

Minutes of Commission Meeting

State Capitol, Room 437

Sacramento, California

July 14, 2016

Members Present

Timothy Strack, Chairman

Tracy Johnson, Vice Chair

Christina Curry (for Mark Ghilarducci)

Michael Gardner

Randall Goodwin

Elizabeth Hess (for Ken Cooley)

Helen Knudson

Dan Levernier (for Chet Widom)

Mia Marvelli

Kit Miyamoto

Ian Parkinson

David Rabbitt

Fuad Sweiss

Mark Wheatley

Members Absent

Greg Beroza

Anthony Cannella

Peggy Hellweg

Staff Present

Richard McCarthy, Executive Director

Lena Daniel, Administrative Manager

Robert Anderson, Sr. Engineering Geologist

Henry Reyes, Special Projects Manager

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.

II. CHAIRMAN'S REMARKS

Chairman Strack noted that the agenda had been revised to add a presentation on the recent Ecuadorean earthquake.

III. APPROVAL OF MINUTES –MAY 12, 2016 COMMISSION MEETING

ACTION: Commissioner David Rabbitt made a motion, seconded by Commissioner Michael Gardner, that:

The Commission approve the minutes of the May 12 meeting as presented.

- * Motion carried, 11 – 0 (Commissioners Randall Goodwin, Mark Wheatley, and Kit Miyamoto absent during voting).

IV. APPOINTMENT OF NOMINATING COMMITTEE

Chairman Strack asked Commissioners Mia Marvelli and Helen Knudson to serve as a Nominating Committee to screen candidates for chairman and vice chair and recommend a slate of officers at the September meeting, and Commissioners Marvelli and Knudson agreed to serve.

Executive Director Richard McCarthy said Commissioners interested in being officers should

submit statements of interest to the Nominating Committee.

V. EARTHQUAKE EARLY WARNING IMPLEMENTATION FRAMEWORK

Commissioner Christina Curry provided an update on the earthquake early warning network, a long-awaited improvement that builds on existing products and technology. She said the implementation framework identifies the necessary tasks and timetables for expanding the California Integrated Seismic Network in conjunction with the California Office of Emergency Services (Cal OES), United States Geographical Survey (USGS), other government agencies, and private industry contributors. Commissioner Curry noted that the framework is an internal private document at this point, but there will be broad public outreach later. She welcomed feedback from Commissioners on the implementation framework.

Commissioner Curry advised that the 2016/2017 state budget includes \$10 million from the general fund for start-up costs for the earthquake early warning system, and USGS and other partners will be making additional contributions. She said this money will pay for expanding the existing seismic sensor network, an education component, staffing, and development of a long-term financing strategy. Commissioner Curry informed the Commission that SB 438, pertaining to development of the earthquake early warning system, was modified in mid-June to include a governance structure, and the bill passed out of the Assembly to Appropriations. She added that Cal OES is pleased with its positive interactions with the Legislature.

Commissioner Curry commented that California is taking a leadership role in partnering with

federal and state government agencies, as well as private contributors, to implement the earthquake early warning system. She said the next major deliverable will be a more detailed build-out schedule by this fall.

Legislative Director Salina Valencia noted that SB 438 establishes an advisory board charged with developing a business plan by February of 2018 and making yearly progress reports to the Legislature.

Commissioner Knudson observed that the framework deals mostly with technical issues, and she asked if there were plans to develop educational components and products to help communities and individual members of the public. Commissioner Curry responded that those areas of implementation were not as well developed as some of the more technical components, and she agreed that public outreach and education were critically important. She stated that Cal OES is committed to ensure that all public outreach programs are based on solid research as to their effectiveness, and that they incorporate lessons learned from past earthquakes and other countries.

Commissioner Marvelli asked what other state agencies will be involved in the implementation process. Commissioner Curry replied that a wide range of agencies will participate, including the Department of Parks and Recreation, Department of Health and Human Services, Department of Transportation, the California Business, Consumer Services and Housing Agency, and the Department of General Services (DGS). She added that Cal OES is also talking with individual cabinet members responsible for state buildings and properties.

Commissioner Marvelli said the state should instrument its essential facilities to ensure post-emergency functionality of essential services and equipment. Commissioner Curry agreed, and observed that state facilities are also dependent on utilities, information technology services, and private infrastructure to remain functional, and dealing with these issues will be complicated.

Commissioner Goodwin thanked Commissioner Curry for clearly articulating a complex process. He asked what steps remain to be done in terms of the funding process. Commissioner Curry responded that the budget will need to be based on a scientific cost-benefit analysis, and then a long-term financial strategy will be developed. She added that this process will be done very carefully and deliberately, and the analysis should be completed this year.

Commissioner Marvelli asked about the costs to local governments to implement components of the implementation plan. Commissioner Curry replied that the local component has not yet been defined. She said Cal OES be identifying existing resources that can be leveraged, education and training programs, and private-sector investments.

Chairman Strack thanked Commissioner Curry for her report.

Mr. McCarthy noted that the Seismic Safety Commission is a member of the Earthquake Early Warning working group, and he pointed out that the Commission's logo is on the cover of the framework documents. He recommended that the Commission pass a motion to support the framework, either at this meeting or the next.

Commissioner Parkinson asked if there was any reason not to approve the framework at this meeting. Chairman Strack said that in his opinion, there was no reason to wait. He noted that Business Consumer Service and Housing Agency has been involved and the project is moving forward, so the Commission should demonstrate its ongoing support.

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

The Commission accept the implementation framework document as proposed.

Commissioner Marvelli asked if the Commission would be receiving regular updates on the progress of implementation. Chairman Strack said the Commission will receive frequent updates as things develop.

* Motion carried, 13 – 0 (Commissioner Miyamoto absent during voting).

VI. FINAL REPORT ON THE SOUTH NAPA EARTHQUAKE

Mr. McCarthy recommended that the Commission approve the final report on the South Napa earthquake. He said the Commission conducted hearings in October of 2014 and then deliberately waited a year after the earthquake to see how recovery actions occurred. The Commission hired Dr. Laurie Johnson, Pacific Earthquake Engineering Research Center, to

compile the data, conduct additional research, write a report, and make recommendations. He noted that the Commission held a workshop session in March to review all of the recommendations and identify priorities in each area covered by the report, and the Agency is pleased with those recommendations.

Mr. McCarthy proposed adding one additional sentence to the report regarding the recommendations that were not selected as priorities. He said Commissioner Gardner proposed the following new language: “The Commission did not select these recommendations for a short-term focus due to priority logistical and financial considerations.” He suggested adding this sentence at the end of Page vi of the Executive Summary so it reads as follows: “The Commission’s 20 findings and 12 priority recommendations not contained in the body of this report. Additional recommendations that were identified during this study are provided in the appendix. The Commission did not select these recommendations for a short-term focus due to priority logistical and financial considerations.” Mr. McCarthy observed that the purpose of the report is not to cast blame, but to identify problems and issues that should be corrected to improve the existing system.

Mr. McCarthy said State Geologist John Parrish submitted proposed language combining Recommendations 1 and 2 pertaining to revisions to the Alquist-Priolo Act, but that change was not made because it would have changed the structure of the document, delaying its release. He suggested bringing this back as an action item so the Commission can express its support for what the California Geological Survey (CGS) is proposing.

ACTION: Commissioner Wheatley made a motion, seconded by Commissioner Tracy Johnson, that:

The Commission approve the final report on the South Napa earthquake as amended.

Commissioner Curry noted that the recommendations include developing gas safety plans and consumer protections, and she asked about plans to approach appropriate agencies to make sure they take responsibility for those items. Mr. McCarthy said the Agency is working with Cal OES and the administration to identify responsible parties.

Commissioner Swiss agreed that the responsible agencies need to be identified for follow-up. He expressed strong support for the recommendations and emphasized the need to disseminate them to government agencies and the public.

Mr. McCarthy observed that the Commission can act on some of the recommendations.

Commissioner Swiss recommended focusing on assigning responsibility for the top priority recommendations in each group. Commissioner Johnson stated that some of the recommendations were already being implemented, such as the changes to the Alquist-Priolo Act being contemplated by CGS and the educational programs being developed by Cal OES.

Commissioner Goodwin added that Cal OES, the California Association of Local Building Officials, and others have already begun training programs.

* Motion carried, 14 – 0.

VII. REPORT ON ECUADOREAN EARTHQUAKE

Commissioner Miyamoto providing a briefing on the 7.8-magnitude earthquake in Ecuador on April 16. He commented that no city in the world is prepared for this magnitude of disaster. He presented slides showing a map of the epicenter area and the types of damage resulting from the earthquake. He reported that there was tremendous devastation along Ecuador's coastline, with 659 deaths, over 27,000 people injured, and 7,000 buildings destroyed. Commissioner Miyamoto remarked that the timing of the earthquake on a Saturday afternoon was fortunate because schools and many businesses were closed.

Commissioner Miyamoto showed slides of damage to nonductile concrete structures and older buildings, including schools and churches. He stated that 80 percent of the building stock was destroyed in some towns, so many people are now homeless. Commissioner Miyamoto pointed out that California still has many older schools that pose similar risks, and he recommended fixing those dangerous buildings as soon as possible.

Commissioner Miyamoto stated that Ecuador has a good building code, equivalent to California's, and good engineering practices, but buildings did not perform as well as the public expected. He noted that one important lesson from this earthquake is that following minimum building code, with life safety as its goal, does not protect buildings from damage. He said there was extensive nonstructural damage that forced people to vacate, and he presented slides of high-rise condominium buildings along the coast as examples. He observed that many property

owners did not have insurance.

Commissioner Miyamoto said contractors were quick to respond after the earthquake, but they acted too quickly to demolish damaged buildings that might have been repairable. He pointed out that it takes much longer to build than it does to strengthen an existing building, so this mistake will affect the speed of recovery.

Commissioner Miyamoto observed that the Ecuadorean earthquake underscores the critical importance of communicating to the public about risks and identifying solutions and mitigation actions. Commissioner Gardner agreed, noting that the public does not understand the limitations of a life-safety minimum standard. He recommended that the Commission work to educate the public so they know that buildings may not be usable after a major earthquake.

Commissioner Gardner noted that the cost differential of building to a higher standard is not great, so the Commission should spread that message. He added that building owners should know that retrofitting older buildings can be cost-effective in the long run. Commissioner Miyamoto concurred, and estimated that exceeding minimum code typically adds about 5 percent to a construction budget. Commissioner Gardner said building to the standard required for essential services facilities adds about 25 to 35 percent to the costs.

Commissioner Miyamoto commented that California's minimum standard of life safety reflects short-term thinking because many building owners are looking for a return on their investment in four or five years. He said Japan's buildings perform better because the government publicizes

the benefits of building to higher standards and provides tools such as rating systems.

Commissioner Gardner recommended devoting discussion at the next meeting to making public outreach one of the Commission's highest priorities.

Commissioner Johnson asked why some of the newer steel-frame buildings did not perform well in the Ecuadorean earthquake. Commissioner Miyamoto responded that the intensity of the earthquake was higher than the maximum building code level, but there were also some deficiencies in quality control.

Commissioner Rabbitt asked if Ecuador uses construction materials and methods similar to those in California. Commissioner Miyamoto said Ecuador's moment frame structures are better than California's because they provide for more lateral forces. He noted that Japan's buildings also outperform California's. He added that California's building code philosophy has not evolved in fifty years. Commissioner Rabbit commented that local governments reviewing development proposals look at energy efficiency and LEED green building ratings, but they tend to overlook seismic safety standards. He observed that taking seismic safety into account is a challenge for builders.

Commissioner Goodwin noted that the code-making process is not well understood by the public. He agreed that the Commission should work to communicate the benefits of higher standards by emphasizing the greater return on investment in the long run. He said this message needs to be articulated in multiple pieces and on many different levels.

Commissioner Miyamoto remarked that the code-making process is highly political. He expressed his opinion that the building code is fine as it is, but better communication about expectations and options is needed.

Commissioner Miyamoto said the building code should define a range of performance options, with a focus on resiliency. Commissioner Marvelli recommending pointing out that resiliency can result in better insurance coverage, and encouraging insurance companies to give discounts for improved resiliency. Commissioner Miyamoto observed that California has very expensive earthquake insurance with high deductibles, so less than 10 percent of homeowners purchase the coverage. He said that New Zealand has a coverage rate over 90 percent, but some banks are now facing bankruptcy because of the total loss of buildings they financed. He added that losses in New Zealand are not estimated at \$25 billion.

Commissioner Wheatley remarked that premature demolition of damaged buildings has long-term economic impacts on affected communities. Commissioner Miyamoto said engineers see this frequently, because people panic after the earthquake, and there not enough qualified structural engineers on hand to properly assess damaged buildings. He noted that Japan is different because it has frequent experience with earthquakes, and people generally exercise good judgment. He observed that California's last major urban disaster was the earthquake of 1906, so the state's population today lacks that experience.

Commissioner Curry observed that although the current building code does not address many

types of nonstructural damage. She advocated promoting awareness and encouraging mitigation.

Commissioner Sweiss said most people do not understand the distinction between prevention of collapse versus damage. He acknowledged that the timing of a large earthquake is important, and reported that San Francisco is focusing especially on private schools. He urged the Commission and others to promote the benefits of the earthquake early warning system through outreach and education.

Commissioner Sweiss asked about damage to infrastructure, utilities, and lifelines in Ecuador.

Commissioner Miyamoto said disruption was not great, and power was restored quickly in most areas, although cell phone service was out for an extended time. He noted that most of the damage affected the commercial center of Portoviejo, but not the outlying areas.

Mr. McCarthy asked whether the aftershock sequence was affecting recovery. Commissioner Miyamoto said people were rushing to take down buildings to prevent their collapse, and he acknowledged that having many aftershocks causes a delay in rebuilding. He recommended that building owners repair and strengthen earthquake-damaged buildings as soon as possible as a way to maximize their return on investment. He advocated creating incentives to encourage commercial investment, noting that there are plenty of case studies that corroborate the effectiveness of this approach.

Commissioner Miyamoto said cities should accommodate and assist their small businesses to prevent loss of jobs and loss of business. He concluded by repeating the saying, "Money and

knowledge and the most important things to have after an earthquake.”

Chairman Strack thanked Commissioner Miyamoto for his report.

VIII. PROPOSED PROJECT: POST-EARTHQUAKE BUSINESS RECOVERY: LEARNING FROM JAPAN’S EXPERIENCES

Mr. McCarthy noted that the Commission has a long-standing relationship with the Japanese Consulate in San Francisco. He said the proposed project is an opportunity to interview Japanese companies in California about post-earthquake recovery their recovery programs and needs, and then to apply some of those lessons and techniques in California. He introduced Dr. Guna Selvaduray, Professor of Engineering and Executive Director of the Collaborative for Disaster Mitigation, and invited him to discuss the proposal in more detail.

Dr. Selvaduray noted that in response to major earthquakes and disasters in Japan and elsewhere, the Japanese national government and local governments created incentive programs to encourage businesses to develop recovery plans to assist affected employees and ensure the continuity of their business operations in the period after a disaster, and many Japanese companies doing business in California have expressed a high level of interest in post-earthquake survival and recovery. Dr. Selvaduray stated that Japan is the largest foreign nation investor in California, with over 1400 Japanese companies doing business in the state, accounting for \$11 billion in payroll, and 96 percent of their employees are local hires.

Dr. Selvaduray said the proposal calls for working with the Northern California Japanese Chamber of Commerce, with 720 members, and the Southern California Japanese Business Association, with 670 members. By interviewing company representatives, he explained, the researchers hope to learn from Japan's experience and identify post-earthquake programs and incentives that can help speed recovery. He noted this project will entail collecting information on existing programs and their effectiveness; surveying Japanese companies to identify their recovery needs; and developing materials, relevant regulations, and assistance programs. Dr. Selvaduray noted that the findings and products can then be expanded to develop a better business recovery strategy for California.

Commissioner Curry asked if the study would look at the effectiveness of earthquake early warning systems in promoting rapid recovery. Dr. Selvaduray confirmed that earthquake early warning systems would be included. Mr. McCarthy said this topic has been raised in meetings with Japanese business people. He recommended that Dr. Selvaduray start with a focus on economic recovery issues, and then give the respondents a description of California's planned components for a full critique. Dr. Selvaduray agreed that it would be very useful to discuss their perceptions of California's current capabilities and plans.

Commissioner Knudson suggested finding out if Japanese companies will help their U.S. employees to the same extent as they help their employees in Japan. Commissioner Miyamoto noted that many Japanese companies have subsidiaries worldwide, not just in California.

Mr. McCarthy said some Japanese companies have asked for guidance as the safest place in

California to build, which is information that state can provide.

Commissioner Johnson emphasized the need to make sure this project benefits both sides involved, not just Japanese businesses. She noted that it would be helpful to California to find out more about post-earthquake recovery needs and gain insight from the experiences of Japanese businesses. Dr. Selvaduray confirmed that California will also benefit. He said businesses in California are interested in finding out about recovery resources and assistance programs, so the study findings can be shared with them. He added that once recovery needs are identified, effective responses can be identified to help the broader commercial sector in California.

Mr. McCarthy said the Japanese consulate has a wealth of knowledge about post-earthquake economic practices and incentives that have not been well documented in the U.S., and mentioned the example of a special tax-free zone for ten years in Sendi. He noted that this study presents an opportunity for a more detailed survey and sharing of information.

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

The Commission move forward with the contract as proposed, in coordination with Cal OES.

* Motion carried, 14 – 0.

IX. LEGISLATIVE REPORT

Ms. Valencia reported that Governor Brown signed the 2016/2017 state budget on June 27. She advised that this budget limits continues the goal of reducing state spending and building up the rainy-day fund, which has a current balance of \$6.7 billion. She noted that funds are being allocated for programs that invest in education, reduce poverty, lower housing costs and strengthen infrastructure, including \$1.3 billion for improvements to state facilities, \$270 million in bonds for local jails, and \$688 million for deferred maintenance. Ms. Valencia said the Legislature will reconvene on August 1.

Ms. Valencia provided an update on specific pieces of legislation. She reported that AB 1783, addressing school facilities and nonstructural hazards, has moved to the Senate Appropriations Committee; SB 438, although amended to eliminate some funding, still provides start-up funds for the earthquake early warning system; and AB 918 continues the state's emergency plan and requires regular updates.

Ms. Valencia reported that the Commission's contract with Michael Kleeman is moving forward. She said the contract is currently awaiting Agency approval, and then it will be forwarded to DGS for legal review.

Ms. Valencia congratulated Commissioner Miyamoto for receiving the Presidential "E" Award in recognition of his contributions to the expansion of U.S. exports.

Chairman Strack thanked Ms. Valencia for her report.

X. EXECUTIVE DIRECTOR'S REPORT

Seismic Safety Commission Budget

Administrative Manager Lena Daniel reported that the Commission staff has been working with Contracted FI\$CAL Services to close the books on Fiscal Year 2015/2016, but the transition to the new FI\$CAL accounting system has been very challenging. She advised that things are improving and old bills are finally being paid, and she thanked commissioners for their patience. She noted that a third wave of state agencies is converting to the new system now.

HayWired Scenario Postponed

Ms. Daniel informed Commissioners that the HayWired event schedule for September has been postponed, the Commission's planned meeting in Oakland this fall will not be taking place. She said Commissioner Rabbitt offered to host the next meeting in Sonoma County and the will be meeting in Santa Rosa on September 8 and 9.

Mr. McCarthy noted that the HayWired scenario event was postponed. He indicated that the event will take place in late winter or early spring, and he proposed that the Commission meet in Oakland then.

Commissioner Swiss recommended notifying Oakland's Mayor and her staff know about the

change in plans, and he volunteered to communicate with her about the postponement.

Chairman Strack agreed that the Commission should express appreciation to the Mayor and her staff for their efforts and let them know that the Commission will meet in Oakland once the in conjunction with the HayWired event.

Mr. McCarthy commented that the HayWired event will be a major event for the entire San Francisco and Oakland region, and he noted it will take time to organize and plan the activities. He advised that the scenario will include disruption of Internet service and economic losses. He said the rescheduled event is likely to take place next March or April.

Staffing Update

Mr. McCarthy expressed his appreciation to Ms. Daniel and Ms. Valencia for their persistence in dealing with the ongoing FI\$Cal transition problems. He pointed out that the Commission only has 5 ½ staff members now, so bill-paying issues have added to the workload challenges.

Update on San Francisco Public Utilities Commission (SFPUC) Water System Improvement Project

Staff Structural Engineer Fred Turner stated that the Commission is charged with assessing the seismic safety impacts of delays in the SFPUC water system improvement project. He explained that the SFPUC delivers water from the Hetch Hetchy to 2.5 million people in the Bay Area, and

major system upgrades are underway. He reported that the overall project is 90 percent completed, and all aspects will be finished in 2019. He said the new Calaveras Dam is still under construction and is not expected to be completely filled until 2021.

Mr. Turner advised that the Commission is reviewing the ninth delay in the project schedule. He noted that Commissioner Gardner volunteered to work with the staff to draft a report, which is due 90 days from July 1. He added that a draft synopsis will be presented to the Commission for approval at the September meeting.

Commissioner Wheatley thanked Mr. Turner for attending the recent League of California Cities' Housing and Economic Development meeting and distributing copies of the Commission's updated guidebook for local governments.

XI. PUBLIC COMMENT

Dr. Graham Kent, Director, Nevada Seismological Laboratory, University of Nevada, Reno, and Vice-Chair, Nevada Earthquake Safety Council, reported that Nevada's fire camera network has proven useful in spotting a number of fires throughout the state of Nevada. He noted that Nevada has taken a multi-hazard approach to resiliency, and he urged California to emulate this model. He remarked that California does not have a fire camera network at the current time. Dr. Kent noted that after a major disaster, cell phone service is likely to be disrupted for several weeks, so having an emergency-grade network in place would be a big benefit for both California and Nevada.

XII. MISCELLANEOUS & GOOD OF THE MEETING

Commissioner Wheatley stated that the Humboldt County grand jury recently issued a report highlighting the need to upgrade facilities to prevent tsunami and earthquake losses.

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

XIII. ADJOURN

There being no further business, Chairman Strack thanked everyone for attending, and the meeting was adjourned at 12:22 p.m.