

STATE OF TENNESSEE



WEST TENNESSEE SEISMIC SAFETY COMMISSION

wtssc.org

September 12, 2017
The University of Memphis
3892 Central Avenue
Memphis, TN

Agenda

- I. **CALL TO ORDER – Chair Graves**
Chairman Graves called the meeting to order.
- II. **WELCOME, INTRODUCTIONS – Chair Graves**
*Chairman Graves welcomed the commissioners and audience..
Brian Blake, Natasha McCallister of CUSEC and FEMA representatives*
- III. **ROLL CALL, QUORUM COUNT –Chair Graves**
*Bucy, Clyburn, DeBerry, Graves, Horton, Molder, Moore and Walker, noted as present. Walls absent
Chairman Graves announced that there was a quorum and asked Gary Patterson to present business items to the commission*
- IV. **APPROVAL of PREVIOUS MINUTES – Chair Graves**
Chairman Graves called for the approval of the May 24, 2017 meeting minutes. Motion to accept them by DeBerry, seconded by Moore, unanimous approval.
- v. **BUDGET REVIEW**

the committee about budget issues related to funds from the state and how they are appropriated to the commission.

-The WTSSC allocation FY 2018 is not included in this budget. These funds, \$65,000, will not be verified until October 1.

Motion to accept budget by Bucy seconded by Molder unanimous approval.

vi. OLD BUSINESS:

A. Reelfoot Lake Visitors Center Display Project

The WTSSC approved \$60,000 by unanimous vote on 5/25/17 to fund the TN Department of Environment and Conservation to produce and install earthquake awareness displays in the new Reelfoot Lake Visitors Center, which was currently under construction. On August 14, 2017 TDEC, Parks and Recreation informed the WTSSC Executive Director that all construction on the new facility had been halted due to cost over runs with no plans to complete the facility in the near future. These over runs became apparent following a TDOT audit of the original lead agency for the project, Mississippi River Corridor. No funds were ever distributed by the WTSSC for this work, either to TDEC or the Mississippi River Corridor.

TDEC Deputy Commissioner Hill also requested that the WTSSC consider updating the earthquake awareness displays in the existing Reelfoot Lake Visitors Center.

RECOMMENDATION:

WTSSC staff recommend the commission revisit this partnership opportunity when the status of the new facility becomes clear.

Reelfoot Lake visitors display, Patterson noted that TDOT had pulled out support for the project . Patterson noted that building had structural problems and the media reported about the problems. Patterson noted the economic impact for Lake County and related that he would report to the Commission at the next meeting. The commission is not obligated as no checks were made out or contracts signed. TDEC asked for new displays at the visitors center. Commissioner Bucy noted that the county mayors were looking for more funding but that the project had troubles. Patterson asked if the commission could help in any way. Graves noted that it was a mission of the commission to do so but the situation had to settle first. A question

asked if the old visitors center was up to seismic code and it was noted that if upgraded by Walker. Main issue was the pilings used in the building, various methods were discussed to fix the building.

B. Input on TN State Law on Mandatory Earthquake Drills in Schools

On 6/16/2017 the WTSSC Executive Director was contacted by the office of the TN Comptroller of the Treasury to assist the state in clarifying the area in TN for which earthquake drills should be mandated for schools. The current law is:

Title 49-Chapter 1-Part 3-Section 16 A and B (49-1-302)

“16) (A) Promulgate, in accordance with the Uniform Administrative Procedures Act, compiled in title 4, chapter 5, rules requiring each LEA that has a jurisdiction that lies entirely or partially within one hundred (100) miles of the New Madrid fault line to implement earthquake preparedness drills in each of the schools administered by that LEA. In developing the rules, the board shall consult and collaborate with the Tennessee emergency management agency and the state fire marshal. The rules shall include a model plan for earthquake preparedness drills in schools, and the model plan shall be suitable for adoption or modification by affected LEAs;

The drills shall be conducted at least twice every school year. A record of all earthquake preparedness drills, including the time and date, shall be kept in the respective schools and shall be made available for review upon request by the board.”

Notes:

-The requirement above does not preclude or displace the current requirement for tornado or fire drills. West TN schools will have more mandatory drills than the rest of the state.

-CERI has formally recommended that all schools west of the TN River as the area for which quake drills should be mandatory. This area roughly coincides with the “100 mile” area and coincides with geopolitical boundaries, such as the TEMA West Region, and geological boundaries that influence earthquake ground motions. This recommendation letter is attached as Appendix A.

Patterson noted the law requires 2 drills for schools within 100 miles of the seismic zone, with USGS help for proximity and vulnerability for the area west of the Tennessee river. Some areas might be but it agrees with geopolitical and geological boundaries. Patterson asked for clarification of the 100 mile zone, Patterson recommended it be done by West Tennessee counties. Patterson asked the commission to send a letter of support for the boundaries to the state comptroller on the subject. Discussion on drill amounts, protocols for the schools from commissioners members of the audience. Graves moved to support CERI by letter for the legislation for the amended boundaries and for extra drills. Clyburn asked that CUSEC and TDEC be mentioned also. Clyburn made the motion to take action. Motion to take action seconded by Bucy and passed unanimously

C. Sponsorship of FEMA Earthquake Workshop (March 2018)

WTSSC staff and Chair Graves are currently working with the Shelby County Office of Preparedness, TEMA, and the private sector to establish partnership for this meeting. *FEMA workshop, Patterson noted difficulties in working with FEMA but unknown about what support the meeting needs form the commission. Meeting numbers of about 200-250 and unknown venue. Patterson will work to find more information and Shelby Office of Preparedness and TEMA on the meeting. March 6-7 tentative meeting date. Graves noted he had been meeting with the Office of Preparedness about the meeting.*

vii. New Business

A. Proposal to Assess the Seismic Vulnerability of High Risk Schools in West TN

Possible Contributing Partners: TEMA and the NW TN Development District

Recent discussions with the State Comptroller’s Office on mandatory EQ drills for schools has caused a very important school safety issue to resurface. Damage to schools from earthquakes is largely driven by proximity to the source, but damage is also greatly influenced by structural and design features that are specific to each building. The WTSSC is uniquely suited to address these issues based on its experience in previous earthquake structural assessment projects for mass shelter facilities in the Greater Memphis Area and its close association and concern to support TEMA planning needs. The WTSSC partnership with the University of Memphis Dept. of Civil Engineering is also a cost-effective way to address building inventory assessment needs using federally approved standards for collecting data (ATC 20-21) and estimating potential structural damage (HazUS). HazUS evaluation is also a prerequisite to qualify for some TN Hazard Mitigation grants.

RECOMMENDATION:

Patterson relates work with TEMA and NorthWest Tennessee Development District no agreement just verbal. , boundaries vague, school sites and buildings different, project would look at seismic vulnerabilities with tools and measurements to find what they need for funds needed to do building upgrades and retrofitting. Patterson noted that many of the cities and counties do not have the funds to do the needed work and that this collaboration would be an important contribution to the seismic safety of the region, Pattterson recommended that this be addressed in a programmatic way using the resources of all the agencies concerned. Patterson mentioned the work of the HazMAE project in Lauderdale county doing similar work. Patterson proposed looking at Lauderdale, Dyer, Gibson for 40,000 using University of Memphis resources. TEMA has voiced support of the project. Patterson noted that it could be expanded to a multi county 3 year project if funding can be found. The cost breakdown would be roughly 1000 dollars a school and done efficiently if within the U of M administrative structure.

WTSSC staff recommend development of a collaborative project with TEMA and the NW TN Development District to assess structural vulnerability of 46 schools in the following counties:

Lauderdale County

Ripley Primary
Ripley Elementary
Ripley High
Lauderdale Middle
Halls Elementary
Halls Junior High
Halls High

Obion County

Obion Central High
Obion County Career Technology Center
Ridgemont Elementary
Lake Road Elementary
South Fulton Elementary
South Fulton Middle
South Fulton High
Black Oak Elementary
Hillcrest Elementary
Union City Elementary
Union City Middle
Union City High

Dyer County

Dyer County High
Three Oaks Middle
Northview Middle
Dyersburg Intermediate
Dyersburg Middle
Dyersburg Primary
Dyersburg High
Fifth Consolidated
Holice Powell Elementary
Finley Elementary
Trimble Elementary
Newbern Grammar

Gibson County

South Gibson County High
Medina Middle
Medina Elementary
Peabody High

Humboldt High
Milan Elementary
Milan Middle
Milan High
Spring Hill Elementary
Yorkville Elementary
Rutherford Elementary
Bradford Elementary
Bradford High
Trenton Middle
Trenton Elementary

The project proposal will be guided by previously established WTSSC standards for structural assessment:

- a. Utilize the WTSSC Sub Committee on School Safety to oversee this project.
- b. Utilize assessment tools and standards as approved by state and federal emergency management
- c. Each school consists of numerous buildings. This study should only address permanent structures that house 500 or more students and teachers, or may serve as mass shelter facilities. WTSSC staff estimate the 46 schools targeted in this proposal would require approximately 80 distinct structural assessments.
- d. Soil conditions can modify ground shaking at any site. This study will take this into consideration by utilizing soils maps and ground motion amplification maps where available.
- e. Assessments will include site visit and plan review (if available) but no invasive measures.
- f. The project will produce maps, and other forms of data, to conform with the planning needs of TEMA and other stakeholders.
- g. If additional funds are made available from WTSSC partners, the scope of the project would be expanded to other West TN counties in consultation with the School Safety Sub Committee.
- h. In consultation with TEMA, general data will also be collected for these facilities to contribute to their suitability as mass shelters in response to any disaster that creates a sheltering need. For example, number of parking spaces, availability of food service facilities, usable building space, washer/dryer connections, and backup generators are all considered by TEMA when designating or prioritizing shelter facilities. Shelter facilities may also be utilized for out of state disasters that do not affect local populations.
- i. Fiduciary management will be overseen by the University of Memphis.
- j. This will be an internal WTSSC project, as specified and allowed in the WTSSC Charter.

Potential Contributing Agencies: Both TEMA and the NW TN Development District have indicated interest in contributing to this effort, but no funds have been committed.

FUNDING REQUEST: WTSSC staff request \$50,000 to meet with stakeholders and finalize a proposal to assess these schools with oversight from the School Safety Sub Committee. The proposal will be based on previous WTSSC structural assessment protocols.

Commission Discussion on this proposal *the Commission discussed the request with input from Patterson on the possibilities of the use of HazMAE resources to help in the effort.*

Discussion

B. Proposal to fund “Shakeout” Public Service Announcement for Radio and TV in West TN

The WTSSC has produced Shakeout PSA’s every year since 2008. Shakeout, which is a national day for earthquake drills and awareness designated for October 19, 2017 and is implemented regionally through the efforts of the Central US Earthquake Consortium and its partners. In 2016, TN registration was at 226,858 on September 30 before WTSSC PSA’s were aired. This number grew to 433,856 by the time of the ShakeOut. The media buy for the 2016 WTSSC PSA’s are shown in Appendix C as an example.

This effort will follow the previous format developed by the WTSSC since 2008:

- a. Production of radio and TV/digital by Pale Moon Media. For 2017 Pale Moon will take on a larger role in working with various networks on data formatting and file transfer (see Appendix B). Pale Moon has demonstrated its proficiency in these matters through various projects for the WTSSC. Pale Moon will be paid \$2,700 for all services.
- b. All funds above production costs will be applied to a media buy for West TN, unless instructed otherwise by the Commission. As 2016 was an election year, WTSSC staff expect a much better return for our investment as the cost of air time should be significantly lower. The media buy for the 2016 ShakeOut PSA is attached for reference as Appendix C. The WTSSC utilizes the University of Memphis Marketing Department to purchase airtime in order to capitalize on the purchasing power of the University.
- c. A media buy is the only way to guarantee PSA airtime at optimal viewing times.
- d. For 2017, the WTSSC PSA will include \$5,000 in funds (in addition to the funds requested below) in order to increase coverage. Mr. Brian Blake, CUSEC Assistant Director, is present today and has supplied a letter of support (Appendix C) to support this partnership.

FUNDING REQUEST: WTSSC staff request \$35,000 to produce and distribute one television/digital PSA for television and one radio PSA to promote registration and participation in the October 19 Central US ShakeOut.

Commission Discussion on this proposal *Commission discussed the proposal and agreed to hel in funding, Patterson related that a psa could be done by Pale Moon Video, he would report the progress of the announcement at the next meeting.....*

VIII. QUESTIONS/COMMENTS FROM GUESTS AND ANNOUNCEMENTS

- A. Guest Comments**
- B. Event Announcement: The Great Central US Shakeout, October 19, 2017**
shakeout.org/centralus, Paterson announced that a public service announcement would be made for the shake out, using Pale Moon Video. It would be circulated to all the major media markets in Tennessee through the use of advertisement buys and free public service announcements on public education stations and on radio and tv spots.
- C. Synergistic Activity: DECD/HUD/CERI Hazard Mapping Assessment and Education Grant, DECD/HUD grant status** *Patterson related the progress in the HazMAE project and the information that the project would gain for West Tennessee and the WTSSC*

IX. FUTURE EFFORTS

- A. March, 2018 FEMA/FedEX Region 4 Earthquake Meeting**
WTSSC will be at the conference when more information is gathered.

X. WRAP UP/ADJOURNMENT

magnitude 7.0 or greater earthquake in the New Madrid seismic zone is 7–10% in any 50-year time window. The second most active natural source of earthquakes east of the Rockies is the East TN Seismic zone, which generates about 80 small earthquakes per year.

Figure 2 is a recent USGS/CERI hazard map that shows the probability of occurrence for earthquake induced ground motions and indicates what level of shaking we can expect. Note that the higher areas of ground motion are not centered around a point. They are centered around the active faults shown in Figure 1. The unit of measurement for this map is horizontal acceleration (ground motion) relative to normal gravitational acceleration (1 g). Horizontal ground motion is the primary agent in earthquake-related building damage with structural damage for older structures beginning at 0.15 or 0.20 g. Ground motion probability maps are utilized by the TN Emergency Management Agency, International Building Code, State Building Code (Fire Marshall), and the insurance industry for policy and planning decisions.

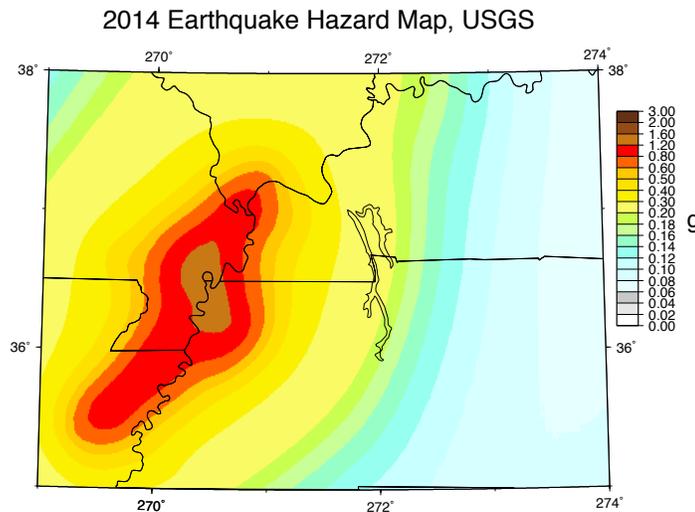


Figure 2. USGS 5% in 50-year Probability of Ground Motion Exceedance

I understand and appreciate the need for legislation which requires drills within “100 miles of the New Madrid seismic zone” and would support that measure as Executive Director of the West TN Seismic Safety Commission. I hope it is clear that designating the exact location of a 100-mile boundary is problematic and may not capture important near-surface geological boundaries that coincide with the TN River. For the sake of simplicity and to err on the side of safety, state government may want to consider designating mandatory earthquake drills for all schools west of the Tennessee River. Many state-managed earthquake policy and planning efforts are also bounded by the TN River including the West Region of the Tennessee Emergency Management Agency and the West TN Seismic Safety Commission. CERI is ready to provide additional scientific resources to support this simplified approach and seismic commission would consider a vote to work directly with state government to this end.

Please let me know if we can be of further service.

Gary Patterson, Geologist
The University of Memphis
Center for Earthquake Research and Information
Executive Director, West TN Seismic Safety Commission
HazMAE Program Manager

Appendix B. Shakeout Production Cost



Kip Cole

1330 Glen Oaks Drive
Memphis, TN 38119

PROPOSED PROJECT BUDGET

2017 Great Central U.S. Shakeout 30-second PSA

Client

Gary Patterson
CERI, University of Memphis

Services/Expenditures	Rate	Period	Number	Amount
Copy Writing	\$200.00	spot	1	\$200.00
Voice-Over Talent	\$150.00	spot	1	\$150.00
Editing/Graphic design	\$500.00	day	2	\$1,000.00
File transcoding/delivery	\$300.00	day	1	\$300.00
Media Distribution POC	\$300.00	day	3	\$900.00
Radio PSA production/distribution	\$150.00	spot	1	\$150.00
TOTAL				\$2,700.00

PALE MOON MEDIA – VIDEO & MULTIMEDIA PRODUCTION

901.826.0429

kipcole65@gmail.com

Appendix C. Shakeout Partnership Funding

The University of Memphis 2016 Earthquake PSA Media Plan

Prepared by: **ARCHER MALMO**

Target: Adults 18+		Unit	October				November				December				Total \$
			#	#	10	#	#	31	07	14	21	28	05	12	
Holidays/Events															
Spot TV - Memphis		:30													
Monthly TRPs															
CPP															
Monthly Cost															
Spot TV - Jackson, TN		:30													
Monthly TRPs															
CPP															
Monthly Cost															
CATV - Memphis (Dyersburg)		:30													
Monthly TRPs															
CPP															
Monthly Cost															
CATV - Jackson, TN		:30													
Monthly TRPs															
CPP															
Monthly Cost															
Radio - Memphis		:30													
Monthly TRPs															
NetCost/TRPs															
Monthly Cost															
Radio - Jackson		:30													
Monthly TRPs															
NetCost/TRPs															
Monthly Cost															
Pandora-Audio Everywhere		:30													
Chattanooga															
Knoxville															
Memphis															
Nashville															
Monthly Impressions															
NetCost/Impression															
Monthly Cost															
Online Digital Video		:30													
Chattanooga															
Knoxville															
Memphis															
Nashville															
Monthly Impressions															
NetCost/Impression															
Monthly Cost															
Digital															
Facebook															
Monthly Cost															
Cost															
Total Monthly Costs															
Grand Total															

Appendix D. CUSEC Letter of Intent to Support WTSSC ShakeOut PSA



Central United States Earthquake Consortium

CUSEC

a partnership to mitigate disasters and save lives....

2630 East Holmes Road
Memphis, TN 38118
Voice: (901) 544-3570
Fax: (901) 544-0544
E-Mail: cusec@cusec.org
Website: www.cusec.org

August 25, 2017

Gary Patterson
CERI/West Tennessee Seismic Safety Commission
3890 Central Ave.
Memphis, TN 38152

RE: ShakeOut PSA Campaign

Dear Gary,

As recently discussed, CUSEC has received a grant from the Federal Emergency Management Agency to support the Tennessee Emergency Management Agency's ShakeOut-related public awareness efforts.

TEMA has indicated that they would like us to use the funds to complement the West Tennessee Seismic Safety Commission's planned ShakeOut public service announcement campaign scheduled for the September/October 2017 timeframe. We have \$5,000.00 to support this initiative and hope that the funds will be able to be used to purchase additional TV/radio advertising.

For us to be able to contribute the \$5,000 to the campaign, we will need to at least have the ShakeOut.org website mentioned or incorporated in some way into the PSAs. It would nice if there is a video PSA if the CUSEC or ShakeOut logo is included. Lastly, the primary reporting requirement that we have is that following the advertisements, we will need a brief summary of the total number of PSAs run during the campaign as well as where they were run.

I will plan to attend the August 31 Commission meeting at CERI to answer any questions you or the Commission may have. Thank you and we look forward to partnering with you on this effort.

Sincerely,

Brian Blake
Associate Director
CUSEC

Charter Members Alabama • Arkansas • Illinois • Indiana • Kentucky • Mississippi • Missouri • Tennessee
Associate Members Georgia • Iowa • Kansas • Louisiana • Nebraska • North Carolina • Ohio • Oklahoma • South Carolina • Virginia