and the State Emergency Management Assistance Compact (EMAC) Coordinator worked to create Mission Ready Packages (described in section D) to streamline the process required for groups of building inspectors to be deployed state-to-state through the Emergency Management Assistance Compact. This capability was tested in the exercise portion of the June 2017 event.

October 11, 2017 – INSPARK leadership met at ADEM with the State Earthquake Program Manager to discuss next steps to maintain and grow the building inspection program going forward.

Arkansas Air Coordination Group

To gain situational awareness following a catastrophic earthquake, the response community will rely heavily on aviation reconnaissance. ADEM's Earthquake Program Manager conducted a meeting with the Arkansas Air Coordination Group in January 2017, to de-conflict response operations that may take place after a catastrophic earthquake. This meeting included aviation partners throughout the state such as the Arkansas Wing of Civil Air Patrol, state agency representatives, and airport managers. The purpose of the meeting was to enable development of a common operating picture and to standardize operating procedures during emergency air operations.

Arkansas Voluntary Organizations Active in Disaster (VOAD)

The Arkansas Voluntary Organizations Active in Disaster have partnered with the National Center for Missing and Exploited Children to serve as one of three 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 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.

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

Mutual Aid Support System/Mission Ready Packages

ADEM worked with other CUSEC member states on the Mutual Aid Support System (MASS) database of Mission Ready Packages (MRP). An MRP is information about the cost, the size, the necessary supporting infrastructure, etc. required to deploy a specific capability. Collecting that information before a disaster occurs can shave 24 to 36 hours off the time it takes to mobilize a resource. MASS was originally developed by the state of Kentucky to store and track Mission Ready Packages as capabilities are developed across the nation. The MASS software has been modified so that information can be downloaded into the Emergency Management Assistance Compact Operating System (EOS). This saves the hour that might be required for a human to hand enter information into the Operating System. MRPs are organized and developed by resource owners or providers and coordinated through state emergency management agencies. MASS will provide emergency management agencies with real-time tracking of the resource inventory and allow states to see the capabilities other states' can send to help.

In December 2016, Arkansas held a workshop with the leadership of the building inspection program to create Mission Ready Packages for building inspection teams as a tool to accelerate deployment of Arkansas teams both in and out of state. These were loaded into the MASS system in the spring of 2017. The Arkansas Geological Survey also created an

Arkansas specific Mission Ready Package for geologists and GIS professionals to respond after earthquakes and other natural disasters in other states.

Fifty-three of the 263 Mission Ready Packages currently in the MASS system belong to Arkansas. Arkansas is a leader in this nationwide effort.

In addition to the single state resources in MASS, the Arkansas Geological Survey has collaborated with nine other state geological surveys in multiple workshops facilitated by FEMA, the Central United States Earthquake Consortium (CUSEC) and its contractor (Hagerty) to create national Mission Ready Package templates for geologists and GIS professionals to respond after earthquakes and other natural disasters.

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 Wal-Mart, to identify what types of resources will be available within the State of Arkansas during a catastrophic earthquake response. Private sector partners have limited visibility of operations in the State Emergency Operations Center (SEOC). 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 26, 2017 in Jonesboro, Arkansas
 - Cristi Harvey, an Arkansas State University intern, presented on her work with CUSEC to expand the Quake Catcher Network.
 - Martha Kopper, of the Arkansas Geological Survey, updated the group on the recent Oklahoma earthquakes and the Arkansas Geological Survey's preparation for the 2017 Earthquake Exercise held in June. She also spoke about an event in Sacramento, CA.
 - ARGEAC separated into four working groups to help address issues within safety, mitigation/engineering, education and response areas of the earthquake hazard.
 - Dr. Deborah Purcell, Arkansas State University, presented on Vulnerable Populations in Disaster.
- July 20, 2017 in Beebe, Arkansas

This meeting focused on the Earthquake workshop, training, and exercise event of June 14-17, 2017.

 - Steve Moore, ADEM Exercise Section Chief, presented the overall picture of the June event and its results to the ARGEAC group.

- Brian Blake, presented on the mobile information collection capability, maintained by the Central U.S. Earthquake Consortium (CUSEC) that was taught in the workshop and tested in the exercise.
- Martha Kopper and David Johnston presented on the Arkansas Geological Survey's part of the June event. AGS exercised a Clearinghouse Plan that will integrate the scientific community into the earthquake response. Ms. Kopper also presented on the Santa Barbara, CA, incident in mid-May that was at first thought to be an earthquake, but later was determined to be a false alert.
- Ross Schultz, ADEM EMAC Coordinator, presented on the EMAC aspect of the June exercise with Taunya Kidd, ADEM Operations Planner, who spoke on the use of GIS in the exercise.
- Steve Sharp, P.E. and Danna Weaver presented on the building inspection piece of the June exercise, which included both classroom and just-in-time training.

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 April 25-27, 2017, in Oklahoma City, Oklahoma. 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. At this year's meeting, the group was briefed about activities undertaken in response to the Cushing, Oklahoma, earthquake and trained on effective ways to secure manufactured housing to mitigate earthquake effects.

Emergency Management Assistance Compact

The Emergency Management Assistance Compact (EMAC) is the nation's state to state mutual aid system. It allows states to send personnel, equipment, and commodities to assist with response and recovery in other states. The National Guard deploys from state to state under the EMAC system. EMAC was ratified by U.S. Congress (PL 104-321) and is law in all 50 states, the District of Columbia, Puerto Rico, Guam, and the U.S. Virgin Islands.

In 2017, Arkansas participated in the multi-state exercise held in Jonesboro, June 14-17. This exercise tested the in-processing function of EMAC personnel – the capability of Arkansas to account for responders from other states when assistance is requested across state lines.

Volunteer personnel, from other states, were badged, briefed, given specific mission orders, and debriefed by Arkansas personnel. As an additional challenge, the in-processing was exercised with limited staffing.

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.

Arkansas participated in each of three IERSP meetings held this year. The focus of this year's meetings was to document the resources that the IERSP states can deploy to assist each other in response to a catastrophic event.

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.

Arkansas' civilian and military emergency management personnel also participated in New Mexico's Vigilant Guard Earthquake Exercise along with the other members of the IERSP. Vigilant Guard is an annual exercise for the National Guard and local, state, and federal emergency agencies to coordinate and practice emergency response techniques.

ShakeOut

The Arkansas Earthquake Program participated in the Central United States ShakeOut in 2017. 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 was held on October 19 at 10:19 am. We had 68,047 participants in the state of Arkansas, which fell into the following categories:

- 79 individuals and families
- 2164 childcare centers and pre-schools
- 54,202 K-12 students
- 1,380 College or University Students
- 373 local government workers
- 6,799 state government workers
- 76 federal government workers, including military

- 212 businesses
- 25 hotels and other lodgings
- 1677 healthcare workers
- 170 senior facilities/communities
- 300 disability/AFN organizations
- 165 non-profit organization workers
- 250 preparedness workers/organizations
- 56 faith-based organizations
- 75 museums, libraries, parks, etc.
- 23 youth organizations
- 6 media organizations
- 15 other

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.

Additional Coordination Activities

Below is a list of significant conference calls, presentations, and meetings.

- November 1-2, 2016 – ADEM hosted a meeting of the Arkansas Geological Survey and its counterparts in surrounding states. At this meeting, attended by our partners in the Central U.S. Earthquake Consortium, the state Surveys discussed a plan for a clearinghouse from which geological information will be disseminated after a catastrophic earthquake.
- January 19, 2017 – ADEM hosted an Air Coordination Group meeting as part of the re-writing process for the Joint OPlan.
- January 27, 2017 – ADEM briefed Game and Fish Commission mid-level leadership and on their role, as Coordinating Agency for ESF #9 Search and Rescue, in catastrophic earthquake and other disasters.
- February 15-17 – Participated with the National Guard in a Sustainment Working Group Meeting which was a National Guard-centric discussion relating to resource distribution and responder sustainment in the aftermath of a catastrophic earthquake.
- April 25-27, 2017 – Participated in the National Earthquake Program Manager's Meeting in Oklahoma City, OK.
- August 31, 2017 – ADEM Operations held an invitation only meeting for northeast Arkansas counties to strengthen the relationships and cooperation between those jurisdictions as they support each other after a catastrophic earthquake. A measure of the success of that meeting is that one of the counties initiated a follow up meeting on September 29, 2017, where those discussions continued.

- 2016/17 – The Earthquake Program Manager participated in quarterly FEMA/State conference calls and monthly conference calls between the eight central U.S. earthquake states (AR, MO, IL, IN, KY, TN, MS, AL) and partners throughout the year.
- 2017 – The Earthquake Program Manager worked extensively with CUSEC and ADEM Public Information Officers to publicize the Central United States ShakeOut Exercise on October 19, 2017.

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:

- October 21, 2016 – Hosted a booth at the University of Central Arkansas Benefits Fair.
- January 11, 2017 – Presented to White County Local Emergency Preparedness Committee on INSPARK and earthquake awareness.
- April 29, 2017 – Hosted a booth at McCain Mall in North Little Rock for Safety Days.
- October 21, 2017 – Co-hosted a booth, with Arkansas Geological Survey, at the Arkansas State University Science Expo in Jonesboro.

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 and the Federal Emergency Management Agency, many Arkansas citizens have become aware of the potential threat posed by the New Madrid Fault System. 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.