

Utah Seismic Safety Commission Quarterly Meeting Minutes

On April 30, 2015, a regularly scheduled quarterly meeting of the Utah Seismic Safety Commission (USSC) was held in the Kletting Room of the Utah State Senate Building. Chair Leon Berrett called the meeting to order at 9:00 AM.

Members Present:

M. Leon Berrett, Chair	American Public Works Association
Keith Koper	University of Utah Seismograph Stations
Roger Evans	Utah League of Cities and Towns
Peter McDonough	American Society of Civil Engineers
Enzo Calfa	Division of Facilities, Construction and Management
Kris Hamlet	Utah Division of Emergency Management
Rep. Gage Froerer	Utah House of Representatives
Meldee Love	Utah Department of Insurance
Gerald McKenzie	Structural Engineers Association of Utah
Carmen Swanwick	Utah Department of Transportation

USSC Staff Present:

Steve Bowman	Utah Geological Survey
Adam Hiscock	Utah Geological Survey
Bob Carey	Utah Division of Emergency Management
Sheila Curtis	Utah Division of Emergency Management
Katie LeLaCheur	Staff Recorder

Guests Present:

Walter Arabasz	University of Utah Seismograph Stations
Barry Welliver	BHW Engineers
Leslie Randle	Citizen
Gilbert Gonzales	Murray City
Glen Palmer	Palmer Engineering
Josh Groeneveld	Utah Division of Emergency Management
Pat Peterson	Salt Lake City
Jennifer Youngfield	Utah Department of Education

Members Not Present:

Michelle Jones	Association of Contingency Planners
Senator Jerry Stevenson	Utah State Senate
Mark Peterson	U.S. Geological Survey (Ex-Officio)
Doug Bausch	Federal Emergency Management Agency

Rick Allis
Evan Curtis

Utah Geological Survey
Governor's Office of Budget and Planning

Welcome and Introduction

Introduction were made of members and guests present. Enzo Calfa made a motion for the approval of the January 29, 2015 Meeting Minutes. The motion was seconded by Roger Evans. The minutes were approved.

Rapid Visual Screening (RVS) Update

Barry Welliver began by stating that the present status of this project is that the Bob Carey has a secure server, at the state, that houses the ROVER software that they are using to catalog the Utah schools RVS scores. They have contracted with Reaveley Engineers to handle the Rapid Visual Screenings. They are working to prioritize the schools that haven't provided their RVS data, according to their seismic vulnerability. Jennifer, from the State Office of Education, is anticipating that what they would like to do next is install the ROVER software on the State Office of Education's computers. Reaveley Engineers would input the information into their system and the data would then be exported and put it into the master ROVER installation at the State. Reaveley Engineers will be starting one of the districts fairly soon. They anticipate needing to spend all of the funds by October so that they can report to the legislature on the progress of this project. Keith asked if this information would be made available to the public. Barry responded that it would not be made available to the public at this time.

Great ShakeOut Update

Leon Berrett introduced the Great ShakeOut update. Salt Lake County Public Works will be holding their ShakeOut exercise on May 7, 2015. This year they have Unified Fire, their Emergency Management Services and the County Emergency Operations Center (EOC) participating with them, in their exercise, so they decided to move the date back a few weeks. Leon invited the any Commission members, who would like to come out and observe the exercise, to attend. They will have different stations including cribbing, fire suppression, trench safety, awareness, and debris removal. Kris Hamlet spoke about the states ShakeOut exercise. This year the state had over nine hundred sixty thousand participants which made it the largest ShakeOut participation to date. It also made Utah the most involved participation per capita of any state that participates in the ShakeOuts throughout our nation. It is very successful for Utah. It provides a lot of good publicity and media. The Public Information Officer (PIO) for the state, the Be Ready Utah folks, and Bob Carey were very busy giving interviews and answering requests for information. The Governor has approved the third Thursday of every April

as a standing date for the ShakeOut. Along with the ShakeOut drill the state also did a small tabletop exercise which they called the April Trembler. This year they focused on doing their processes in the State EOC as if they didn't have computers. They did a lot of hand written requests for information and resources. They found that they have a lot of training to do on how to go back and do things the old way. They got reports from locals throughout the state on the exercises that they did as well. It was pretty wide participation throughout the state, including participation from every county. They hope to get one million participants next year.

Barry noted that he had assumed that all of the schools were participating year after year but he has found that some schools have dropped out of participation. He stated that in years past the USSC has asked the Governor for a proclamation stating that April is Earthquake Awareness Month. Barry asked is the ShakeOut is taking the place of that or if the Proclamation should still be made. Kris responded that FEMA has pushed a new initiative called the PrepareAthon and the ShakeOut counts as Utah's PrepareAthon activity on the national level. Leon commented that they should talk with the Governor and see if they can designate April as Earthquake Awareness Month. Pete informed the Commission that during the month of April he had presented several talks and presentations to employees of Questar Corporation. One of the things that he stressed during these talks was the risk of damage from smaller events. It opened the eyes of some of their employees to realized what would happen if they had even a smaller even in an urban area. Meldee Love, from the Insurance Department, shared her experience with the ShakeOut. She placed a notice on the door of the main evacuation route that stated that it was blocked by debris. They also had the Commissioner pick several employees to go missing so people could practice what they are supposed to do in these scenarios. It was interesting to watch how people responded.

Public Works Mutual Aid Agreement

Leon provided the USSC with an update on the Public Works Mutual Aid Agreement. Fire and Police have mutual aid agreements that they use regularly. Public Works felt that there was a big need to have a mutual aid agreement as well. Through the American Public Works Association they came up with a mutual aid agreement. They feel that they have a very good agreement now. Their goal is to have all of the cities and counties sign on to this agreement. They are also looking at special districts to see if they will be interested in signing on the this mutual aid agreement. At this point they are focusing on cities, towns, and government agencies. One of the requirements of the mutual aid agreements is that each public works have an exercise annually. They also need to maintain an inventory of all equipment and personnel so it can be shared with other public works departments. This is meant to complement the State Mutual Aid Agreement. This provides a better method for reimbursement and for FEMA approval

for compensation. They have two thirds of the cities in Salt Lake County that have signed on and they are starting to spread out. Leon asked for any suggestions for mutual aid agreements and introduced the next agenda item.

Safety Assessment Program (SAP) Training

Gilbert Gonzales gave the SAP Training update. The Safety Assessment Committee currently has sixteen members including building officials, engineers, and an architect. They have about twelve members who participate on a regular basis. They meet monthly or as needed. Their last meeting was in April. They just added a new member named Robert Ferris who is the Emergency Management Program Manager for Intermountain Medical Center. He has also worked for FEMA. They are excited to have him attend their next meeting. The Safety Assessment Committee is currently working on is trying to settle on additional requirements for people in the community who are not architects, building officials and engineers who want to get a disaster response card. They decided to try the FEMA 154 Training and see how it went. It was held at the Capital. Barry Welliver was the instructor. They felt that it was beneficial but didn't feel that it was what they wanted. So what they are planning for the next meeting is to come up with a 1 hour training. This will be provided in addition to the ATC-20 training, with the field component, and the IS 100.B Training. Individuals who complete this training, that are not architects, engineers, or building officials, will receive a Tier 2 card. They will also suggest that Tier 1 card holders attend the FEMA P 154 and FEMA P 50-1 Training because they feel it is very beneficial. Gilbert expressed his belief that they should someday offer the tier 1 card to general contractors as well. It was suggested that they coordinate with the Association of General Contractors or the American Building Council. A brief discussion followed on the differences of how the tiered approach will work in an event. Bob commented that it will be very helpful to have more individuals that have been trained than less. The tier 2 cardholders can assess single family dwellings easily. He also mentioned that this doesn't remove the fact that they can train individuals without issuing a card. The better they can equip individuals with knowledge the better the outcome may be. Roger asked if any other city, other than Salt Lake City, has look into adopting the Building Occupancy Resumption Program (BORP). Gilbert answered that the 2 cities that he knows of that have adopted this program are Salt Lake City and Murray City. He then reviewed for the Commission the purpose of the BORP Program. Leon asked Gilbert to provide a summary containing information about ATC-20 and the BORP program for the updated USSC website. Bob stated that the have 2 ATC-20 trainings scheduled on May 14, 2015 and August 20,2015 at the Magna Library.

Legislative Bills Updates

Leon asked Representative Froerer to update the Commission on the upcoming Legislative Bills. He responded that Roger may have more information on this. He continued that he has only noticed 2 bills that were related to seismic issues. The first bill was going to require local officials to do inspections and it was going to be problematic. Gilbert spoke against the bill. They were able to delay it. Rep. Froerer encourages all of his colleagues that if they proposed legislation, that deals with seismic issues, to bring them before this Commission. They have put some language into a couple of bills that will be asking for more detail in terms of building maintenance that will overflow into seismic issues. Rep. Froerer recently had a meeting with DFCM about a format that they are developing for coming up with guidelines of parameters to better measure each of these buildings on an individual basis. This will include metering all the way through any seismic issues they may have.

Roger made a few comments. First he stated that the bill that Rep. Froerer is talking about is HB 270 from Stuart Barlow. This bill did not pass. Roger asked that the Commission look at it. He then asked that the Commission also look into House Joint Resolution 26. This is what is coming up. Leon mentioned that he had met with Stuart Barlow and he had thought the bill was a good idea. Rep. Froerer explained that he thought that he that the intent of the legislation was good but that it was misdirection in terms of who the responsibility relied on. Without funding sources in place or buy in from the local officials the state was not willing to look at it. Gilbert suggested that HB 270 would lend itself to the BORP program. Kris commented on HB 357. It is Emergency Services Account Loan Amendments under the Emergency Management Act. It made it through the House and Committee in Senate without opposition. It never made it on the floor on the last day. Hopefully it will come back up prior to the next general session. What the bill tries to do is provide the State of Utah with a way to identify local agents to send to other states to assist with their disasters. It also provides a way to front the money, to pay these agents, before the reimbursement process. The final piece of this bill was going to identify who is responsible for meeting the federal match requirement if Utah has a declared disaster.

Utah Geological Survey Urban Geologic Hazard Mapping

Steve Bowman spoke the the Commission about the Utah Geological Survey Urban Geologic Hazard Mapping. The UGS has an ongoing multi-year project that maps geologic hazards and creates map sets showing this variety of different hazards. It is usually a set of ten maps per quad. In the last legislative session the UGS was approved for a building block to add 2 people to that program. They will be able to double their capacity on getting these maps published for local governments to use in land use planning and management purposes. Keith Koper asked if these hazard maps

show risks or if they are more just documents geologic features. Steve replied that they are more susceptibility maps. They are full GIS products as well. As they go forward they will have 4 people dedicated to the mapping process.

Western States Seismic Policy Council (WSSPC) Letter and Annual Meeting

Pete McDonough gave the Commission a briefing on WSSPC. He began by reminding the USSC that he represents Seismic Safety Commissions on the Western States Seismic Policy Council. One of the primary functions of WSSPC is to put together policies which can be used by different states when approaching the legislatures or other government entities. One of the policies that is coming up for review this year is entitled Definitions of Recency of Surface Faulting of the Basin and Range Province. Before it came up the Chair of WSSPC decided that he no longer wanted this as a policy. Bill Lund from the Utah Geological Survey contacted Pete and asked if the USSC could generate a letter stating their concerns about this policy being removed from the WSSPC policies and also stating that the Commission felt it has value. Pete approached Leon and encouraged him to put together a letter in support of this policy statement. Leon did send this letter of support. The WSSPC Chair compromised and the policy is being revised and approved for the next 3 years.

Letters of Support

Steve stated that the UGS is planning on submitting 2 proposals to the US Geological Survey: National Earthquake Hazards Reduction Program. One of them would be to collect LiDAR for the East and West Cache Fault Zone and to create Surface Fault Rupture Hazard Maps. The second proposal would be to compile all of the scientific data, on the Wasatch Fault, in a spatial GIS platform online. The UGS has asked the USSC for letters of support for both of these proposals. Leon has drafted those letters. Steve asked the Commission to endorse these letters. Leon opened this topic up for discussion. Walter Arabasz commented that he feels it would be highly appropriate to support these proposals. Keith asked if they are sending them to the Intermountain West section. Steve confirmed this. Leon Berrett made a motion that the Utah Seismic Safety Commission prepare 2 letters, as described by Steve, regarding LiDAR and Spatial GIS. Keith Koper seconded. The motion passed.

Website Update

Steve updated the Commission on the web site. The old web site is outdated and needs to be replaced. Steve proposed that the new USSC web site could be created with an open-source software called ResourceSpace. The cost would be relatively low, under \$500 a year. Steve also recommended that they scan all of the USSC's legacy

documents and store them on the web site. This would also have a relatively low cost. Steve continued to review the functionality that the new website would provide. The Commission discussed the color schemes available with ResourceSpace. Leon asked Bob for his thoughts on the cost. Bob replied that at under \$500 a year it is not going to be a big deal. Leon asked for comments on the background color. Bob agreed with Roger's request that the background be red. Leon asked for final comments and made a motion to proceed with the updating of the website, with the white background, and also proceed to scan the legacy documents. Keith Koper seconded the motion. The motion passed.

Earthquake Engineering Research Institute (EERI) Conference and EERI SL Scenario

Barry reported on the EERI Conference. The programs were very interesting and included topics such as emergency management, infrastructure, vulnerability to existing buildings and the school earthquake safety initiative. One of Barry's observation was the numbers of states that have more URMs than Utah does. The highlight of the conference, for Barry, was when Walter Arabasz received the Alquist Special Recognition Award. Following Barry's comments Pete spoke about the Salt Lake Scenario. He reminded the Commission of the Salt Lake Earthquake Scenario presentation that Kris Pankow gave in the last quarterly meeting. They are running a little behind schedule but hope to give it to the Commission at the next scheduled meeting. Pete then provided the USSC with a document containing an executive summary for the scenario. He asked that the Commission look over the hazards and loss estimates for a 7.0 magnitude earthquake along the Wasatch Front. The total estimated economic loss is over thirty three billion dollars. Bob commented on the timeline for completing the document. He estimates that it will be in print by the end of May.

Intro on Taylorsville Trench and Wasatch Fault Surface Fault Rupture Maps

Adam Hiscock presented on the UGS Surface Fault Rupture Maps. Levan and Fayette are the 2 southernmost segments of the Wasatch Fault Zone. Both segments show evidence of rupture in the last ten thousand years. There is not much paleoseismic data for these sections. There is a trench in the Skinner Peaks on the Levan segment and no trenching has ever been done on the Fayette segment. In their effort to map the entire Wasatch Fault Zone, with their new 2013-2014 LiDAR data set, the UGS is mapping quad by quad and publishing the Surface Fault Rupture Maps. Other sets of data that they are using on this project are historical aerial photos, previous geological quad mapping, and field reconnaissance. The 2013-2014 LiDAR was collected by AGRC and consorting local government agencies. It includes the entire Wasatch Fault Zone from Fayette Utah to Malad City Idaho. It is extremely high resolution. The LiDAR data is all

available through AGRC and the National Sciences Foundations Opentopography website. Adam presented 3 different LiDAR data products that they used: slope, shades, and hill shades. They are different methods of viewing the data. Mike Hillman and Mike Muschet from the UGS and USGS published a Surficial Geologic Map of the Levan and Fayette segments in 2008. These maps are building on that work. These maps contain a special study zone around each fault trace. The results are refined mapping of the Levan and Fayette segments. The next step will be to review all of the new traces and add them to the Utah followed by the National Quaternary Fault Databases. The report is available on their website. The UGS's upcoming trench will be on the Taylorsville fault out by the airport. This will be from August 24, 2015 - September 4, 2015. Walter commented on the importance of these trenches. Leon asked for final questions and introduced the next agenda item.

Envision Utah

Josh Groeneveld presented the information that Envision Utah tasked him to get from HAZUS. They wanted two questions answered. First, what would the benefit be to a URM retrofit be? Second how would improving the permanent building code help? HAZUS isn't set up to predict future populations so the approach they took was to get a per thousand rate for casualties and deaths and a damage per building so that Envision Utah could then guesstimate what things would look like in 2050. What they did was only focus on a 7.0 magnitude earthquake on the Salt Lake City segment because that is the worst case scenario. To handle the URM retrofit question they played with the collapse rate of the URMs assuming that if they are retrofitting URMs then less would collapse. They ran several scenarios ranging from 5% of URM retrofitted to 100%. The results varied from a 5% retrofit providing 5% less injuries and 8% less deaths all the way to a 100% retrofit which lowered the number of deaths by 96%. This was the closest answer that HAZUS can provide for an economic benefit to retrofitting URMS. To quantify what the benefits could be, if we adopted an improved building code, they looked at it as if all of the buildings on the ground now were at the current code and then they changed the values to meet the California building code. The baseline scenario gave thirty one billion dollars in direct economic loss from buildings with thirty three billions dollars in total loss. They estimated that with a high seismic design they would save about 12% over a moderate seismic design. Additionally they wanted to look at how these building codes would affect casualties and injuries. They found that changing to a high seismic design brought the fatalities number down significantly. Envision Utah took these estimates and applied them, using rates, to what it may look like in 2050.

SSA Update

Keith Koper gave the Seismological Society of America update. The annual meeting was in Pasadena last week. It was the biggest meeting they have had. An entire day was spent on induced seismicity. There has been a lot of induced seismicity in Oklahoma. There are a few other states that have also experienced a lot of induced seismicity so that was the big focus of the meeting. Keith also mentioned the Nepal Earthquake. It was a 7.8 or 7.9 magnitude earthquake. This earthquake was not a surprise. They were under prepared for this event. There has been a lot of damage done by aftershocks. The current estimate is 5,000-10,000 for fatalities and serious injuries. It is a major earthquake.

National Emergency Management Association (NEMA)

Kris Hamlet spoke about NEMA. He has been asked to be the Chair of the Mitigation Committee for the National Emergency Management Association. The Mitigation Committee is drafting an outline for an earthquake subcommittee and hope to have this subcommittee up and running by October. One of the things they hope the earthquake subcommittee will be able to do is bring back the National Earthquake Hazards Reduction Program funding to the states directly. FEMA seems to be onboard with bringing this funding back to the states. Bob commented that this funding was originally supposed to give supplemental funding to states for running programs. The money was being well spent. There was something not right about FEMA pulling this funding. The Earthquake Program Managers are pushing to get this funding returned to the states.

Other Business at the Joint Meeting with Nevada and Others

- The joint meeting with Nevada will be held on November 10, 2015 in Reno. There will be an informal get together on the 9th. Idaho and Colorado have also been invited. More information will be passed on as it is determined.
- The USSC Progress Report is in progress.

The next meeting will be July 30, 2015.

Pete McDonough made a motion to adjourn the meeting. Roger Evans seconded the motion.

Leon Berrett adjourned the meeting at 12:00 PM.