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**ALFRED E. ALQUIST  
SEISMIC SAFETY COMMISSION MEETING**

Microsoft Teams Teleconference Meeting  
September 9, 2021

**I. Call to Order**

The meeting was called to order by Dr. H. Kit Miyamoto, Chairperson at 9:03 am. Salina Valencia, Legislative & Communications Director, conducted the roll call.

**Present:**

Dr. H. Kit Miyamoto, Chair (departed at 10:51am)  
Cindy Silva, Vice Chair  
Representative Diane Gould for Ida Clair  
Representative Nestor Lopez for Ken Cooley  
Alegria De La Cruz (departed at 11:00am)  
Debra Garnes  
Representative Lori Nezhura for Mark Ghilarducci  
Kim Lopez  
Mia Marvelli  
David Rabbitt  
Fuad Sweiss  
Andrew Tran (departed at 11:00am)  
Vincent Wells (arrived at 9:05am)

**Absent:**

Ken Cooley  
Ida Clair  
Mark Ghilarducci



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## II. Approval of Seismic Safety Commission May 13<sup>th</sup>, 2021 Meeting Minutes

### Discussion:

The Seismic Safety Commission (SSC) discussed May 13, 2021 meeting minutes. Motion to approve by Commissioner Silva, seconded by Commissioner Rabbitt. Motion passed unanimously.

Commissioner De La Cruz, Commissioner Garnes, Commissioner Lopez and Commissioner Wells abstained.

## III. Chairman's Remarks

Chairman Miyamoto welcomed new Commissioners Joone Kim Lopez, General Manager of Moulton Niguel Water District, Debra Garnes, Mayor of Rio Dell, Vincent Wells, retired firefighter, and Alegría De La Cruz, Director of the Office of Equity in Sonoma.

Chairman Miyamoto is currently living in Port-au-Prince, Haiti, working to train the Haitian Public Works and respond to the August 2021 M 7.2 earthquake.

## IV. AB 100 Projects: Seismic Program Descriptions for the Public

**Speaker – Steve Bohlen, State Geologist, California Geological Survey**  
**Chris Tokas, Deputy Division Chief of Northern California Operations,**  
**Office of Statewide Health Planning and Development**

Executive Director McCarthy stated that when the Commission was moved into the California Governor's Office of Emergency Services (Cal OES), a condition of AB 100 was to provide a website for other departments for summation of seismic programs and budgets for the public. Executive Director McCarthy thanked Mr. Bohlen and Mr. Tokas for being first to do this.

Steve Bohlen is currently on assignment from the Lawrence Livermore National Laboratory where he leads Energy and Homeland Security Program.

The California Geological Survey (CGS) partnered with United State Geological Survey (USGS), Cal OES, Statewide Health Planning and Development (OSHPD),



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Department of Water Resources (DWR), and others to provide a variety of products and services.

CGS contributes to earthquake safety by locating seismic hazards, identifying, and assessing impacts of hazards, monitoring activity for response and structure resilience, and organizing a clearinghouse to share information.

CGS is responsible for preparing maps to display geological hazard zones.

Mr. Bohlen presented a map identifying potential earthquake hazards around Ukiah, of the Russian River Reservoir Dam and potential for landslides causing the lake to overtop the dam and descend onto the community below.

Mr. Bohlen displayed a map showing the earthquake shaking potential and where the hazard is the highest. This translates into economic loss, building codes, and insurance rates.

CGS is responsible to assess hazards for critical and essential facilities such as hospitals. Legislation requiring CGS to do an assessment of seismic and other geological hazards for all hospitals resulted from the 1971 San Fernando earthquake.

The Woods Act required CGS evaluate the same hazards for schools.

Most seismic stations are operated by CGS including buildings, bridges, and dams. Each station records, acceleration, velocity, and displacement due to the shaking is available to the public.

ShakeMap is a tool for emergency first responders and is generated within a few minutes of earthquakes with magnitude of  $\geq 4.0$ . This information is used by first responders to identify the areas of greatest shaking and potential damage.

CGS oversees the state Clearinghouse which provides info to the public/local and regional agencies immediately following an earthquake.

CGS is working on developing a real-time warning system with upgraded seismic stations. High-quality computer modeling of site response allows for the evaluation of building structural health and return to service.



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## **Discussion:**

Commissioner Lopez asked how much information can be put into models and efforts to assess ground impact if the water and wastewater infrastructures would fail?

Mr. Bohlen stated he was not able to do that. It would require a larger number of sensors. Funding comes after a big event; studies show spending \$1 up front for geologists/seismic engineers saves \$10-\$1,000.

Commissioner Lopez asked if any discussion getting to that point?

Mr. Bohlen and Commissioner Ghilarducci met few weeks ago to discuss these issues.

With CGS, Cal OES runs a duty officer program to monitor seismic activity. If it rises to a certain level, an executive report is made.

Commissioner Silva mentioned the housing crisis, along with drought, fires, and seismic activity and asks how CGS is helping communities understand no building is going to solve crisis and find right place to build.

When creating maps, CGS, local governments, and local emergency services meet to review the effectiveness and impact of maps and how to respond to risks.

HayWired is also a public effort to inform people of risks and how to react.

Commissioner De La Cruz was curious about CGS's supporting local jurisdictions and the state in responding to private project application.

Local jurisdictions ask CGS to comment on projects. CGS is small and can't respond to everything; they look at projects with the most potential impact to public health and safety.

CGS works with local building departments.

Commissioner De La Cruz asked if there was an opportunity to roll out smaller projects like sensors and how to fundraise for it.



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CGS with UCLA and Cal Tech doing that and assessing lower cost sensors; pilot projects are starting now. A lot to learn in next few years.

Commissioner Rabbitt commented it may be cost-effective to co-locate CGS sensors with AlertWildfire camera locations where possible.

**Speaker – Chris Tokas, Deputy Division Chief, Office of Statewide Health Planning and Development**

Executive Director McCarthy showed his appreciation for OSHPD. OSHPD and the Facilities Development Division's purpose is to enforce the Alquist Hospital Facilities Seismic Safety Act. The Act bestows six basic areas of responsibility: plan review and construction observation, regulation development, hospital seismic compliance program, hospital building safety board, research, and emergency response.

Originally, the Act focused on new hospital buildings. However, a new amendment brought existing buildings into the Seismic Safety Act adding new responsibilities to OSHPD. Every existing hospital building had to be evaluated and placed into a specific category. The building standards developed in 1996 generated five categories.

Pre-73 buildings: SPC1 and SPC2; Post-73 building: SPC3, 4, 5.

The seismic compliance portion is two steps. The first, buildings that provide healthcare services that were at risk of collapsing had to be removed or strengthened. The second required that all healthcare buildings must be capable of continued operation by 2030.

**Discussion:**

Chairman Miyamoto asked if 78% compliance is based on at least one building at each campus.

Mr. Tokas states that the 76% is for individual buildings.

Commissioner Lopez asked to clarify if access to water was considered. Is there a list of hospitals that have the 76-hour emergency requirement?

Mr. Tokas verified that there is a list.

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## V. The Global Earthquake Model (GEM): From Risk Assessment to Risk Solutions

**Speaker – John Schneider, Secretary General, GEM**  
**Vitor Silva, Risk Coordinator, GEM**

Executive Director McCarthy introduces Global Earthquake Model (GEM). Previously had two projects for the SSC and a valuable resource.

John Schneider stated GEM was conceived as a global public-private partnership to assess earthquake risks initiated by Organization for Economic Co-operation and Development (OECD) in 2004. GEM's core principles include public good, credibility, collaboration, and openness. GEM's scientific framework is based on hazard vulnerability and exposure, or risks. GEM developed the OpenQuake Engine.

Vitor Silva highlighted recent efforts that might be useful for communities in California.

GEM decided to explore more of the work done by NASA Jet Propulsion Laboratory (JPL) about using artificial intelligence and remote sensing to estimate the areas that may be affected.

GEM has been focusing on how to illustrate earthquake risk so that mitigation actions may be considered an applied where they are most needed.

### **Discussion:**

Chairman Miyamoto stated that OpenQuake is used in other countries and has been very useful.

Commissioner Tran mentioned he has worked with GEM previously and sees progress made.

Commissioner Tran asked to what extent is GEM able to be successful and get people on board to use the models?

Mr. Schneider mentioned most interesting is the uptake of hazard information and capability within governments.

Mr. Silva added OpenQuake has been applied in more than 60 countries for seismic hazard and risk assessment. In the US, the models have been used



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hundreds of times, so it does seem like there was a gap in the terms of models and tools and GEM managed to contribute to the reduction of that gap.

Commissioner Tran mentioned he knows the model was introduced to the California Department of Insurance and that it was quite challenging for them.

## **VI. Update on ALERTWildfire Camera Network and Its Applications to Fire Following Earthquake (FFE)**

### **Speaker – Professor Neal Driscoll, UC San Diego**

Executive Director McCarthy stated that the SSC has been involved in the ALERTWildfire project for many years and introduced Dr. Driscoll for an opportunity to present an update on the program.

The SSC is also working with Chief Larry Collins to see if the cameras can be used to reduce the risk from “Fire Following Earthquake.”

ALERTWildfire along with Cal FIRE, South California Edison (SCE), San Diego Gas & Electric (SDG&E), and Pacific Gas & Electric (PG&E) have deployed a network of High-Definition Pan Tilt and Zoom Axis cameras with near-infrared fire detection, built a microwave communication network, have five days of resilience during public safety shutdowns, provide ability to confirm 911 calls, improve situational awareness, and help sequence evacuations.

ALERTWildfire is putting new sensors on stations for moisture content of the fuels, soils, better weather constraints, and fly airborne data acquisition to find fuels. This data can be used to estimate biomass and carbon, wildfire modeling, and landslide analysis.

ALERTWildfire works with JPL to merge satellite data with camera data.

### **Discussion:**

Commissioner Lopez asked how much has it cost to date and how it has been funded?

Professor Driscoll responded that \$50M funded by Cal FIRE, PG&E, SDG&E, and SCE.





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Chief Larry Collins mentioned the idea of having infrared cameras on high buildings in the early 2000s was not a possibility; being able to do this now will be lifesaving moving forward.

Commissioner Rabbitt believes the Kincadee fire really showed the true benefits and thanked ALERTWildfire for the collaboration.

## **VII. Miscellaneous Announcements**

Executive Director McCarthy discussed that staff would email about budget updates. Then he introduced the new Structural Engineer Joone Wang-Connelly who will be working with Commissioner Silva on the update of the Commercial Property Owner's Guide and briefing the SSC at the November meeting.

Mrs. Connelly will be briefing SSC on a 10-story cold-form steel building experiment with the National Science Foundation going in at the new Shake Table in UC San Diego.

Executive Director McCarthy plans on retiring at the end of the year. He will be supporting the transition to a new director and his final commission meeting will be in November.

## **VIII. Public Comment**

No requests for public comment.

## **IX. Adjourn**

The meeting was adjourned at 11:29 am by Cindy Silva, Chair.