

Minutes of Commission Meeting
University of California at San Diego
Scripps Seaside Forum, 8610 Kennel Way
La Jolla, California
May 12, 2016

Members Present

Timothy Strack, Chairman
Tracy Johnson, Vice Chair
Greg Beroza
Michael Gardner
Ryan Arba (for Mark Ghilarducci)
Peggy Hellweg
Helen Knudson
Mia Miravelli
David Rabbitt
Fuad Sweiss
Mark Wheetley

Members Absent

Anthony Cannella
Ken Cooley
Randall Goodwin
Kit Miyamoto
Ian Parkinson
Chet Widom

Staff Present

Richard McCarthy, Executive Director
Lena Daniel, Administrative Manager
Robert Anderson, Sr. Engineering Geologist
Fred Turner, Structural Engineer
Salina Valencia, Legislative Director

I. CALL TO ORDER AND ROLL CALL

Chairman Strack called the meeting to order at 10:02 a.m. Administrative Manager Lena Daniel called the roll and confirmed the presence of a quorum.

III. CHAIRMAN'S REMARKS

Chairman Strack thanked Mr. Rudy Murello, UC San Diego, for hosting the Commission meeting. He noted that Commissioners took a field trip the previous day and had an opportunity to visit the UC San Diego shake table and the drone lab.

III. APPROVAL OF MINUTES – MARCH 9 AND 10, 2016 WORKSHOP AND MEETING

Commissioner Hellweg said she and Commissioner Knudson had submitted some minor typographical revisions to the staff.

ACTION: Commissioner Hellweg made a motion, seconded by Commissioner Gardner, that:

The Commission approve the minutes of the March 9 and 10, 2016, workshop and meeting as amended.

* Motion carried, 9 – 0.

IV. WELCOMING REMARKS

Chairman Strack introduced Dr. Alan Houston, Director of Academic Strategic Initiatives, appearing on behalf of the Chancellor, UC San Diego (UCSD), and invited him to address the Commission.

Dr. Houston welcomed the Commission to UCSD. He expressed his appreciation to the

Commission for its important work in protecting the safety of the people of California. He noted that UCSD is fortunate to have a number of state-of-the-art research facilities, such as the shake table and the drone laboratory, and UCSD is honored to partner with the Commission on research projects that will improve the resiliency of the state. Dr. Houston thanked the Commission and the Board of Regents for their support.

**V. ANZA SEISMIC NETWORK – A FOUNDATION FOR SAN DIEGO
EARTHQUAKE EARLY WARNING SYSTEM**

Chairman Strack welcomed Dr. John Orcutt, Distinguished Professor of Geophysics, UCSD, and Mr. Scott Nebenzhal, Seismic Warning Systems, and invited them to address the Commission.

Dr. Orcutt stated that he has been involved in the development of seismic early warning systems for many years. He described the High-Performance Wireless Research and Education Network (HPWREN), a broadband system that provides real-time data to the statewide seismic network. He noted that the network became operational in 1982 and currently has 29 operation stations. He advised that HPWREN focuses on the San Jacinto Fault zone, the closest major fault system to San Diego. He said the network was originally funded by the U.S. Geological Survey (USGS), and then later by the National Science Foundation (NSF), until the program was defunded in 2014; 750,000 dollars from Seismic Warning Systems will allow the system to continue operating until 2020.

Dr. Orcutt explained how the HPWREN sensors receive and disseminate data to the dedicated and secure network, and he identified the location of network stations throughout California. He

said the sensor system can be used to detect fires, extreme weather, and earthquakes, and he mentioned some NSF experiments entailing detailed seismic measurements of known fault areas. Dr. Orcutt noted that the next step will be to increase the bandwidth and expand the system.

Chairman Strack thanked Dr. Orcutt for his presentation.

Mr. Scott Nebenzhal, Vice President and Director of Government Affairs, Seismic Warning Systems, said Seismic Warning Systems has always advocated a use-driven, needs-driven approach to early warning systems. He stated that his company provides early warning systems to users in the private, commercial, and government sectors.

Mr. Nebenzhal said Seismic Warning Systems is excited about its new partnerships and the growth within HPWREN. He noted that HPWREN brings new users to the system, each with their own needs and demands, and the system is expanding to accommodate all of the bandwidth and data necessary to satisfy those needs. Mr. Nebenzhal advised that Seismic Warning Systems will continue to work with the Commission and other entities to apply new technological innovations to improve seismic safety.

Mr. Nebenzhal stated that Seismic Warning Systems' partnership with UCSD is an outgrowth of its participation in the NSF network. He said the effort has continued to grow with new partners and collaborators. He showed a series of slides depicting how the participants in the ANZA network are working together. Nebenzhal pointed out that his company deploys earthquake warning sensors and has established strong zones of coverage in the Coachella Valley. He

explained that signals from sensors are transmitted via a secure microwave network and delivered to end users.

Mr. Nebenzhal thanked the Commission for its ongoing interest and support, Dr. Orcutt and UC San Diego, and the company's other partners in creating important economic and security benefits and protecting the state's infrastructure.

Mr. McCarthy advised that Governor's Office of Emergency Services (CalOES) is the lead agency on the Governor's working group charged with developing an implementation plan. He said Commissioners will have an opportunity to review the draft Implementation framework and make comments at the July Commission meeting.

Chairman Strack thanked Mr. Nebenzhal for his comments.

VI. REVIEW AND APPROVE THE Mw 6.0 SOUTH NAPA EARTHQUAKE REPORT

Chairman Strack welcomed Dr. Laurie Johnson, Pacific Earthquake Engineering Research Center (PEER), and invited her to discuss her report on the South Napa Earthquake.

Dr. Johnson presented the latest revised version of the report. She noted that the 20 findings and 41 draft recommendations were reviewed and prioritized, and the key points are organized around five subject areas: geosciences, infrastructure, structures, people and businesses, and

government and institutions. She said the 10 key priority recommendations resulting from the Commission's March workshop are identified in the executive summary. Dr. Johnson reviewed and discussed the priority recommendations in each category.

Mr. McCarthy drew attention to the last paragraph in the introduction on page iii, and he suggested modifying it to say, "Additional recommendations that were identified during the study that were not selected as priority items are provided in Appendix A."

Mr. McCarthy advised that he had already spoken with State Geologist John Parrish and the Chair of the State Mining and Geology Board about revisions to the Alquist-Priolo Act, and both are willing to consider updates. He suggested that the Commission consider contributing funds for this effort. He remarked the effort is likely to take a long time because it will require legislation, but the South Napa earthquake attracted attention to this issue.

Mr. McCarthy observed that the administration is likely to ask for the Commission's top three priorities. He recommended arranging a meeting with Dr. Johnson, members of the Commission, CalOES, and representatives from the Governor's office and other entities to review and discuss the document and come back with feedback and action items at the July meeting.

Chairman Strack asked Commissioners to submit their choices for the top three recommendations to the staff. He encouraged Commissioners to consider each recommendation

from the perspective of policy makers and members of the public.

Commissioner Hellweg recommended focusing on implementation so the recommendations do not just sit on a shelf. She advocated choosing the top three recommendations with the highest impact on seismic safety.

Commissioner Sweiss suggested identifying the top two or three points in each of the five major areas covered by the report. He expressed concern that choosing only three from a list of ten may diminish the significance of some high-priority items in different groups.

Mr. McCarthy said the staff can begin the discussion with the five areas. He cautioned that having too many recommendations tends to dilute them all, and he recalled that the Northridge earthquake report had more than seventy. He recommended seeking guidance from the administration regarding what actions are considered the most effective.

Commissioner Sweiss noted that the different subject areas in the report will be reviewed by different audiences, so it would be better to keep attention on the five areas. Dr. Johnson said the foreword can still identify the top three.

Commissioner Hellweg said the purpose of the top three is to make sure California invests political will in making sure those items happen and get implemented. She noted that all ten things are important, but many will not happen in the public eye. She recommended choosing the top three that the Commission wants to have in the public eye so people are ready when the

next earthquake happens. She advocated focusing on things that will make an apparent difference for the state.

Chairman Strack thanked Commissioners for their feedback, and he thanked Dr. Johnson for her report.

VII. SELECT TECHNOLOGIES AND CAPABILITIES TO IMPROVE EARTHQUAKE RESILIENCY IN CALIFORNIA

Chairman Strack welcomed Dr. Sharon Kedar, Research Scientist, Jet Propulsion Laboratory (JPL). Dr. Kedar stated that JPL submitted a draft report on its findings at the last meeting. Since then, he reported, a Phase I study was completed to identify technologies that would help the state in post-disaster damage assessment and pre-event hazard assessment. He said the report identifies three technologies with beneficial potential, and he welcomed the Commission's guidance regarding the direction of Phase II.

Dr. Kedar noted that the three technologies JPL identified are FINDER, the briefcase-size radar detector using to find people trapped under rubble; spaceborne radar and UAVsar, both of which can be used to conduct quick post-earthquake damage assessments and to assess soil deformation and hazards before earthquakes. He said JPL hopes to work with the Commission to develop state-specific protocols, including emergency flight path authorizations and improvements in other decision-making processes. He stated that JPL can provide both data products and training to ensure optimization of the system.

Dr. Kedar said another promising technology is airborne gas leak detection, and stated JPL devices were deployed in the recent Aliso Canyon gas leaks. He added that multiple state agencies have expressed interest in this kind of technology, and the California Energy Commission and Air Resources Board are funding a 30,000-square-kilometer baseline methane study using JPL's system late this summer.

Mr. McCarthy suggested having a meeting at JPL to develop a Phase II proposal for the Commission's consideration at the July meeting. Dr. Kedar expressed interest in pursuing that approach.

Mr. McCarthy recommended that the Commission approve Phase I of the project and authorize the staff to work with JPL representatives to develop a Phase II proposal.

ACTION: *Commissioner Wheatley made a motion, seconded by Commissioner Johnson, to approve the Phase I report and authorize the staff to proceed to develop a Phase II proposal as recommended.*

* Motion carried, 11 – 0.

VIII. REVIEW AND APPROVAL OF GUIDE TO IDENTIFY AND MANAGE COLLAPSE RISK BUILDINGS FOR LOCAL GOVERNMENTS

Staff Structural Engineer Fred Turner invited Commission feedback on the latest version of *The Guide to Identify and Manage Collapse-Risk Buildings for Local Governments*. He said the

Executive Summary has not changed, but figures and images have been added, the appendix has increased, and there were minor revisions to the text. He recommended hiring a professional editor to edit and refine the appendix, and then seeking input from key stakeholders. He welcomed comments from Commissioners.

Commissioner Johnson observed that the latest changes were very helpful in generating interest and curiosity.

Commissioner Knudson commended Mr. Turner for doing a fabulous job of incorporating commissioners' editorial comments, and she expressed her appreciation to the committee members and staff who worked on this excellent product.

Commissioner Wheatley echoed Commissioner Knudson's praise, and he said the guide will be very useful to local governments. He suggested providing a review copy to the League of California Cities. Mr. Turner said he would, and he added that he planned to contact CSAC as well. Commissioner Wheatley noted that the Institute for Local Government is the research arm for both entities, and that organization could provide excellent policy feedback. Mr. Turner thanked Commissioner Wheatley for his suggestions.

Mr. McCarthy said he hoped to have administration feedback quickly so the document can be disseminated for review and comments.

IX. LEGISLATION

Legislative and Communications Director Salina Valencia provided an update on three bills the Commission was tracking. She said AB 1783 (Dodd), a bill pertaining to nonstructural earthquake hazard assessment of school facilities, passed from the Assembly Education Committee without opposition and was being held in Senate Appropriations on the suspense file. She reported that AB 1707 (Linder), the Public Records Response Request Act, passed from the Assembly Judiciary Committee to Local Government. She noted that AB 1566 (Wilkes), a bill on reporting, failed in the Assembly Accountability Committee.

Ms. Valencia said AB 1346 (Gray) and SB 438 (Hill), pertaining to funding for the statewide earthquake early warning system, were both still awaiting a hearing date in the Assembly Organization Committee.

Ms. Valencia said the Assembly introduced a housing package that featured a one-time fund of \$1.3 billion, including \$60 million for seismic retrofit of soft-story buildings, so the staff is watching that bill.

Ms. Valencia reported that the Administration is still working on language establishing the California Earthquake Early Warning Advisory Board, a concept that keeps CalOES as the lead agency and leaves the Commission in its current position. She said that instead of having a Commission representative on the new board, the plans have changed to having the Agency secretary on the board.

Commissioner Wheatley thanked Valencia for her support in the recent Legislative Action Days

in Sacramento focusing on housing issues.

Chairman Strack thanked Valencia for her report.

X. EXECUTIVE DIRECTOR'S REPORT

Budget

Ms. Daniel thanked Commissioners for submitting their Fair Political Practices Commission disclosure forms on time.

Ms. Daniel advised that the FISCAL system has been very slow in paying vendor invoices, so the staff has been using the new system at the State Controller's office to expedite the process. She said there should be a one-week turnaround on reimbursements after that.

Ms. Daniel reported that in spite of the FISCAL transition problems, the Commission is at 45 percent completion for closing its books for the fiscal year, a very good rate of progress compared to other state agencies. She drew attention to the forecast of expenditures and receipts through the end of June, and noted the estimated surplus.

Chairman Strack confirmed that the Commission budget would be in good financial shape for the remainder of the fiscal year.

Mr. McCarthy cautioned that the FISCAL system may cause an unforeseen expenditure at some point. He recommended that the Commission authorize the staff to use the unapplied overhead

in the event there is an unanticipated deficit at the last minute.

ACTION: Commissioner Hellweg made a motion, seconded by Commissioner Gardner, that:

The Commission authorize the Chair, Vice Chair, and Executive Officer to approve use of unapplied research project overhead costs.

* Motion carried, 11 – 0.

Ms. Daniel advised that the research fund has a remaining balance of \$4.1 million.

Mr. McCarthy said he was awaiting written materials about the HayWired event scheduled for October 20 and 21. He noted that Commissioner Sweiss has arranged a meeting location in Oakland during that week, and he recommended that the Commission meet there in conjunction with the HayWired scenario in October. He said the scenario will include a post-disaster fire and financial impacts from loss of Internet access to the state for one week. Mr. McCarthy promised to provide more details later. He asked commissioners to block off those dates on their calendars.

Commissioner Hellweg advised that the statewide shakeout is scheduled for October 20 at 10:20 a.m.

Mr. McCarthy informed the Commission that the Governor's Office of Business and Economic Development would be holding a business recovery workshop on May 18 in Oakland featuring

panel discussions on a range of topics, with opportunities for audience members to ask questions and converse. He said he would send out flyers advertising the event, and he encouraged commissioners to attend. He noted that the Commission partnered with Cal OES, Go BIZ, and SBDC to promote the Commission's guidebook for small businesses. Mr. McCarthy added that GoBIZ expressed strong interest in participating in the upcoming HayWired event in October.

XI. ASSESSING COASTAL AND OFFSHORE HAZARDS IN SOUTHERN CALIFORNIA

Chairman Strack noted the next scheduled speaker was Dr. Neal Driscoll, UC San Diego. Mr. McCarthy explained that Dr. Driscoll had not yet arrived, and he suggested taking a brief recess.

At 11:35 a.m., the Commission took a short recess. Chairman Strack reconvened the meeting at 12:00 noon.

Chairman Strack introduced Dr. Driscoll and invited him to address the Commission. Dr. Driscoll welcomed the Commission to southern California. He presented the results of recent tests on two alternative hypotheses about the structure of offshore California. He said numerous investigators have identified key features in the offshore area, so UC San Diego scientists wanted to test some of their predictions. He noted this effort, a collaboration between state and federal government agencies, the private sector, and academia, was incredibly successful in leveraging funds. He talked about how funding for the research was obtained from a combination of grants and private contributions.

Dr. Driscoll discussed the morphology of the offshore area and pointed out some of the major structures. He pointed out the location of the San Diego Trough fault and other geologic features. He said some scientists theorize that sedimentation from strike-slip earthquakes causes offshore promontories, depressions, and other deformations because of compression and tension; while others believe a large blind thrust exists under the San Diego shoreline and extends offshore, causing the deformation. Dr. Driscoll introduced the team of researchers who helped test the two hypotheses.

Dr. Driscoll reported that the results of the testing suggest that the offshore deformations are not caused by action of a blind thrust fault; instead, they show a series of northeast-southwest faults. He said the shoal structures seem to have been created by offshore compressions and extensions. He concluded that of the two models, the strike-slip model seems more consistent with observations. Dr. Driscoll stated that there is no evidence supporting the oceanside blind thrust model, so that hypothesis is being rejected.

Dr. Driscoll said UC San Diego researchers are working to develop a fault map that provides the relative ages of all offshore faults along southern California that can be used to estimate probabilities.

Chairman Strack thanked Dr. Driscoll for his presentation.

XII. PUBLIC COMMENT

There were no members of the public who wished to address the Commission.

XIII. MISCELLANEOUS & GOOD OF THE MEETING

There were no other items brought to the Commission's attention.

XIV. ADJOURN

There being no further business, Chairman Strack thanked everyone for attending, and the meeting was adjourned at 12:25 p.m.