



Cal OES
GOVERNOR'S OFFICE
OF EMERGENCY SERVICES



ALFRED E. ALQUIST
SEISMIC SAFETY COMMISSION MEETING
In-person and Teleconference Meeting
Thursday, July 18, 2024

1. Call to Order and Roll Call

Chair Rabbitt called the meeting to order at approximately 10:07 a.m.

Tanya Black conducted the roll call. The following table details each Commissioner's and Representative's attendance status.

Commissioner	In-Person	Virtual	Absent
David Rabbitt, Chair, Local Government	X		
Debra Garnes, Vice-Chair, Local Government	X		
Stoyan Bumbalov, Building Standards Commission	X		
Ida Clair, CA Division of State Architect	X		
Alegría De La Cruz, Social Services		X	
Representative Lori Nezhura for Nancy Ward, CA Governor's Office of Emergency Services (Cal OES)	X		
Joone Kim-Lopez, Public Utility			X
Kevin McGowan, Emergency Services			X
Dr. H. Kit Miyamoto, Structural Engineer		X	
Representative Astghik Hakobyan for Senator Portantino, CA Senate Member			X
Representative Allison Kustic for Assemblymember Rodriguez, Vice Chair, California (CA) Assembly Member	X		
Cindy Silva, Local Government	X		
Vincent Wells, Fire Protection	X		
Total Attendance:	8	2	3

2. Chair Remarks

Chair Rabbitt expressed gratitude for everyone's attendance, thanked former Chair Silva, and acknowledged the staff for their dedicated work.



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3. Public Comment: Items on Agenda

Chair Rabbitt opened the floor for public comments on the agenda items. There were no public comments.

4. Approval of Seismic Safety Commission (SSC) April 11, 2024 Meeting Minutes:

Commissioner Silva moved to approve the SSC meeting minutes of April 11, 2024, seconded by Representative Nezhura. A roll call vote was conducted, and the motion passed unanimously. The following table provides details on the vote.

Commissioner	Yes	No	Abstained	Not Present
David Rabbitt, Chair	X			
Debra Garnes, Vice-Chair	X			
Stoyan Bumbalov			X	
Ida Clair	X			
Alegría De La Cruz	X			
Representative Lori Nezhura	X			
Joone Kim-Lopez				X
Kevin McGowan				X
Dr. H. Kit Miyamoto				X*
Representative Astghik Hakobyan				X
Representative Allison Kustic	X			
Cindy Silva	X			
Vincent Wells	X			
Total Votes:	8	0	1	4

*Note: Commissioner Miyamoto was present virtually but did not vote or abstain and thus was marked not present.



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5. Approval for SSC Website Update Ad-Hoc Committee - Annde Ewertsen, Executive Director, SSC

Executive Director Annde Ewertsen explained that while the website update process has started, no significant updates have been made. A Request for Offer (RFO) has been issued to find someone to help improve website content and navigation. The minor updates include earthquake activity reports and fixing broken links. In addition to content updates and reorganization, a primary goal is to update a 20-year-old seismic safety graphic to be more interactive.

A survey was conducted to find interested members for an Ad-Hoc Committee for this project. Commissioner Silva and Vice-Chair Garnes expressed interest.

Commissioner Wells motioned to approve Commissioner Silva and Vice-Chair Garnes as members of the SSC Website Update Ad-Hoc Committee, seconded by Commissioner Clair. A roll call vote was conducted, and the motion passed unanimously. The following table provides details on the vote.

Commissioner	Yes	No	Abstained	Not Present
David Rabbitt, Chair	X			
Debra Garnes, Vice-Chair	X			
Stoyan Bumbalov	X			
Ida Clair	X			
Alegría De La Cruz	X			
Representative Lori Nezhura	X			
Joone Kim-Lopez				X
Kevin McGowan				X
Dr. H. Kit Miyamoto	X			
Representative Astghik Hakobyan				X
Representative Allison Kustic	X			



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Cindy Silva	X			
Vincent Wells	X			
Total Votes:	10	0	0	3

6. Approval for SSC Staff to Participate on Advisory Panel and Committee - Annde Ewertsen, Executive Director, SSC

- a. United States Geological Survey (USGS) Grant—Influence of Climate Change on Earthquake Hazard & Risk, Universities of Berkeley and Merced—Advisory Panel Request
- b. National Aeronautics and Space Administration (NASA) NASA Solicitation and Proposal Integrated Review and Evaluation System (NSPIRES) Research Opportunities in Space and Earth Science (ROSES) Grant—Estimating Damage in Seismic Multi-hazard Events (Causality informed Bayesian Frameworks for Cascading Seismic Multi-hazards and Impacts Estimation by Integrating Multi-modal Remote- and Crowd Sensing data), John Hopkins University, University of Florida, USGS, and NASA—Advisory Committee Request

SSC received two requests for support letters and participation on an advisory panel and a committee. The first request is for a USGS Grant to study climate change's influence on earthquake hazard and risk, specifically modeling a magnitude 7 earthquake on the Hayward fault under Diablo wind conditions.

The second request comes from a NASA NSPIRES Research Grant. This research aims to improve emergency management using technologies such as proxy damage maps, social media, and liquefaction and transportation data.

Vice-Chair Garnes motioned to authorize SSC staff to make any non-substantive Commission edits, finalize and approve the Letters of Support, and participate in the advisory panel and committee, seconded by Commissioner Silva. A roll call vote was conducted, and the motion passed unanimously. The following table provides details on the vote.



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Commissioner	Yes	No	Abstained	Not Present
David Rabbitt, Chair	X			
Debra Garnes, Vice-Chair	X			
Stoyan Bumbalov	X			
Ida Clair	X			
Alegría De La Cruz	X			
Representative Lori Nezhura	X			
Joone Kim-Lopez				X
Kevin McGowan				X
Dr. H. Kit Miyamoto	X			
Representative Astghik Hakobyan				X
Representative Allison Kustic	X			
Cindy Silva	X			
Vincent Wells	X			
Total Votes:	10	0	0	3

7. Earthquake Reconstruction in Türkiye and New Zealand: Lessons for California - Dr. H. Kit Miyamoto, S.E., Global CEO & Humanitarian Coordinator Miyamoto.

Dr. Miyamoto shared insights from the February 2023 Türkiye earthquakes, noting that outdated codes led to significant damage, but base isolation in new hospitals proved effective. Dr. Miyamoto praised Türkiye's swift response, including rapid contractor mobilization and temporary shelters, and highlighted the use of real-time satellite imagery for damage assessment.

Dr. Miyamoto pointed out Türkiye's efficient building assessment using QR codes but mentioned a gap in addressing lightly and moderately damaged buildings.



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Dr. Miyamoto also discussed the 2011 Christchurch earthquake, where 90% of downtown buildings were lost despite strong building codes. To expedite recovery for California, Dr. Miyamoto suggests focusing on functional codes, reducing restrictive red zones, and streamlining building permits.

Discussion:

Commissioner Silva inquired about Dr. Miyamoto's use of "red zone." Dr. Miyamoto explained that excessive red-tagging delayed recovery and emphasized the need for realistic risk assessments in California.

Representative Nezhura asked if Christchurch's building standards have become stricter. Dr. Miyamoto confirmed they have, driven by public demand and stressed that California needs improved standards and recovery planning.

Chair Rabbitt asked whether insurance contributed to Christchurch's extended post-earthquake closure and why fires were not a major issue after the earthquakes. Dr. Miyamoto explained that Christchurch had ample insurance but encountered bureaucratic delays in reconstruction. Noting that concrete structures in Christchurch and Türkiye reduced fire risk and recommended measures like automatic gas shutoff valves to prevent post-earthquake fires in California.

8. Adaptive Reuse - Annde Ewertsen, Executive Director, SSC and Jia Wang-Connelly, Senior Structural Engineer, SSC

Executive Director Ewertsen introduced the topic of adaptive reuse. This involves repurposing existing buildings to optimize their use, considering factors like structure, functional needs, regulatory compliance, and market demand.

The Los Angeles Adaptive Reuse Ordinance is being updated due to high commercial vacancy rates. Additionally, two bills are updating the Mills Act: AB 2909 extends tax incentives for commercial buildings over 30 years old, and AB 2910 allows Los Angeles to adopt alternative regulations for converting commercial properties to residential use. Both bills are currently in the first chamber.



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Presentation: Adaptive Reuse - Ryan Kersting, Structural Engineers Association of California (SEAOC)

Ryan Kersting, a practicing structural engineer in Sacramento and a member of SEAOC, discussed the adaptive reuse of commercial buildings into residential spaces. While California's existing building codes address adaptive reuse, they often do not mandate code updates unless certain thresholds are met. These include significant changes in design load, structural configuration, or risk category.

Local ordinances, like those in San Francisco and Los Angeles, have introduced additional triggers to improve building performance. These cities require evaluations when significant alterations are made, even if structural components are unaffected.

Ryan Kersting highlighted that while converting office buildings to residential use does not alter the risk category, it does increase the amount of time occupants spend in the building, raising their exposure to seismic risks. Building codes currently do not address this increased risk exposure.

Finally, Ryan Kersting stressed the need for uniform policies across California to address adaptive reuse and ensure building safety and resilience, urging mandatory programs to improve existing building stock and support vulnerable populations.

Discussion:

Dr. Miyamoto stressed that affordability is crucial for effective adaptive reuse and public support and noted that while the soft-story ordinance retrofit code programs were successful because these retrofits have cost-effective upgrades, current programs demanding 75% seismic design forces are too expensive.

Ryan Kersting advocated focusing on long-term costs and performance, not just initial expenses, to ensure buyers understand the full implications of their investments.



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Commissioner Silva raised concerns about the challenges in converting office buildings to residential use, stressing the need for clear communication with legislators.

Commissioner Rabbit inquired about safety standards for residential high-rises. Ryan Kersting confirmed that while standards are similar, they vary with risk categories and occupant load, highlighting the importance of adapting to changing building needs.

9. San Francisco Concrete Building Safety Program - *Brian Strong, Chief Resilience Officer and Director Office of Resilience and Capital Planning, City and County of San Francisco and Laurel Matthews, Senior Earthquake Resilience Analyst City and County of San Francisco*

Brian Strong discussed San Francisco's resilience planning, including hazard mitigation, capital planning, and retrofitting programs. Brian Strong highlighted efforts to incentivize earthquake-resilient buildings, such as public evaluations and mandatory retrofits, and emphasized the importance of integrating various strategies to improve building performance and resilience.

Laurel Matthews discussed San Francisco's concrete building safety program, which aims to identify, evaluate, and retrofit vulnerable concrete buildings to prevent structural failures. The program targets non-ductile concrete buildings and tilt-up structures. Laurel Matthews noted the program's extensive stakeholder engagement and highlighted key recommendations, including financing, communication, tenant relocation, and process streamlining. Recent progress includes a directive to draft legislation for mandatory screening and establish building code retrofit standards.

Brian Strong highlighted the importance of adaptive reuse for concrete building retrofits, suggesting pre-occupancy retrofitting to save costs. The main challenges are financing and improving building inventories. Brian Strong stressed ongoing stakeholder engagement, citing San Francisco's soft-story program's success due to early communication and extended timelines.



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Discussion:

Dr. Miyamoto noted the simplicity of retrofitting soft-story and masonry buildings compared to concrete structures. Financial constraints remain a major hurdle and financial incentives, such as property tax credits for seismic strengthening, would be beneficial.

Brian Strong recognized the financial limitations, emphasizing the need for long-term planning. Commercial buildings, especially Class B and C, need incentives, and condo owners face challenges in affording necessary retrofits. Laurel Matthews mentioned an upcoming hazard mitigation grant program aimed at developing a financing strategy for building owners.

Commissioner Rabbitt emphasized the themes of financing and affordability, commending San Francisco's soft-story program for successfully incentivizing upgrades and adding accessory dwelling units (ADUs).

10. Earthquakes, Climate, Fire, Water – California's Needs - Dr. Charles Scawthorn, S.E., SPA Risk LLC, Pacific Earthquake Engineering Research Center, University of California at Berkeley

Dr. Charles Scawthorn delivered a pre-recorded video presentation focused on the impact of earthquakes on water supply systems. Research found that earthquakes significantly reduce the service life of buried water pipes, potentially by up to 40 years. The 2014 Napa earthquake highlighted this, leading to massive economic losses.

Dr. Scawthorn emphasized the critical role of water supply in firefighting after earthquakes, using examples from San Francisco, Kobe, and Los Angeles to demonstrate how water system failures increase fire risks. Dr. Scawthorn advocated for better coordination between water and fire agencies and recommended implementing systems like San Francisco's high-pressure auxiliary water supply, underground cisterns, and portable water supplies for firefighting.



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He also discussed the importance of Seismic Gas Shut-off Devices (SGSDs) to prevent post-earthquake fires, noting Japan's success with these devices. California's building codes do not currently mandate SGSDs.

Dr. Scawthorn concluded by urging the commission to promote policies that ensure water agencies and local jurisdictions are better equipped to manage the impacts of future earthquakes so California can substantially mitigate the risks associated with earthquakes.

11. Fire Following Earthquake - Darius Luttrupp, Deputy Chief of Operations San Francisco Fire Department

Darius Luttrupp highlighted San Francisco's comprehensive preparations for post-earthquake fires. The Auxiliary Water Supply System (AWSS) is a specialized network with high-pressure hydrants, cisterns, and fireboats, offering independent water sources. High-pressure hydrants can triple firefighting capacity by using gravity-fed water from reservoirs and tanks, while cisterns provide localized water reserves throughout the city.

Darius Luttrupp noted the importance of early fire detection and the challenges faced by post-earthquake communication. The department's strategy includes decentralizing command for faster decision-making. They maintain a robust staffing level and high-capacity equipment to handle potential conflagrations. Additionally, they have initiatives like the Neighborhood Emergency Response Team (NERT) to aid in fire reporting and response.

The fire department's Portable Water Supply System (PWSS) acts as a backup, bridging gaps in the water supply network with portable hoses and pumps. They have contracted with Rosenbauer for modern Hose Tenders, significantly enhancing their firefighting capabilities. These Hose Tenders can pump 5,600 gallons per minute and are mobile, functioning like "land fireboats." However, due to budget constraints, there are challenges in maintaining and expanding this fleet.



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Discussion:

Commissioner Wells asked about navigating post-earthquake road hazards and fallen structures. Darius Luttrupp replied that addressing these issues requires proactive planning and situational awareness.

Chair Rabbit compared San Francisco's preparedness favorably to other areas, mentioning ongoing challenges in Sonoma County and the need for continued investment in hazard mitigation and infrastructure upgrades.

12. Project Updates - Annde Ewertsen, Executive Director, SSC

a. Ferndale & Türkiye

Part 1: Executive Director Ewertsen acknowledged the completion of the Ferndale Earthquake Sequence Report and introduced John Catching from the California Specialized Training Institute. John Catching presented a new recovery training program for local governments, covering public and individual assistance. The program will begin with proclamation and damage estimate training, followed by sessions on assistance programs. It will cover all disaster types to enhance understanding of state and federal resources.

Executive Director Ewertsen also discussed the SSC's request to consult the Office of Rural Advocate on threshold requirements and considerations. Staff is working with Cal OES recovery experts to prepare a document for SSC approval.

Part 2: Doublet/Triggered Scenarios: Pacific Earthquake Engineering Research (PEER) is working on Vol 1 and 2 of the report. The presentation has been delayed until the SSC January 2025 meeting.

Part 3: Resilience/Recovery Project Scenarios: The contract with the IN-CORE team has been executed, and the kick-off meeting has been held. This project is also delayed and will be presented to SSC in January 2025.



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b. Fire Station Inventory

The fire station inventory project surveyed 3,200 stations and received 435 responses by July 16th. Initial HAZUS runs have been completed. Key findings include: 34% of buildings were built between 1941 and 1973, 71% are urban, and 60% are interested in Earthquake Early Warning (EEW). Most stations are single-story and rectangular, with 74% not remodeled and 97% not retrofitted. Emergency power is connected to 67% of front bay doors but is less frequently installed for additional doors.

c. Northridge Anniversary—Quake Heroes

The Quake Heroes project approved nearly a year ago, had its first kickoff meeting last week. The project includes dubbing films into Spanish and Chinese. Planning dates for related events will be provided soon. This project is part of the Northridge 30th Anniversary campaign promoting earthquake preparedness.

Quake Heroes Events have already occurred independently, and details about upcoming events will be shared with Commissioners. Through May 2025, SSC will fund ten events in yet to be identified underserved communities.

d. Shake Table Project

The Shake Table Project is progressing with no significant updates. The contract is extended through December 31, 2025, with Shake Table testing expected in the summer of 2025.

e. Mobile Home Building Code Project

The Mobile Home Building Code Project was submitted through the Building Resilient Infrastructure and Communities (BRIC) Building Code Plus-Up Program. It was selected for Round One review on July 2, 2024. 129 nationwide projects were selected for further review. The next step is awaiting Round Two reviews from FEMA Region 9, with no estimated date for decision-making.



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f. Earthquakes and Climate Change Workshop

Planning for the Earthquakes and Climate Change Workshop, approved at the last meeting, is ongoing. United States Geological Survey (USGS), California Geological Survey (CGS), and FEMA Region 9 are holding monthly meetings. Topics are being developed, and details on dates and times will be provided soon.

Discussion:

In response to the Fire Station Inventory project update, Commissioner Silva noted that fire stations built before the 1970s may need retrofitting. Executive Director Ewertsen replied that the data will be reviewed against current building codes.

13. Misc. Announcements - Annde Ewertsen, Executive Director, SSC

Executive Director Ewertsen introduced the new commissioner and staff person: Commissioner Stoyan Bumbalov, with 15 years of building code experience, and Nicole Mendoza, the new program manager. Executive Director Ewertsen also recognized Commissioner Miyamoto for his global contributions and awards. California State University sent a thank-you note to the SSC. Executive Director Ewertsen acknowledged the departing staff, Trinity Gleckler and Chris Lozano, and wished them well in their new roles.

14. Public Comment: Items Not on Agenda

No public comments were submitted regarding items not on the agenda.

Comments from Commission during Public Comment: Dr. Miyamoto highlighted Dr. Scawthorn's presentation on California hazard mitigation, emphasizing cost-effective solutions and the potential role of the insurance industry in reducing hazards.

Chair Rabbitt commented on insurance agencies using water restrictors and suggested gas shut-offs for earthquake-prone areas.



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15. **Adjourn**

Chair Rabbitt adjourned the meeting at approximately 1:46 p.m.

To view the full meeting recording, please visit the following links:

<https://www.youtube.com/watch?v=VP-YGqJihjU>

<https://www.youtube.com/watch?v=GdU-Jso1WmU>