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EARTHQUAKE CONSORTIUM

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MULTI-STATE PLANNING: A REALITY TO EARTHQUAKE RESPONSE, RECOVERY AND MITIGATION PLANNING EFFORTS IN THE CENTRAL U.S.

INTRODUCTION

With the understanding that the impact of a significant earthquake in the New Madrid Seismic Zone (NMSZ) will cross state borders in the central US, representatives from the fields of emergency management, science, public health and academia institution all emphasize the need for multi-state coordination.

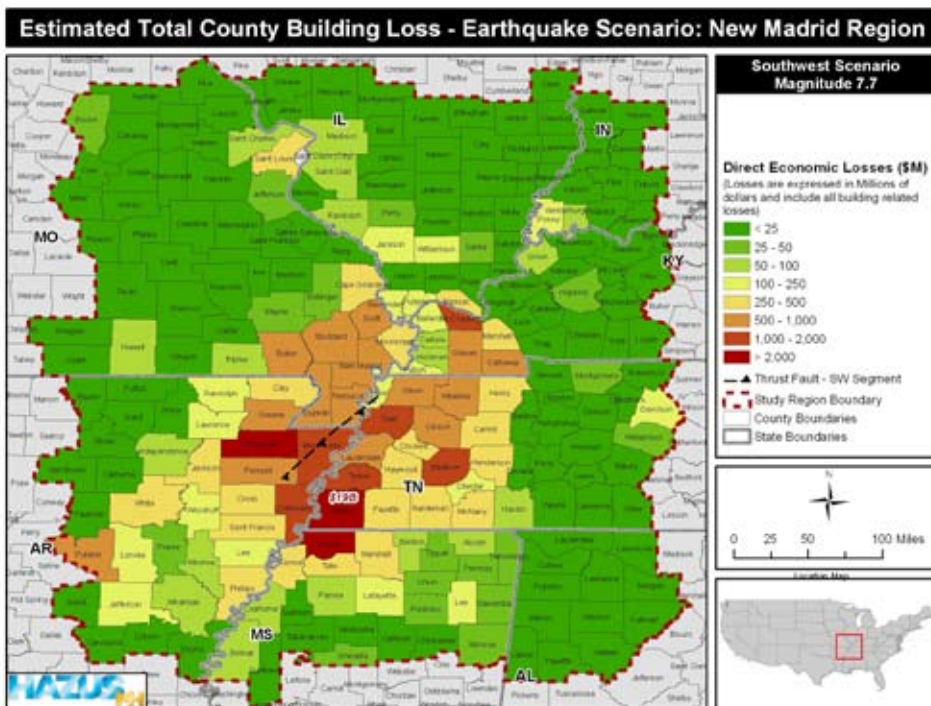
Collaboration between governmental and non-governmental organizations in this 8 state/4 FEMA region area of the country is essential to how quickly and effectively the response and recovery phases will be addressed following a NMSZ catastrophic seismic event.

This issue of the CUSEC Journal will discuss several current multi-state planning initiatives that are actively being coordinated in the region.

POST-EARTHQUAKE TECHNICAL INFORMATION CLEARINGHOUSE

The Post-Earthquake Technical Information Clearinghouse (PETIC) has the primary purpose of facilitating coherent and methodical investigations of the physical impacts of an earthquake, the gathering of perishable data, and the tracking of field investigations. It will also help ensure that all areas have been thoroughly surveyed for structural damage and ground failure.

Continued on page 2



This map, created from the FEMA loss estimation software, HAZUS, shows estimated building losses from an earthquake in the central United States. On April 18, 2008, a 5.2M earthquake struck near Mt. Carmel, Illinois, and was reportedly felt by more than 40,000 people in as many as 18 states. This event serves as a reminder that earthquakes in the central U.S. can have a multi-state impact and the need for multi-state planning and coordination are essential elements to preparing for larger events.

Map Source: Doug Bausch, FEMA, 2005

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Serving as the staging area for researchers and field investigators, the PETIC's main objectives will be to:

- Serve as a check in point for all researchers
- Organize the collection of data throughout the impacted area
- Keep track of the location of field investigators
- Hold daily briefings on the field investigators' findings
- Convey pertinent information to the EOC
- Develop detailed Iso-seismal (intensity) maps
- Identify research needs that should contribute to mitigating the impact of future earthquakes

The main priorities for the field investigators will be to:

- Document structural damage
- Document ground failure
- Gather performance ground truth data
- Monitor aftershocks to increase knowledge of fault systems
- Communicate their findings daily to the PETIC

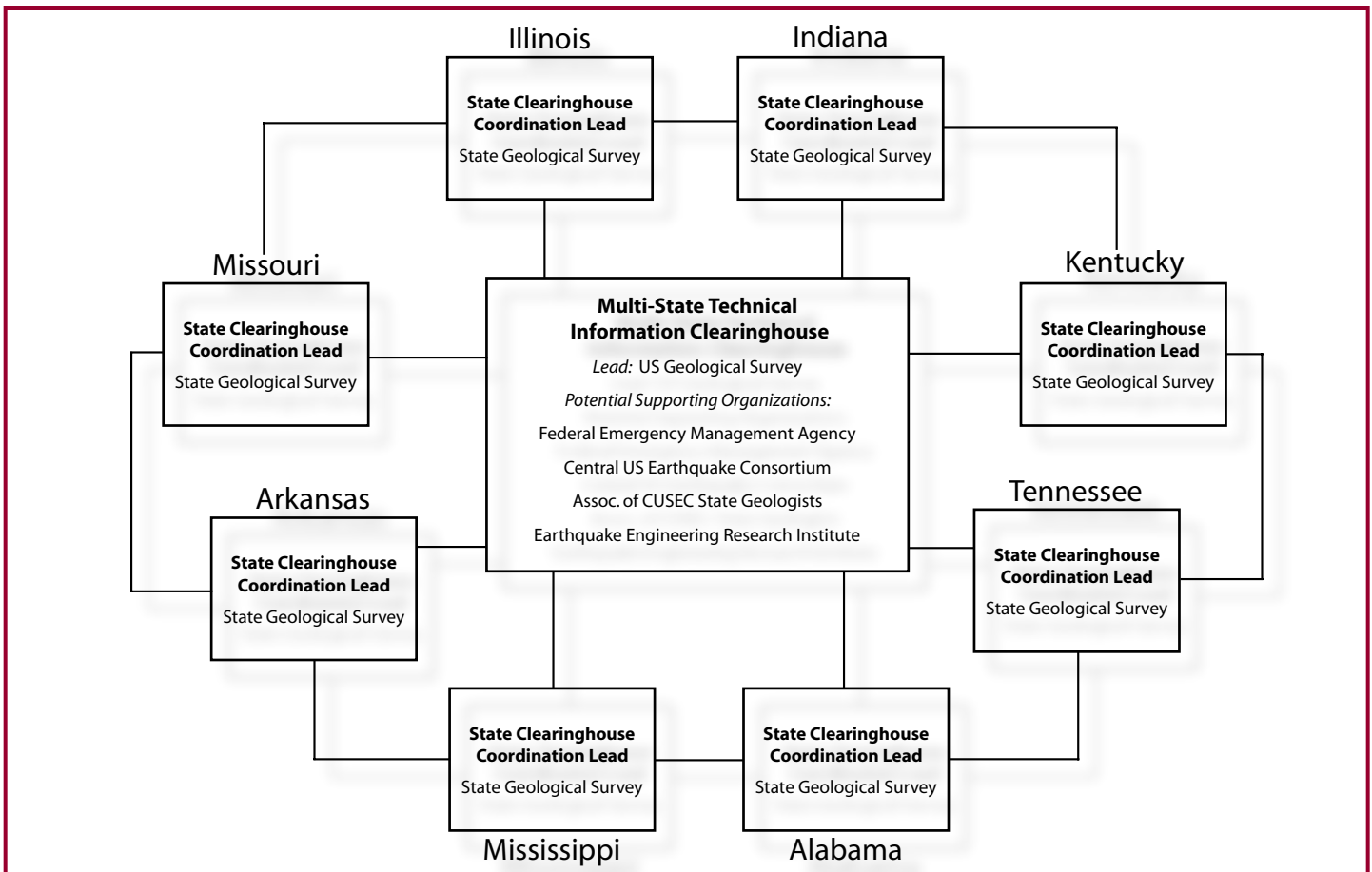
Information collected by field investigators/researchers will be shared with emergency management and first responders to assist them in making wise decisions when approaching various areas to help citizens so they (responders) will not have to be rescued themselves. In the event of a major earthquake in the central US, each state in the region in coordination with CUSEC will establish a State Technical Information Clearinghouse (STIC) to perform the objectives and goals stated earlier.

It is also understood that with the establishment of multiple STICs, there will be a need for a Multi-State Technical Information Clearinghouse (MSTIC). The MSTIC's two main roles will be to: 1) effectively manage and allow collaboration and coordination among the STICs and 2) to serve as a point of coordination to collect and disseminate information from a central source. In addition to performing all of the functions as facilitate collaboration and coordination among the STICs, the MSTIC will also:

- Collect/verify information from STICs
- Monitor the collection of perishable data throughout the impacted area
- Track the location of STIC field investigators
- Disseminate field observations to emergency management
- Develop detailed maps
- Respond, where possible, to requests for assistance from any STIC
- Coordinate the documentation of information collected from field investigators
- Supplement data needs of the state EOCs and FEMA

The eight individual State Geological Surveys will be responsible for maintaining the associated STIC, while the US Geological Survey (USGS) will have the responsibility of maintaining the MSTIC. Any of these clearinghouses may have members from different organizations involved. These organizations may include -

- State Geological Survey
- State Emergency Management
- US Geological Survey
- Federal Emergency Management Agency
- Central U.S. Earthquake Consortium
- Association of CUSEC State Geologists
- Earthquake Engineering Research Institute



This diagram shows how information in the MSTIC/STIC concept might flow. This concept will be exercised in 2011 as part of a series of multi-state drills to test earthquake response plans

NEW MADRID SEISMIC ZONE CATASTROPHIC EARTHQUAKE PLANNING

As mentioned in previous issues of the CUSEC Newsletter, CUSEC, in collaboration with the Federal Emergency Management Agency (FEMA) initiated the New Madrid Seismic Zone (NMSZ) Catastrophic Planning Initiative. The primary goal of this initiative is to increase national readiness for a catastrophic earthquake in the NMSZ. This project entails a series of earthquake scenario-driven workshops conducted in each Member State. These workshops bring key members of local, state and federal response agencies together to address response and recovery issues including search and rescue, mass/medical care and sheltering. The same series of workshops will be conducted at a regional level beginning this fall.

Through this project FEMA hopes to produce the following beneficial products:

- A comprehensive catastrophic earthquake planning scenario for the central US, State Earthquake Response Annexes (as well as local annexes where applicable),
- Federal/regional NMSZ Catastrophic Earthquake Response Annexes,
- An overall national plan for a New Madrid earthquake scenario that integrates all of the aforementioned plans into a single response system and
- A plan maintenance schedule and materials for training and exercises for the individual plan annexes and the overall national plan.

For more details about the NMSZ Catastrophic Planning Initiative, you can download the project overview brochure from the publications section of the CUSEC website. Just log on to: www.cusec.org.

APRIL 18, 2008 ILLINOIS EARTHQUAKES SHAKES UP THE CENTRAL U.S.

Tremors from a moderate earthquake—which caused no injuries and minor damage—shook many central U.S. residents awake at 4:36 a.m. on April 18, 2008. According to the US Geological Survey (USGS), the magnitude 5.2 earthquake’s epicenter was near the town of West Salem, Illinois, about 60 miles northwest of Evansville, Indiana. Also according to the USGS, residents from 18 states and Canada flooded the USGS “Did You Feel It?” website with reports—as of now, the total number of felt reports is 41,111 for this particular seismic event.

Knowing that media markets crossover in most areas of the central U.S., the Association of CUSEC Public Information Officers (PIO), —a group which is comprised of the public information officers from each CUSEC member state emergency management agency and other public information officers from other organizations—prepared a pre-scripted news release/earthquake announcement in December of 2007 to make sure that accurate and unified messaging would be disseminated to the public in the event of a significant earthquake in the NMSZ. As it turns out, this preparation was beneficial to the information response phase of the April 18, 2008 earthquake.

After the events of that day, the initial news release/earthquake announcement that was written and distributed—at the time of the earthquake—to the public from each CUSEC State Emergency Management PIO was collected and reviewed. Information on all eight news releases was exactly the same, leaving no room for confusion. This multi-state pre-disaster planning success encourages the group to continue to collaborate on various projects and activities. In conclusion, the implementing of multi-state coordination among the Association of CUSEC Public Information Officers has been successful because each member has learned from past experiences—how vast amounts of conflicting information about the same event can do the public more harm than good. The group continues to work diligently to send unified messages—where applicable—to the various media outlets in the region.

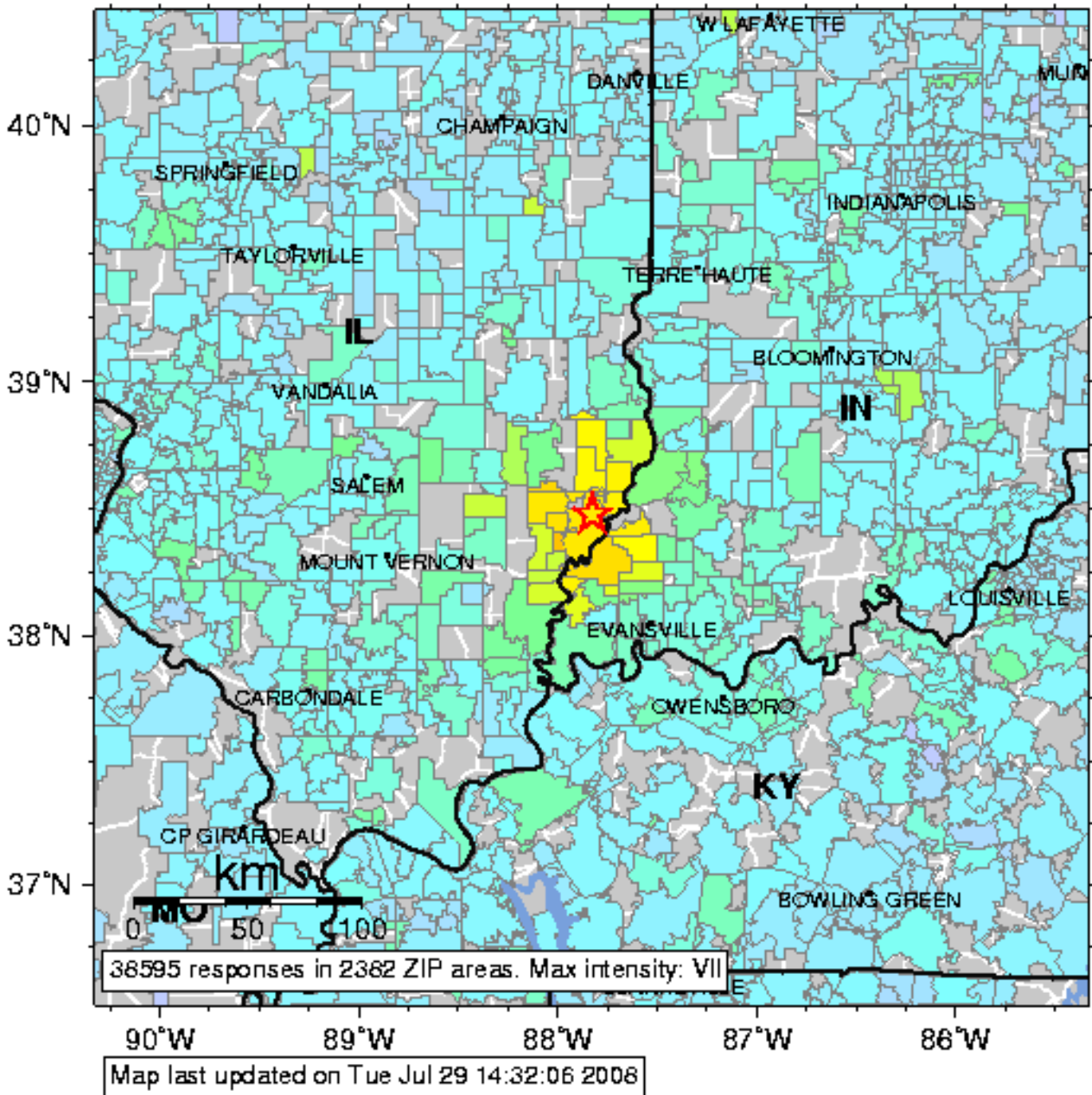
NON-STRUCTURAL DAMAGE PHOTOS FROM THE APRIL 18, 2008 EARTHQUAKE



Photos courtesy Dr. Norman C. Hester, Assoc. of CUSEC State Geologists

USGS Community Internet Intensity Map (21 miles SW of Vincennes, Indiana)

ID:2008qza6 04:36:58 CDT APR 18 2008 Mag=5.2 Latitude=N38.48 Longitude=W87.83



INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+
SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
DAMAGE	none	none	none	Very light	Light	Moderate	Moderate/Heavy	Heavy	Very Heavy

This community internet intensity map, from the US Geological Survey, shows areas in Illinois, Indiana, and Kentucky that reported feeling the April 18, 2008 5.2M Mt. Carmel, Illinois earthquake. This map is a product of the "Did You Feel It?" program, which allows individuals to register what they felt after a large earthquake. The program is internet based, and is housed on the USGS website.

A link to the Did You Feel It? program can be found on the CUSEC homepage.

AROUND THE REGION

MEMBER STATE SPOTLIGHT - KENTUCKY

With a history of earthquakes in the state, the Kentucky Division of Emergency Management (KyEM) continues to better prepare Kentucky residents for seismic events through public awareness and coordination with other state, federal and non-governmental agencies. The agency's earthquake program has been instrumental in keeping Kentuckians up to date on the latest earthquake hazard information and what government is doing to address the issue.

Through this program, KyEM participates in a number of activities geared towards public awareness/preparedness, mitigation, multi-state planning and research. During the 2008 Earthquake Awareness Week in February, KyEM hosted several events including an Earthquake 101 course, a statewide school earthquake drill and a non-structural mitigation class in which earthquake literature was provided to all participants at each event. Kentucky's State earthquake Council also recently reformed to include multiple agencies to coordinate earthquake efforts on the state level. Currently, the agency is working with a Kentucky Hazard Mitigation Officer to fund an earthquake mitigation project in Marshall County, and to host a Cost-Benefit Analysis class in the western part of the state. KyEM is also participating in the New Madrid Seismic Zone Catastrophic Planning Initiative and has completed four—3 area, 1 statewide— major workshops.

KyEM's new director, John Heltzel began overseeing the daily operations of the agency in July of 2008. Prior to his appointment, he was the president and managing partner of CyberDefenses, Inc., an Austin, Texas-based computer security firm, and a Brigadier General in the Kentucky Army National Guard. Heltzel was chief information officer for the Department of Military Affairs and Kentucky National Guard from 1984 to 2006. He also served in the Division of Emergency Management as one of the agency's initial staff duty officers where he directly assisted in the development of the first duty officer handbook and the establishment of internal standing operating procedures.

As KyEM's Earthquake Program Manager, Lori King's responsibilities include coordinating February Earthquake Preparedness Month, responding to media inquiries regarding earthquake preparedness and responding to earthquake and tremor reports in the state. Prior to joining KyEM, Lori worked with the Marshall County Purchase District and Pennyrite District Health Departments as a Bioterrorism Training Coordinator. She also worked as Public Information Officer for several emergency service organizations in Marshall County.



Kentucky Division of Emergency Management is a division of the Kentucky Department of Military Affairs and its role and function are governed by legislative action as dictated in Chapter 39 of the Kentucky Revised Statutes, <http://www.lrc.ky.gov/krs/titles.htm>

KYEM consists of the main office located on Boone National Guard Center in Frankfort, Ky and 14 Area Offices located throughout the state. We have many internal programs, including ; the Chemical Stockpile Emergency Preparedness Program, Earthquake, Mitigation, Search and Rescue, Training, and Amber Alert. KYEM also has an active Public Assistance and Individual Assistance programs that, during times of declared disasters, will coordinate with the Federal Emergency Management Agency to offer assistance to those who qualify at disaster field offices set up where they are needed.

ASSOCIATE STATE SPOTLIGHT - IOWA



Even though it is a very low to no consequence state relative to impact from the New Madrid Seismic Zone (NMSZ), Iowa—a CUSEC Associate Member State—is determined to be ready to support any CUSEC Charter Member State after a large earthquake in the central U.S. region. According to the agency’s multi-hazard response plan, Iowa Homeland Security and Emergency Management Division (IHSEMD) will dispatch any needed resources to the central U.S. ranging from personnel to equipment and medical supplies.

The agency is also rewriting its sheltering annex to better assist a possible influx of New Madrid disaster victims with housing during the recovery phase. David Miller has been the agency’s administrator since August of 1999. He has the primary responsibility for the development and publication of IHSEMD’s administrative rules and is also responsible for the coordination of the division’s strategic planning efforts. Steve Zimmerman is the agency’s Preparedness Bureau Chief.

CUSEC PARTICIPATES IN ISCRAM

CUSEC Executive Director, Jim Wilkinson presented a paper about the integration of information systems for post-earthquake research response to attendees at the *5th Annual International Conference on Information Systems for Crisis Response and Management (ISCRAM)* on the campus of George Washington University in Washington D.C. on May 6. ISCRAM is an international community of researchers, practitioners and policy makers involved in or concerned about the design, development, deployment, use and evaluation of information systems for crisis response and management.

The National Earthquake Hazards Reduction Program (NEHRP) has identified that the creation and maintenance of a repository of important post-earthquake reconnaissance data as one of its Strategic Priorities that will be emphasized in its new Strategic Plan.

Wilkinson’s presentation covered the seismic hazard in the central U.S., the CUSEC organization and its current regional planning focus. He also expressed the importance of multi-state coordination with an emphasis on the Post-Earthquake Technical Information Clearinghouse and the need for a closer working relationship between the earthquake research community and emergency management.

Co-authors of the paper—Dr. Norman Hester from the CUSEC Association of State Geologists, Theresa Jefferson, Assistant Professor at George Washington University and Steve Horton, Research Scientist at the University of Memphis’ Center for Earthquake Resource and Information (CERI)—were also present.

CUSEC HOSTS GIS CONFERENCE

CUSEC hosted a first-ever working level conference on current remote imaging technology and how Geographic information Systems (GIS) efforts, from the states and federal government, could be used for rapid post-earthquake analysis. This day-and-a-half workshop will be held in Southaven, Mississippi on July 15 and 16. Twenty-Five participants from federal, state and academic institution are expected to attend. Conference hosts aimed to achieve the following outcomes:

- To identify those common GIS layers that should be used for REGIONAL damage assessment (e.g., the Mississippi River flood control system)
- The identification of pre-scripted missions for post-event remote imaging Discussion on integrating remote imaging into state emergency operations centers to support emergency management operations
- The desirability of establishing a CUSEC working group for GIS and remote imaging
- Discussion on the development of training programs that can get remote imaging products into the hands of local jurisdiction emergency managers
- To including a GIS discussion at the upcoming FEMA regional workshops

The results of the workshop will appear in the Fall issue of the CUSEC Journal.

ILLINOIS GOVERNOR CREATES SEISMIC SAFETY TASK FORCE



In an effort to better protect the lives and property of home and business owners from a damaging earthquake, Governor Rod Blagojevich has directed state agencies to review and enhance the state's current earthquake damage prevention strategies by announcing the creation of the Illinois Seismic Safety Task Force (SSTF) in May of 2008. The SSTF will work to enhance earthquake mitigation measures by assessing current (earthquake) mitigation strategies, especially in the high-risk areas along the fault lines in the southern part of the state. The taskforce will then provide the governor with formal recommendations to further enhance preparedness, which is one of its main objectives. Secondly, the taskforce will identify ways to enhance protections for home and business owners who need earthquake insurance. Other objectives include:

- To review relevant public, commercial and residential building codes and the performance of non-structural components, particularly in high earthquake risk zones
- Assess and provide guidance on consumer education on earthquake insurance for public, commercial and residential properties, particularly in high risk earthquake zones
- Consider the creation of Illinois Earthquake Risk Zones and an Illinois Seismic Research Network to determine how Illinois seismic monitoring can be enhanced, if necessary
- Explore public-private partnerships to heighten individual and business awareness of earthquake risk and related mitigation practices

To accomplish the above objectives, the taskforce will work with local and national authorities who have implemented effective best practices. The SSTF members include State Director of the Illinois Emergency Management Agency (IEMA), Andrew Velasquez III, Director of the Illinois Division of Insurance, Michael McRaith and representatives from various public and private sector organizations as well as representatives from the academic field.

THE CENTRAL U.S. IS EARTHQUAKE COUNTRY

In cooperation with Dubois County EMA and the Indiana Department of Homeland Security (IDHS), and CUSEC hosted a class titled "The Central US is Earthquake Country" in Jasper, Indiana on June 26.

The class provided attendees with an overview of the Central US earthquake hazard, which has gotten increased attention since the earthquake near Mt. Carmel, Illinois on April 18. Much of the information presented was focused on the New Madrid and Wabash Valley seismic zones. Specific topics in this one-day class were:

- An overview of the science behind earthquakes
- Description the Indiana earthquake hazard
- Summary of Indiana's planning and mitigation efforts
- Primer on earthquake safety

Class instructors included former Director of the Indiana Geological Survey, Dr. Norman Hester and CUSEC Training and Exercise Officer, Paul Hogue.

"The Central US is Earthquake Country" is part of an ongoing effort to increase earthquake awareness in the central U.S.

DISASTER MEDICINE 101 COMES TO MISSOURI

CUSEC and The Centers for Disease Control and Prevention (CDC) teamed up to present a one-day pilot class titled "Disaster 101: Post-Earthquake Public Health and Medical Issues in the New Madrid Seismic Zone." in Sikeston, Missouri on April 10, 2008.

Instructors were recognized experts from the federal, state and local levels of government, and their presentations centered around public health concepts related to the earthquake threat in the New Madrid Seismic Zone (NMSZ). Course attendees ranged from public health officials to first responders. This was the second presentation of this course and is part of an ongoing effort to address catastrophic planning issues related to the earthquake threat in the Central U.S.

For more information about the course and to view the presentations visit: <http://register.cusec.org>

CUSEC EXECUTIVE DIRECTOR TESTIFIES AT CONGRESSIONAL HEARING

In light of the recent destruction caused by earthquakes in the U.S. and around the world, CUSEC Executive Director Jim Wilkinson and several other colleagues testified to the U.S. Subcommittee on Energy and Mineral Resources in an oversight hearing—“The U.S. Geological Survey’s Earthquake Hazards Program-Science, Preparation and Response”—on May 22 in Washington, D.C.

The hearing focused on the U.S. Geological Survey’s (USGS) Earthquake Hazard Program—which seeks to minimize the tragic toll earthquakes can take on human life, property and infrastructure. The subcommittee asked a number of questions including what public awareness tools are being used to help residents living in earthquake prone areas prepare, mitigation efforts and the ability to predict future earthquakes. Wilkinson gave a brief overview of the central U.S. earthquake hazard and the impact that a major earthquake would have on the region. His testimony reads as follows:

“Geologists, seismologists, engineers, and economists believe that catastrophic earthquakes -- earthquakes whose effects are so severe that they will cause unacceptable levels of damage to buildings and infrastructure, economic loss, mortality, morbidity, and adversely affect the environment, production facilities, economic markets, and distribution systems -- are inevitable in the central United States (CUS). On the basis of what has happened with past earthquakes in the CUS and throughout the world in similar hazard and built environments, along with preliminary loss modeling, it is well known that a catastrophic earthquake can leave an indelible mark for many years on individuals, businesses, communities, infrastructure, insurers, and the nation.

Catastrophic earthquakes can adversely affect the environment, and overwhelm production facilities, distribution systems, and economic markets, jeopardizing the financial stability of businesses, insurers, communities, and the nation. Estimates of the economic losses from a catastrophic earthquake occurring today in the CUS are in the range of \$60-100 billion (based on FEMA’s loss estimation software, HAZUS-MH). The physical effects of such an earthquake would damage, destroy, and disrupt the normal functions of government, schools, hospitals, essential and critical facilities, and business; disrupt local and regional infrastructure; leave tens of thousands dead, injured, homeless, and jobless; divert tourism; reduce the tax base; use up community resources planned for health care, education, and other social programs; and deplete insurance and financial resources.

With little or no warning, an earthquake can strike the CUS, causing major physical, social and economic disruption in an area far greater than any we have seen in similar earthquakes in other areas of the country. The CUS is home to over forty four million people, with approximately 12 million at immediate risk, utilizing some of the nation’s oldest infrastructure, most of which was not designed with earthquakes in mind. Add to this the fact that a large percentage of the population lives in rural communities scattered over a large geographical area with fewer resources at their disposal to prepare for or recover from an earthquake, and it is easy to see why this region is so vulnerable.”

US Geological Survey Director David Applegate, Pacific Earthquake Engineering Research Center Director Lloyd Cluff and University of California Earth Sciences Director Thomas Jordan also testified.



NEW MADRID CATASTROPHIC PLANNING INITIATIVE UPDATE

Three CUSEC states held a total of six workshops from April-July as part of the New Madrid Seismic Zone Catastrophic Earthquake Response Planning Initiative.

Illinois added to the schedule a local workshop for July 29-30 in Carterville at John A. Logan Community College. Most of the Member states have now completed their workshops. Indiana's three local workshops were in Jasper (April 29-30), Bedford (May 21-22), and Peru (June 17). Jasper and Bedford are in the area of Indiana expected to be affected by an earthquake. The 5.2 magnitude earthquake that occurred April 18, 2008 near Mt. Carmel, Illinois, just prior to these workshops generated increased local interest. Both Jasper and Bedford are less than 100 miles from Mt. Carmel. The Peru workshop was to the north, in an area expected to primarily respond to the affected areas in the southern part of the state. A highlight of the Bedford workshop was the welcome by Mayor Shawna Girgis. Missouri's workshops were held in Jefferson City May 12-14 and Hannibal May 15. The Jefferson City workshop was primarily for State employees and Hannibal was for the local communities in the northeastern portion of the state. Regional workshops are scheduled to begin in the fall.

2008 NATIONAL EARTHQUAKE CONFERENCE RECAP

More than 400 people from various work backgrounds—emergency management, engineering, science, business, etc.—convened at the Westin Hotel in Seattle, Washington from April 22 to 26, for the National Earthquake Conference. The theme of this event was “Understanding Earthquakes: From Research to Resilience,” with conference objectives focused on:

- Understanding earthquake research
- Exchanging ideas about tools for earthquake hazard and risk
- Showcasing successful programs
- Learning from past disasters and building community resiliency

Speaker topics ranged from the current strategies and challenges of the National Earthquake Hazards Reduction Program (NEHRP) to Earthquake Risk Management from a Financial Accountability Viewpoint. Breakout sessions covered topics such as the Impact of Earthquakes on Rural Communities, the Role of Earthquake Insurance has in Economic Recovery and the Establishing of Post Earthquake Technical Clearinghouses.

The National State Earthquake Program Managers kicked off the four-day event with a meeting to discuss several issues including :

- 1) what types of programs/efforts should be included in their state earthquake program
- 2) the establishment of a state clearinghouse, Earthquake Awareness Week/Month
- 3) reports from each state earthquake program manager and FEMA headquarters representative(s)

Conference chairs and hosts were comprised of the executive directors of the following organizations: CUSEC, the Western States Seismic Policy Council (WSSPC), the Northeast States Emergency Consortium (NESEC), the Cascadia Region Earthquake Workgroup (CREW), the Emergency Preparedness for Industry and Commerce Council (EPICC), the Earthquake Engineering Research Institute (EERI), the Department of Homeland Security's Federal Emergency Management Agency (FEMA) and the US Geological Survey (USGS). Information about the 2008 National Earthquake Conference can be obtained at <http://www.earthquakeconference.org>.

The next National Earthquake Conference will be held in 2012 in Memphis, Tennessee. This conference will help commemorate the 200th Anniversary of the great New Madrid Earthquakes that occurred in central US during the winter of 1811 & 1812. You can visit: <http://www.newmadridbicentennial.org> for more information about this upcoming event.



CUSEC ANNOUNCES NEW CORPORATE PARTNER

CUSEC is proud to announce RIDG-U-RAK as its newest corporate partner.

RIDG-U-RAK is a leading manufacturer of rack storage systems for distribution centers, industrial warehouses, and retail shopping centers.

They have recently introduced a new, high-tech base isolated pallet rack storage system that has been tested up to a full 200% of seismic qualification, as outlined in the AC156 test and qualification criteria, with little or no merchandise shedding or rack damage. Unveiled at The Material Handling & Logistics NA 2006 Show in Cleveland, Ohio, RIDG-U-RAK’s new Seismic Storage System features patented, base isolation technology to reduce the effects of violent ground forces created during a seismic event. This new storage system is ideal for retail warehouse clubs, big box retailers, home improvement centers and distribution centers located in moderate to high seismic zones.

The RIDG-U-RAK Seismic Storage System was recently awarded first place honors for “Excellence for Innovation” in the earthquake mitigation category at the 2008 National Earthquake Conference. The Seismic Base Isolator is a product that attaches to the base of storage rack upright frames and is then anchored to the floor. During an earthquake, the base isolator absorbs much of the seismic energy before it gets to the rack structure itself. This results in a huge reduction (85%) in the seismic forces the rack structure must resist, which concludes in little to no rack damage or product shedding during even the most severe earthquakes. “From our testing we determined that our base isolation system can dissipate 85% of the seismic energy exerted on a storage rack system during an earthquake,” said James Courtwright, RIDG-U-RAK’s Chief Project Engineer.



For more information about RIDG-U-RAK, please visit their website at <http://www.ridgurak.com>.

TRANSPORTATION DEPARTMENTS IN ARKANSAS AND TENNESSEE GET EARTHQUAKE PREPARED

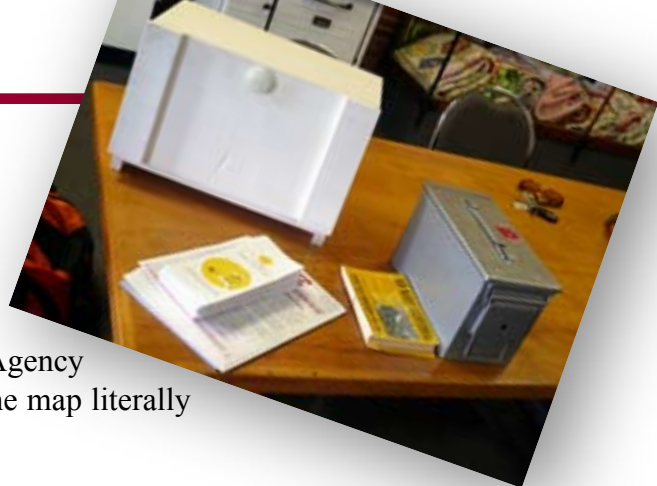
Recognizing the importance of this bridge to transportation and commerce in the country, Arkansas State Highway and Transportation (AHTD) along with the Tennessee Department of Transportation (TDOT) are giving the I-40/Hernando-DeSoto Bridge a seismic retrofit.

With funding support from the Federal Highway Administration (FHWA), contractors are making changes to the bridge which includes incorporating friction pendulum isolation bearings, strengthening columns and removing and reconstructing approach slabs. AHTD, TDOT and FHWA believe that these upgrades should enable the bridge to withstand little or no damage from a magnitude 7.0 earthquake. In a recent interview, David Nilles with AHTD said that the completion of this project will be in April of 2009.

WHAT'S SHAKING IN NEW MADRID?

by Susie Stonner, Public Information Officer
Missouri State Emergency Management Agency

Move over Capt. Jack Sparrow, treasure hunters are dumping paper maps in favor of electronic GPS hunts called geocache. A joint venture between CUSEC, Missouri State Emergency Management Agency (SEMA), and a special museum, is putting New Madrid, MO, on the map literally and figuratively with "What's Shaking in New Madrid?"



Geocaching is an outdoor treasure hunting game in which participants use a Global Positioning System (GPS) receiver or other navigational techniques to hide and seek containers called geocaches anywhere in the world. A typical "cache" is a waterproof container containing a logbook and a "treasure" usually a toy, trinket, or educational item. For fans of the "National Treasure" films, geocaching is similar to letterboxing, which uses references in landmarks to find treasure.

In late June, CUSEC, SEMA and a representative of the University of Memphis joined several New Madrid citizens at a "Historical Museum" (hint) in New Madrid to install a "cache" on the property.

"The opportunity to 'geocache' brings SEMA a new, fun, and innovative way to get earthquake information to our citizens. As we get closer to the 200th Anniversary of the New Madrid earthquakes of 1811-12, we will be looking at expanding our earthquake awareness efforts," said Ron M. Reynolds, SEMA Director.

From the logbook at the New Madrid Geocache -

July 9, 2008 "This is an interesting location in New Madrid and a must see museum. I've lived in Southeast Missouri for 18 years and this is the first time I have been to downtown New Madrid. I will be back when I have more time and can bring the grandchildren. When you go to find the cache, plan on spending some time and see the town and the history"



These photos show the installation of the What's Shaking? - New Madrid GeoCache in New Madrid, Missouri. The GeoCache is a joint effort between CUSEC, Missouri SEMA, & the New Madrid Historical Museum, designed to educate visitors about earthquakes, earthquake mitigation, and earthquake preparedness.

Visit www.geocaching.com to find a cache near you.

PIO'S MEET IN MEMPHIS FOR SUMMIT

CUSEC Member state public information officers Susie Stonner with the Missouri State Emergency Management and Jeremy Heidt with the Tennessee Emergency Management Agency presented information about the central U.S. earthquake hazard and efforts being made to address issues associated with the hazard's risk to attendants at a special summit for emergency management PIO's in Memphis, Tennessee, hosted by the Federal Emergency Management Agency (FEMA) and the National Emergency Management Association (NEMA).

In addition to presenting earthquake hazard information, Stonner and Heidt placed emphasis on multi-state coordination. They explained how it was beneficial in the information response phase of the earthquake that occurred on April 18, 2008. "We (CUSEC States) looked at all eight press releases about the earthquake and noticed that the information given to the public was exactly the same. Had we not pre-drafted a unified message for the public there would have probably been major confusion." Stonner said.

In the two-day summit, attendees talked about public information challenges—funding for public awareness promotion and training of representatives from the local county EMA's to perform PIO duties—and strategies to address them. FEMA External Affairs Director Jonathan Thompson presented an overview the agency's goals and stressed the importance of face to face interaction with the public. "We must succeed 100 percent in messaging to the public about what we do. We are the only agencies that can literally touch every citizen of this country." Summit attendants also discussed various ways on how to increase public and private sector partnerships and also talked about lessons learned from Katrina and 9-1-1.

RECENT CENTRAL U.S. EARTHQUAKES

DATE	LOCATION	MAGNITUDE	FELT REPORTS
April 18	Mt. Carmel, IL	5.2	41111
April 18	Olney, IL	3.4	920
April 18	Olney, IL	4.6	8146
April 21	Olney, IL	4.0	2876
April 25	Olney, IL	3.7	729
May 1	Olney, IL	3.3	208
May 5	Sappington, MO	2.7	727
May 6	Annandale, VA	1.9	701
May 10	Tupelo, MS	3.1	69
June 5	Vincennes, IN	3.6	168
June 9	Stillwater, OK	3.1	1
June 23	Dalton, GA	2.8	24
July 17	Vincennes, IN	3.1	143

UPCOMING CONFERENCES, TRAINING, ETC

WHEN	WHAT	WHERE
August 12-14	New Madrid Seismic Zone Conference	Rolla, Missouri
August 13-14	FEMA 154 & ATC-20 Course	Johnson City, Tennessee
August 19-21	HAZUS Comprehensive Data Management Course	Topeka, Kansas
September 2-4	2008 Illinois Emergency Management Conference	Springfield, Illinois
October 8-10	2008 Crisis Communications Round-Up	Kansas City, Missouri
October 12	Earthquake Engineering World Conference	Beijing, China

Visit the CUSEC website at www.cusec.org to learn more about upcoming events!

DATES TO MARK

New Madrid Seismic Zone Conference
 August 12-14, 2008 - This conference will provide a regional forum for the presentation, exchange of ideas, and potential solutions involved with preparing for a significant central U.S. earthquake. The conference will open communication with academia, government, non-government agencies and the private sectors to address the current and forecasted needs of the response and recovery community.

14th World Conference on Earthquake Engineering October 12-17, 2008 - Held every four years, the World Conference on Earthquake Engineering is the largest professional event in the field of earthquake engineering. The conference strives to promote innovation in reducing the impact of earthquakes on our society and natural environment. This years conference will be held in Beijing, China. Visit www.14wcee.org for more info.

New Madrid Seismic Zone Catastrophic Earthquake Planning – Fall/Winter 2008-2009. The NMSZ Catastrophic Planning Initiative is moving into the Regional Planning Phase as State and Local Planning Workshops conclude. The Regional Workshops will be taking place in Atlanta, GA, Denton, TX, Chicago, IL, and Kansas City, MO and bring together key organizations to address the issue of responding to a catastrophic earthquake on the New Madrid Seismic Zone.

The Central United States Earthquake Consortium is a not-for-profit corporation established as a partnership with the Federal government and the eight member states: Alabama, Arkansas, Illinois, Indiana, Kentucky, Mississippi, Missouri, and Tennessee; and nine associate member states: Georgia, Iowa, Louisiana, South Carolina, North Carolina, Ohio, Oklahoma, Nebraska and Virginia. The Federal Emergency Management Agency provides the basic funding for the organization.

CUSEC’s purpose is to help reduce deaths, injuries, damage to property and economic losses resulting from earthquakes occurring in the central United States. Basic program goals include: improving public awareness and education, mitigating the effects of earthquakes, coordinating multi-state planning for preparedness, response and recovery, and encouraging research in all aspects of earthquake hazard reduction.

STAFF

Jim Wilkinson	Executive Director
Peggy Young	Associate Director
Brian Blake	Program Coordinator
Jennifer Brumley	Administrative Assistant
Gwen Nixon	Accounting
Alisa Nave	Public Outreach Coordinator
Paul Hogue	Exercise/Training Officer
Roger Arango	Emergency Planner
Mike Calvert	Emergency Planner
RoyAnne Wilkie	Accounting Assistant

CUSEC Phone Number: (901) 544-3570
Toll Free (800) 824-5817
Fax (901) 544-0544
Email cusec@cusec.org
Website www.cusec.org

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Please send comments and suggestions to cusec@cusec.org

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- American Red Cross
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- Association of CUSEC State Geologists
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