Seismic Safety Commission Meeting Materials

January 9, 2025

ALFRED E. ALQUIST
SEISMIC SAFETY COMMISSION MEETING

January 9, 2025
10:00 am – 2:00 pm PST

In Person Location:
10370 Peter A. McCuen Blvd.
Mather, CA 95655
Building E: Santa Catalina Room

Virtual Information:

https://us02web.zoom.us/j/89469741574

Webinar ID: 894 6974 1574

Dial (Toll-free):
(888) 788-0099

For more information please contact:

Tanya Black 916-224-8819 or Tanya.Black@CalOES.ca.gov.

MEETING AGENDA	TIME EST.*	ACTION
1. Call to Order and Roll Call	5 mins.	Roll Call
2. Chair Remarks	5 mins.	Discussion
3. Public Comment: Items on Agenda	10 mins.	Discussion
4. Approval of Seismic Safety Commission (SSC) October 10, 2024, Meeting Minutes	5 mins.	Discussion & Action
5. Approval of the SSC December 12, 2024, Meeting Minutes	5 mins.	Discussion & Action
6. Election Policy	10 mins.	Discussion & Action
7. Improving Post-Earthquake Firefighting Water Supply Capacity Reliability - *Dr. Charles Scawthorn, S.E., SPA Risk LLC, UC Berkeley*	25 mins.	Discussion & Action
8. Ubiquitous Building Health Monitoring Using California's MyShake Smartphone App - *Richard Allen, Director, Berkeley Seismological Laboratory, UC Berkeley*	25 mins.	Discussion & Action
9. SSC Annual Reporting	15 mins.	Discussion & Action
Break	15 mins.	
10. Sponsorship of 19th World Conference on Seismic Isolation, Energy Dissipation, and Active Vibration Control of Structures (19WCSI), Berkeley	5 mins.	Discussion & Action
11. International Code Council Building Safety Month 2025 Proclamation	5 mins.	Discussion & Action
12. California Geological Survey (CGS) Update - *Jeremy Lancaster, PG CEG State Geologist, Director, CGS*	20 mins	Discussion
13. Project Updates - *Annde Ewertsen, SSC Executive Director*	15 mins.	Discussion
14. Miscellaneous Announcements	20 mins.	Discussion
15. CLOSED SESSION PURSUANT TO GOVERNMENT CODE § 11126(a)(1) Board to Meet in Closed Session to Discuss and Take Possible Action on Appointment of Acting Executive Director		
16. Public Comment: Items not on Agenda	10 mins.	Discussion
17. Adjourn	5 mins.	Adjourn

For more information please contact:

Tanya Black 916-224-8819 or Tanya.Black@CalOES.ca.gov.

***AGENDA SCHEDULE:** The timing and order of the topics listed on the agenda are subject to change and will depend on the duration and discussion of the presentations and/or speaker's availability.

STATEMENTS FROM THE PUBLIC: The public will be allowed to address the Seismic Safety Commission during Item 3 on any item on the agenda and Item 16 on any item not on the agenda. Questions posed to the Seismic Safety Commissioners may be answered after the meeting or during a future meeting. Dialog or extended discussion between the public and the Seismic Safety Commissioners or staff may be limited per the Bagley-Keene Open Meeting Act. Public comments will typically be limited to two (2) minutes per speaker; however, the Chair may decide to lengthen the public comment periods at their discretion. Although not required, speakers are requested to identify themselves by stating their name and city of residence for the official record. All remarks shall be addressed to the Seismic Safety Commission as a body. Speakers should be brief and are to limit their comments to the subject of discussion.

SIGN-UP & TIME LIMITS: If you wish to speak on an item and you are attending the meeting in-person or virtually and you know in advance that you'd like to comment on an item, please fill out a "Request to Speak" form and give it to a staff person before the meeting. The forms are available online with the current month's agenda here: https://ssc.ca.gov/. Submit any requests to speak to InfoSSC@caloes.ca.gov. If you attend virtually, the Chair will provide an opportunity to comment during the scheduled public comment section and after each item.

SUGGESTIONS FOR SUBMISSION OF WRITTEN MATERIALS: It is requested that written materials be submitted to the Commission staff prior to the meeting. If this is not possible, it is requested that at least 30 copies be submitted to the Commission. This material will be distributed to the Commission members. Applicants are responsible for presenting their projects at the public hearing. NO FAXES will be accepted at the meeting site. You may be able to make prior arrangements with staff by sending an email to InfoSSC@caloes.ca.gov but you will be responsible for paying the hotel or meeting site for its receipt.

ACCESS TO MEETING: Meeting facilities are accessible to persons with disabilities. If you require special assistance, please contact any staff member at the phone or email address below, prior to the meeting. An interpreter for the deaf will also be made available upon request to the staff at least five calendar days prior to the meeting.

For more information please contact:

Tanya Black 916-224-8819 or Tanya.Black@CalOES.ca.gov.

ALFRED E. ALQUIST
SEISMIC SAFETY COMMISSION MEETING
In-person and Teleconference Meeting
Thursday, October 10, 2024

1. Call to Order

Chair Rabbitt called the meeting to order at approximately 10:05 a.m.

The Seismic Safety Commission (SSC) conducted business on non-voting items until a quorum was met. Tanya Black conducted a roll call for Commissioners in attendance. In-person quorum requirements were not met. The following table provides details on the Roll Call.

Commissioner	In-Person	Virtual	Absent
David Rabbitt, Chair, Local Government	X		
Debra Garnes, Vice-Chair, Local Government	X		
Representative Irina Brauzman for Stoyan Bumbalov, Building Standards Commission	X		
Representative Diane Gould for Ida Clair, CA Division of the 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, California (CA) Assembly Member	X		
Cindy Silva, Local Government		X	
Vincent Wells, Fire Protection		X	
Total Attendance:	**6**	**5**	**2**

2. Chair Remarks

Chair Rabbitt expressed gratitude for everyone's attendance.

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) July 18, 2024, Meeting Minutes

Chair Rabbitt directed staff to skip Item 4 approval of the minutes until a quorum could be established. Chair Rabbitt moved to Item 5 of the agenda. After conducting roll call, Chair Rabbitt directed staff to return to Item 4 after Item 10. Commissioner Silva moved to approve the July 18, 2024, SSC meeting minutes, seconded by Commissioner Garnes. 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			
Representative Irina Brauzman			X	
Representative Diane Gould	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:	**9**	**0**	**1**	**3**

5. AB 100 Report – California Department of Transportation (Caltrans) – *Michael Keever, Chief Deputy Director & Rich Foley, Division of Engineering Services Chief, Caltrans*

Rich Foley, Chief of Division of Engineering Services, introduced himself along with his colleagues Michael Keever, Chief Deputy Director, and Chris Traina, Chief of Engineering.

Rich Foley highlighted the key components of Caltrans' California bridges self-assessment report, emergency response planning, and Post Earthquake Investigation Team (PEQIT). Strategic planning efforts ensure Caltrans has a roadmap for the response to and recovery from future earthquakes.

Under the advisement of the Caltrans' Seismic Advisory Board, Caltrans' work on the Seismic Safety of California Bridge Report has been ongoing for many years.

The AB 100 reporting requirement provides the perfect opportunity to present and publish the report. The report outlines the measures that Caltrans is currently undertaking and planning in the future to continue to improve the seismic safety of California bridges.

6. California Community Colleges – Presentation on Earthquake Readiness and Preparedness Activities– *Hoang Nguyen, Director of Facilities Planning, California Community Colleges*

Hoang Nguyen, Director of Facilities Planning for the Chancellor's Office, thanked the Commission for having him. He provided a brief history of the system regarding seismic safety for community colleges that began with the Field Act.

Discussion:

Chair Rabbit asked why stadiums were excluded. Hoang Nguyen responded that income-generating facilities were excluded from the on-set as they could fund their own retrofit.

The Commission asked how projects are identified. Hoang Nguyen advised it is at the discretion of the local campus. Hoang mentioned they work closely with the Division of the State Architect on seismic safety projects. Representative Gould said the way the building code works for existing buildings is, without a mandatory ordinance, existing buildings are not required to be retrofit unless work is performed.

7. University of California, Berkeley – Pacific Earthquake Engineering Research Center (PEER) Projects - *Dr. Khalid Mosalam, PhD, PE, F.ASCE, Professor and Director, PEER UC Berkeley*

Professor Khalid Mosalam, Director of Pacific Earthquake Engineering Research Center (PEER), provided information on PEER, a university, government, professional, and industry alliance that combines resources of major research universities in the Western United States where earthquake hazard is large. Currently, they have 11 core institutes. The Headquarters is at UC Berkeley and there are 9 educational affiliates. Professor Mosalam provided an update on current projects.

8. Earthquake Early Warning & ShakeOut Update – *Jose Lara, Deputy Director Planning, Preparedness, Prevention, Cal OES*

Jose Lara, Seismic Hazard Branch Chief for Cal OES, introduced himself and stated that as part of my duties, I oversee the earthquake, tsunami, and volcano program for Cal OES, and the California Earthquake Early Warning System. Mr. Lara provided an update on Earthquake Early Warning and ShakeOut projects.

Discussion:

Commissioner Rodriguez asked if a Spanish translation is possible on the MyShake app. Mr. Lara confirmed there is a Spanish version, based on the language that you have set on your phone, the MyShake app will automatically turn to those. There are currently six languages available.

Break

Chair Rabbitt called for break at 12:05 pm and the Commission reconvened at 12:20 pm.

9. **Northridge30 Anniversary: Quake Heroes Expos and More – *Mark Benthien, Director for Communication, Education, and Outreach for the Statewide California Earthquake Center***

Mark Benthien, Director for Communication, Education and Outreach for Statewide California Earthquake Center (SCEC). Mr. Benthien provided background on SCEC and an overview of its projects.

10. **A Culture of Earthquake Resilience – Update on CRMP Residential Retrofit Grant Programs (EBB, ESS, and the new multi-unit EMR) – *Janiele Maffei, S.E., Chief Mitigation Officer, California Earthquake Authority (CEA)***

Janiele Maffei, S.E., Chief Mitigation Officer, California Earthquake Authority gave a presentation on the different grant programs that are administered by the California Residential Mitigation Program and supported by CEA and Cal OES.

Discussion

Commissioner Garnes mentioned we should remember this program does not fully fund a retrofit. Many times, people have to pay out of pocket or seek a loan for many thousands of dollars to complete these projects. Ms. Maffei confirmed this to be true and encouraged applicants to seek qualified contractors.

Roll Call

Chair Rabbit called for Roll Call to establish a quorum. Roll Call was taken by Tanya Black to meet the quorum requirements. In-person quorum requirements were met. The following table provides details on the vote.

Commissioner	In-Person	Virtual	Absent
David Rabbitt, Chair, Local Government	X		
Debra Garnes, Vice-Chair, Local Government	X		
Representative Irina Brauzman for Stoyan Bumbalov, Building Standards Commission	X		
Representative Diane Gould for Ida Clair, CA Division of the State Architect	X		
Alegría De La Cruz, Social Services			X
Representative Lori Nezhura for Nancy Ward, Cal OES	X		
Joone Kim-Lopez, Public Utility		X	
Kevin McGowan, Emergency Services; left at 1:18 pm		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:	**7**	**4**	**2**

11. Fire Following Earthquake – Reducing Post-Earthquake Ignitions – *Dr. Charles Scawthorn, S.E. SPA Risk LLC, PEER UC Berkeley*

Dr. Charles Scawthorn, Structural Engineer, shared a presentation regarding a proposal on reducing fire following earthquake ignitions. Dr. Scawthorn is requesting $90,000 for this project.

Commissioner Miyamoto moved to approve the Reducing Post-Earthquake Ignitions project, seconded by Commissioner Garnes. 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			
Representative Brauzman	X			
Representative Gould	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**

12. Fire Following Earthquake – Improving Post-Earthquake Firefighting Water Supply Capacity Reliability – *Dr. Charles Scawthorn, S.E. SPA Risk LLC, PEER UC Berkeley*

Due to the time constraints for the meeting, SSC Chair David Rabbitt directed that this item will be heard at the next SSC meeting on January 9, 2025.

13. Project Updates - *Annde Ewertsen, Executive Director, SSC*

Director Annde Ewertsen gave the following updates on the recent projects for the SSC.

- Ferndale & Türkiye –
  - Part 1: Ferndale Earthquake Sequence: Understanding Impediments to Local Recovery in Rio Dell is complete. SSC, Recovery, and CSTI staff are working on a Public Assistance/Individual Assistance worksheet, rolling out in January 2025.
  - Part 2: PEER Volume 1 & 2 are delayed; expected in 2025.
  - Part 3: IN-CORE to present in 2025.
- Fire Station Inventory –
  - 709 of 3,200 responses received as of October 10, 2024.
  - 229 of 238 Cal FIRE stations responded.
  - SSC staff requested assistance from Tribal Coordination Office.
  - SSC staff working with Cal OES GIS team to create a dashboard.
  - AB 1770 (8587.9 GOV) chaptered on September 6, 2024, requires SSC to report annually on actions and conclusions between January 1, 2026 and January 1, 2030.
- Shake Table –
  - Test specimen construction is scheduled for late September through early 2025, followed by three months of instrumentation.
  - Earthquake testing in late April-May 2025, followed by live-fire tests in Summer 2025.
- Mobile Home Building Code –
  - Received Round 1 approval on July 2, 2024; waiting for Round 2 FEMA review.
- Earthquakes & Climate Change Workshop –
  - Planning meetings continue monthly.
  - Workshop topics and presenters defined.
  - Tentative dates: March 4 & 5, 2025.
- SSC Website & Design –
  - Contract delayed due to IT purchasing staffing levels.

14. Executive Director Process – *David Neill, Chief Counsel, Cal OES*

Cal OES Chief Counsel, David Neill advised Cal OES will consult and assist the Commission during the executive director appointment process. , Chief Counsel Neill advised the SSC will need another meeting prior to January 10, 2025, to approve the process and duty statement and appoint ad-hoc committee members.

Chief Counsel Neill mentioned if there is a need to appoint someone to serve in an acting capacity as executive director that could occur at the January, or other future meeting, in a closed session.

Discussion:

SSC Executive Director Annde Ewertsen asked if Commissioners could email their intent to serve on the ad-hoc committee.

Chief Counsel Neill confirmed, yes.

15. Miscellaneous Announcements - *Annde Ewertsen, Executive Director, SSC*

Executive Director Annde Ewertsen gave an update on the budget. The Special Deposit fund as of August 28, 2024, was at about $2.9 million with about $608,000 in encumbrances. With an additional $90,000 that was approved earlier in the meeting.

2025 meeting dates are set for January 9th, April 10th, July 17th, and October 9th. In addition, the SSC will have two new staff, starting on October 15th.

16. Public Comment: Items Not on Agenda

Chair Rabbitt opened the floor for public comments not on the agenda items. There were no public comments.

17. Adjourn

Chair Rabbitt adjourned the meeting at approximately 1:59 p.m.

To view the full meeting recording, please visit the following links:
https://youtu.be/q6mm2m3FRlo
https://youtu.be/JBflf1xj68o

ALFRED E. ALQUIST
SEISMIC SAFETY COMMISSION MEETING
In-person and Teleconference Meeting
Thursday, December 12, 2024

1. Call to Order and Roll Call

Chair Rabbitt called the meeting to order at approximately 10:14 a.m.

Tanya Black conducted a roll call for Commissioners in attendance and the quorum requirement was met.

Commissioner	In-Person	Virtual	Absent
David Rabbitt, Chair, Local Government		X	
Debra Garnes, Vice-Chair, Local Government		X	
Stoyan Bumbalov, Building Standards Commission		X	
Representative Diane Gould for Ida Clair, CA Division of State Architect			X
Alegría De La Cruz, Social Services		X	
Representative Jose Lara 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	
Assemblymember Rodriguez, California (CA) Assembly Member			X
Cindy Silva, Local Government			X
Vincent Wells, Fire Protection		X	
Total Attendance:	**1**	**6**	**6**

2. Public Comment: Items on Agenda

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

3. Executive Director Hiring Process

Vice Chair Garnes moved to approve the Executive Director Hiring Process, seconded by Commissioner Bumbalov. 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			
Representative Gould				X
Alegría De La Cruz	X			
Representative Jose Lara	X			
Joone Kim-Lopez				X
Kevin McGowan				X
Dr. H. Kit Miyamoto				X
Representative Astghik Hakobyan	X			
Freddie Rodriguez				X
Cindy Silva				X
Vincent Wells	X			
Total Votes:	**7**	**0**	**0**	**6**

4. Executive Director Duty Statement

Commissioner Bumbalov moved to approve the Executive Director Duty Statement, seconded by Commissioner De La Cruz. 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			
Representative Gould				X
Alegría De La Cruz	X			
Representative Jose Lara	X			
Joone Kim-Lopez				X
Kevin McGowan				X
Dr. H. Kit Miyamoto				X
Representative Astghik Hakobyan	X			
Freddie Rodriguez				X
Cindy Silva				X
Vincent Wells	X			
Total Votes:	**7**	**0**	**0**	**6**

5. Public Comment: Items Not on Agenda

Chair Rabbitt opened the floor for public comments on items not on the agenda. There were no public comments.

6. Adjourn

Chair Rabbitt adjourned the meeting at approximately 10:21 a.m.

To view the full meeting recording, please visit the following link:
https://youtu.be/BodEvfCFNXI

ALFRED E. ALQUIST
SEISMIC SAFETY COMMISSION MEETING

Memorandum

To: Seismic Safety Commissioners

From: Annde Ewertsen, Executive Director

Date: January 9, 2025

Subject: Election Policy

Recommendation:

Staff recommends Commissioners review the background information, be prepared to provide comments/questions on the presentation and provide further directions by voting on Item 6.

Background:

Article 5.1 of the Government Code Section 8589.72. states the Seismic Safety Commission (SSC) shall elect a Chairperson and Vice-Chairperson annually. SSC's policy is to seek candidates for the officer position of Chair and Vice-Chair who have the specific skills or expertise necessary to provide leadership for SSC.

The current election policy states the Chair will announce the upcoming election of Chair and Vice Chair at the first meeting of the year and that a vote will commence at the second meeting of the year. Per the policy, to be eligible to apply for the officer positions, a commissioner must have a minimum of a year remaining on their SSC appointment. Currently, and likely until at least May 2025, only 6 of the 12 current commissioners are eligible to apply.

SSC staff are recommending that Commissioners move the election for the Chair and Vice Chair to the July 17, 2025, SSC meeting.

Alfred E. Alquist
SEISMIC SAFETY COMMISSION

Policy and Procedure for Election of Officers

Adopted June 23, 1994
Revised September 1997
Revised January 2023

Policy Statement:
Article 5.1 of the Government Code Section 8589.72. states the SSC shall elect annually from its membership its own chairperson and vice-chairperson. It is the policy of SSC to seek candidates for the officer positions of Chair and Vice-Chair that have the specific skills or expertise necessary to provide leadership for SSC.

The following procedure shall be followed regarding election of the Chair and Vice-Chair:

1. The Chair announces the upcoming election of Chair and Vice-Chair and the procedures to be followed at the first meeting of the year.
2. The annual election of the Chair and Vice-Chair shall be conducted at the next meeting of the SSC (e.g., second meeting of the year).
3. All SSC Commissioners may be considered as candidates for nomination for the Chair and Vice-Chair provided that the term of their appointment does not end prior to or during the term of the office for which they wish to be considered as a candidate.
4. Candidates will be required to submit a Statement of Qualifications (SOQ) (see attachment) to ensure that they have the proper competencies, experience, and willingness to fulfill their duties and responsibilities as Chair and Vice-Chair. The SOQ will be submitted to the SSC Executive Director to ensure completeness. Only completed SOQs will be distributed to Commissioners for their review of the candidates' qualifications. The SOQs will be considered public documents and should be drafted accordingly.
5. There will be no formal line-of-succession approach from year-to-year, wherein the Vice-Chair becomes the nominee for SSC Chair.
6. Voting shall be conducted in Open Session
    i. The candidates will have an opportunity to address the SSC, for no more than three minutes, regarding their qualifications for the position.
    ii. Each SSC Commissioner will have the opportunity to ask one question of each candidate.

Alfred E. Alquist
SEISMIC SAFETY COMMISSION

Policy and Procedure for Election of Officers (cont.)

iii. SSC Commissioners shall vote on the candidate for approval.
iv. The Chair-elect and Vice-Chair-elect must receive a majority of votes from the Commissioners or their representatives to be elected.
v. In the event that multiple candidates (more than two) are nominated for either position, and no candidate has a majority of votes, the top two candidates will be voted on during a second round.
vi. Election of the Vice-Chair shall be conducted in the same manner as that of the Chair.
vii. If the current Chair and Vice-Chair are the only candidates who have submitted an SOQ, SSC Commissioners will vote to re-appoint.
viii. If candidates for the Chair and Vice-Chair are running unopposed and they are not currently serving as Chair and Vice-Chair, a vote must commence.
ix. If no candidates submit for either position, then nominations may be taken from the floor during the meeting at which the election will take place. The requirement to submit a SOQ shall be waived under such circumstance.
x. Until the positions are filled, the current Chair and Vice-Chair will remain in their respective positions provided they are still members of the Commission.
xi. Officers shall assume their duties immediately following the election.

The following criteria shall be used when selecting a nominee for Chair and Vice-Chair as it reflects the duties and responsibilities of those positions:

Willingness to:

- Understand the SSC policies and procedures and Roberts Rule of Order
- Encourage full participation of Commissioners in SSC business
- Ensure individual members do not dominate discussions and that others fully engage in the deliberations
- Consult with Executive Director on the proposed agenda for upcoming meetings

Alfred E. Alquist
SEISMIC SAFETY COMMISSION

Policy and Procedure for Election of Officers (cont.)

- Conduct/chair meetings
- Adhere to the decisions and policies of the SSC
- Participate in any legislative efforts
- Serve as contact for other pertinent organizations
- Make reports at SSC meetings as needed

Has:

- Ability to get things done efficiently and strong consensus-building attributes
- Time available for SSC activities and willingness to make appropriate commitments
- Overall leadership abilities and a broad perspective and understanding of issues related to seismic safety
- A Commission membership term that does not expire prior to or during the term of the office for which they wish to stand for election.

DUTIES:

The duties of the officers are as follows:

Chair:

1. Appoints members and chairs of such committees as are necessary for the orderly conduct of business.
2. Circulates or causes to be circulated an announcement and an agenda for each regular or special meeting of the SSC.
3. Presides during meetings of the SSC.
4. Calls for votes on the issue once there has been adequate discussion.
5. Consults on the preparation of reports mandated by the Legislature (e.g., AB 100 report) as well as any other reports requested by the Executive Director.

Vice-Chair:

1. Shall assist the Chair in the performance of the required duties.
2. Shall preside at the meeting if the Chair is unable to attend.
3. Shall perform such other duties as from time-to-time may be assigned by the SSC or by the SSC Chair.

Alfred E. Alquist
SEISMIC SAFETY COMMISSION

Policy and Procedure for Election of Officers (cont.)

ABSENCES and VACANCIES:

- In the event the Chair is unable to attend or preside over a meeting, the Vice-Chair will preside. If the Vice-Chair is also unable to preside, the Executive Director will assume the duties until the return or availability of the Chair or Vice-Chair.

- If Chair resigns or their term of office expires, then the Vice-Chair shall immediately assume all duties of the Chair. If the vacancy involves the Vice-Chair, the SSC shall elect a new Vice-Chair following the election process described above. If the vacancies involve both the Chair and Vice-Chair, the Commission will conduct new elections.

ALFRED E. ALQUIST
SEISMIC SAFETY COMMISSION MEETING

Memorandum

To: Seismic Safety Commissioners

From: Annde Ewertsen, Executive Director

Date: January 9, 2025

Subject: Improving Post-Earthquake Firefighting Water Supply Capacity Reliability

Recommendation:

Staff recommends Commissioners review the background information, be prepared to provide comments/questions on the presentation, and provide further directions by voting on Item 7.

Background:

Dr. Scawthorn, a structural engineer, visiting researcher at the University of California, Berkeley, and a retired Professor at Kyoto University, is recognized as a leading expert on fire-following earthquakes. He advises Global 1000 corporations, government agencies, and the World Bank on natural hazards risk management. At the July 2024 SSC meeting, he presented an overview of recent fire-following earthquake research and risk assessment developments. He returned in October 2024 receiving approval for the Reducing Post-Earthquake Ignitions study.

Dr. Scawthorn will provide a presentation following-up on recommendations from his 2011 SSC-funded report ("Water Supply in Regard to Fire Following Earthquake"). He requests the SSC support a workshop for water agencies and fire departments to discuss water distribution issues after an earthquake.

Improving Post-earthquake Firefighting Water Supply Capacity / Reliability

Charles Scawthorn, S.E.
Pacific Earthquake Engineering Research Center, Univ. California at Berkeley

Summary: The current capacity and reliability of post-earthquake firefighting water in large parts of California is poor, as found over a decade ago in a project funded by the Seismic Safety Commission. We propose to examine the current capacity of fire and water agencies for reliable post-earthquake firefighting water supply, identify options for improving capacity, and evaluate the long-term damage earthquakes cause to water distribution networks. This will be accomplished by analyses and surveys and interviews with key larger water and fire agencies in California. Based on findings, a series of mitigation measures such as secondary water sources, portable water supply systems and pre-earthquake preparedness will be examined and prioritized for cost-effectiveness. Analyses will also be conducted to examine how longer-term losses can be reasonably assessed in order to support more accurate and complete damage assessments and claims These findings will be shared with the fire and water agencies in a workshop, followed by presentations to selected agencies' senior management/directors. Results will be disseminated online and documented in a final written report. The research will be performed by PEER at UC Berkeley over a 12-month period, requiring $75,000.

The Issues: Water is of course vital for life, fire safety and the well-being of communities in California. Earthquakes cause great damage to water distribution networks to the extent that large areas of California's largest cities can lose all water pressure, can take days to weeks to restore this pressure, and take months to years to completely repair and restore the network. The immediate loss of pressure deprives fire departments of firefighting water and is a major factor in large urban conflagrations. This risk involves both fire and water agencies and is being exacerbated by climate change and has the potential for truly holocaust dimensions given foehn wind conditions (i.e., Santa Ana or Diablo winds). Moreover, research has recently shown that water agency distribution networks sustain much greater long-term damage requiring accelerated pipe replacement, than if the earthquake had not occurred[1]. Thus, earthquakes create two significant water system-related issues: (1) for fire and water agencies, will they be able to supply adequate firefighting water following a major earthquake? If not, how can this situation be improved? (2) for water agencies, how great is long-term earthquake damage, how can it be quantified, and to what extent can appropriate data can be provided to FEMA and the State when assessing damage and potential aid?

Background and related work: In 2011 the Seismic Safety Commission (SSC) funded a study on firefighting water supply[2], which found based on a survey of over 100 fire and water agencies in California, that the crucial need for post-earthquake firefighting water supply is falling through a gap, and recommended dissemination of these findings to fire and water agencies, development of state-

[1] Scawthorn, Charles, and Keith Porter. 2022. *Effect of Major Stress Events on Buried Pipe Service Life*. Denver: SPA Risk LLC, research supported by the Water Research Foundation

[2] Scawthorn, C. 2011. *Water Supply In Regards To Fire Following Earthquakes*. PEER Report 2011/08. Berkeley: Pacific Earthquake Engineering Research Center, College of Engineering, University of California, sponsored by the California Seismic Safety Commission, available at https://ssc.ca.gov/wp-content/uploads/sites/9/2020/08/cssc_2011-02_watersupply_peer.pdf with four page summary at http://peer.berkeley.edu/publications/peer_reports/reports_2011/Fire%20Following%20Earthquake-online-view-layout-sm.pdf .

wide goals for post-earthquake firefighting water, and development of a standardized California portable water supply system (PWSS), that would be deployed in major urban areas. More than a decade has elapsed since then, and whether and how these recommendations have been implemented is unknown. More recently, research funded by the Water Research Foundation (WRF) has shown that earthquakes cause much greater long-term damage than previously understood[3]. This finding and its implications are not widely known by California water agencies.

Proposed research and activities: To address these issues, we propose the following activities:

1. **Survey of water and fire agencies:** to understand the current situation, a survey similar to the 2011 survey of over 100 major urban California fire and water agencies will be designed, tested and deployed. The survey will be updated to reflect the findings of the 2011 SSC and 2022 WRF projects as well as the current situation. The results of this survey will inform next steps.
2. **Mitigation measures**: Based on the survey and consultation with selected fire and water agencies and a Project Advisory Panel, a spectrum of mitigations such as resilient water grids, portable water supply systems, earthquake early warning and other approaches will be investigated to identify cost-effective measures for medium and large population jurisdictions in high seismicity areas of California. These investigations will draw on and extend work previously done for San Francisco[4], Los Angeles[5] and other jurisdictions[6]. The result of this task will be a spectrum of mitigation measures with documentation and materials for presentation to water and fire agencies, presented in a prioritized risk or ranked matrix to allow individual agencies to determine a mix of mitigation measures suited to their own system.
3. **Total damage cost**: A key issue for water agencies is assessing the total cost of water system damage following an earthquake. Restoration of service is urgent and often leads to incomplete assessment of damage and only temporary repairs. Recent work has shown that disaster aid claims to FEMA often account for only these initial costs and omit longer-term losses[1]. Based on this recent work, analyses will be conducted to examine how longer-term losses can be reasonably assessed in order to support more accurate and complete damage assessments and disaster aid claims.
4. **Workshop**: An invitational workshop will be organized for California water and fire agencies, sponsored by SSC and other relevant organizations to be determined. The purpose of the workshop will be to inform water and fire agencies of the two issues (fire following earthquake risk, and long-term distribution network damage), and the spectrum of mitigation measures available for reducing these risks. The workshop will include a plenary session with keynote presentations, and parallel sessions, the latter organized in two ways: (1) separate sessions for fire and water agencies, for exchange within their specific domains, and (2) sessions combining fire and water agencies, to promote exchange between the two domains and explore cross-

[3] Scawthorn, Charles, and Keith Porter. 2022. *Effect of Major Stress Events on Buried Pipe Service Life*. Denver: SPA Risk LLC, research supported by the Water Research Foundation.

[4] Scawthorn, C. 2017. *Study of Options to Reduce Post-Earthquake Fires in San Francisco*. ATC-119. Redwood City: Applied Technology Council.

[5] Scawthorn, C., K. Porter, and C. A. Davis, "*Benefit-Cost Optimization of Resilient Lifeline Networks*," presented at the San Fernando Earthquake Conference - 50 years of Lifeline Engineering, University of California, Los Angeles, California USA: American Society of Civil Engineers, Feb. 2022, p. 12.

[6] Multi-Hazard Mitigation Council. 2019. *Natural Hazard Mitigation Saves: 2019 Report.* Principal Investigator Porter, K.; Co-Principal Investigators Dash, N., Huyck, C., Santos, J., Scawthorn, C. . Washington D.C: Multihazard Mitigation Council, National Institute of Building Sciences. Prepared for FEMA, see https://www.nibs.org/files/pdfs/NIBS_MMC_MitigationSaves_2019.pdf

domain solutions and synergies. Proceedings of the workshop will be published and distributed to all attendees, as well as being a joint SSC-PEER publication. Based on the workshop, material will be produced summarizing the two issues and available solutions for online dissemination.

5. **Follow-up**: An anticipated outcome of the workshop will be requests from individual water and fire agencies for more detailed discussions and in-house presentations to directors, senior management and staff. The project will budget for such follow-up agency support activities within the 6 months following the workshop. These activities may be specific to one (larger) agency, or involve several neighboring agencies.
6. **Deliverables and Final Report**: the main deliverables will be (1) the survey and findings; (2) identification and analysis of a ranked matrix of mitigation measures to reduce risk due to fire following earthquake, (3) guidelines on how longer-term losses can be reasonably assessed to arrive at total damage cost in order to support more accurate and complete damage assessments and claims; (3) a worksheet or toolkit to assist individual agencies in ranking mitigation measures appropriate to their own system, (4) a Workshop for fire and water agencies; (5) follow-up support meetings, and (6) a final report to SSC documenting the project and its outcomes, with materials for online dissemination.

Project Advisory Panel: Panelists to be identified and confirmed

Schedule / Budget: The research will be carried out over a 12-month period, requiring $75,000.

Funding mechanism: Seismic Safety Commission grant to the Pacific Earthquake Engineering Research Center, Univ. California at Berkeley.

ALFRED E. ALQUIST
SEISMIC SAFETY COMMISSION MEETING

Memorandum

To: Seismic Safety Commissioners

From: Annde Ewertsen, Executive Director

Date: January 9, 2025

Subject: Ubiquitous Building Health Monitoring Using California's MyShake Smartphone App

Recommendation:

Staff recommends Commissioners review the background information, be prepared to provide comments/questions on the presentation, and provide further directions by voting on Item 8.

Background:

Richard Allen, Director of Berkeley Seismological Laboratory UC Berkeley, and a member of the Earthquake Team at Google, is an expert in Earthquake Early Warning. His work includes development of methodologies to detect and issue warnings before a seismic event such as the MyShake application smartphones.

Richard Allen will present and ask the Commission to approve a 12-month, $105,000 contract to research how recent MyShake smartphone app results waveforms can be used to extract the information about building health, specifically the natural frequencies of the building, following an earthquake.

Toward ubiquitous state-wide building health monitoring using California's MyShake smartphone application

Proposal to the California Seismic Safety Commission

Principal Investigator: Prof Richard Allen (rallen@berkeley.edu)
Postdoctoral researcher: Dr Utpal Kumar

UC Berkeley Seismology Lab

Abstract

Structural Health Monitoring (SHM) is essential for ensuring the safety and resilience of buildings, particularly in earthquake-prone regions like California. However, traditional SHM systems are often prohibitively expensive, limiting their application to a small subset of structures. This proposal leverages the MyShake smartphone application as a minimal-cost, scalable alternative for SHM. MyShake, with over 2 million active users in California, utilizes the accelerometer in smartphones to autonomously record building vibrations both during ambient conditions and also during earthquake shaking.

We have demonstrated that the seismic waveforms collected by the MyShake app can be used to extract the natural frequencies of a building both during earthquake shaking, and also when triggered overnight during ambient conditions. The natural frequency of a building is a key indicator of the building's structural integrity. By analyzing ambient vibration data, a baseline frequency can be established for buildings. Then, when an earthquake occurs, the seismic event data can be used to detect shifts in the frequency which are a key indicator of structural damage.

The goal of this proposal is to (1) take the first step towards an operational system that automatically extracts the natural frequencies of building across the state from the expanding MyShake waveform archive, and (2) collect MyShake waveform data from a 10-story CFS-framed building on the San Diego Shake Table as it is progressively damaged by earthquake shaking to validate the reliability of MyShake's measurements under controlled dynamic conditions.

This approach offers transformative potential for SHM, enabling early damage detection, long-term monitoring of structural health, and cost-effective scalability. The integration of advanced technology and widespread smartphone infrastructure positions the state-funded MyShake app as a significant tool to democratize SHM and enhance seismic resilience across California and beyond.

Background

Structural Health Monitoring (SHM) is a critical process for ensuring the safety and integrity of buildings and infrastructure. However, traditional SHM methods, relying on dedicated sensors and infrastructure, are often cost-prohibitive, limiting their deployment to a fraction of the structures that need monitoring. California, with its significant seismic risk, requires innovative solutions to address this gap affordably and effectively.

The MyShake smartphone application presents an unprecedented opportunity to democratize SHM. Leveraging the widespread availability of smartphones—over 3.7 million downloads globally, with almost

2 million users in California (**Figure 1**, Kong *et al.*, 2016; Patel and Allen, 2022)—MyShake collects valuable accelerometric data during earthquakes. Its ability to autonomously record vibrations offers a scalable, no-cost alternative to traditional SHM systems.

This proposal aims to develop a preliminary no-cost SHM system for buildings in California using MyShake. By focusing on natural frequency as a key indicator of structural health, this project will assess the feasibility of smartphone accelerometers for monitoring building integrity under both ambient and seismic vibration conditions.

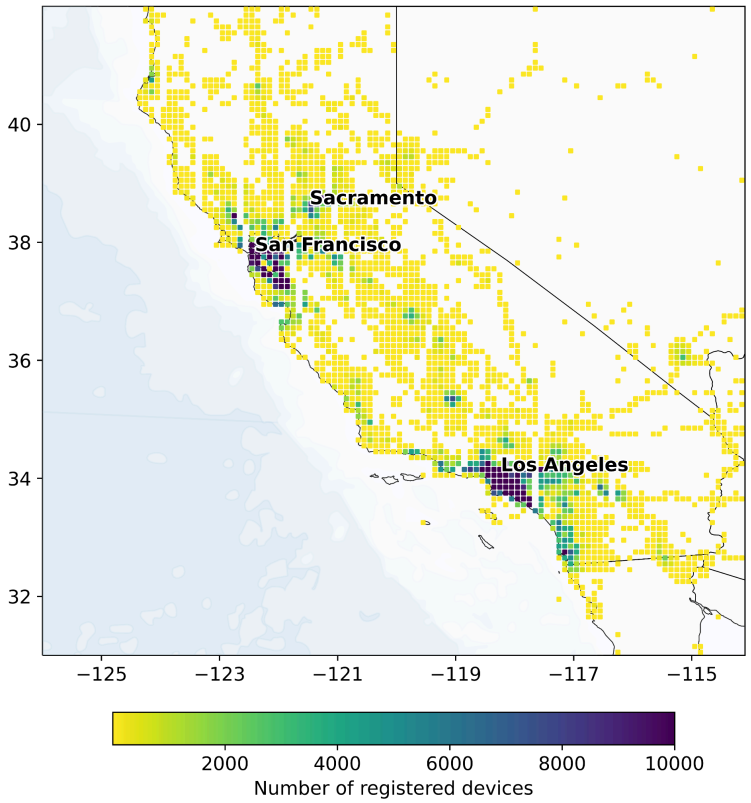

Figure 1: Map showing the distribution of active MyShake phones in California, about 2 million in total.

What is the Need for Cost-effective and Widespread SHM in California?

California's seismic landscape underscores the urgent need for effective SHM. The state's infrastructure, spanning residential, commercial, and public buildings, faces ongoing risks from earthquakes. Despite advancements in SHM technology, the cost of traditional sensor installations and maintenance restricts implementation to a few high-profile buildings.

Traditional SHM methods face significant challenges that hinder their widespread adoption. Despite advancements in technology, SHM is not widespread because it requires significant financial and technical resources for installation and maintenance, making it expensive to implement. Moreover, scaling these methods to cover thousands of buildings is impractical without innovative, cost-effective solutions. As evidence of this limitation, only about 340 structures in California are currently monitored for SHM according to CESMD databases (Hagos *et al.*, 2022; Patel *et al.*, 2023).

By utilizing MyShake's existing infrastructure and user base, this project aims to democratize SHM, making it accessible and scalable for a broad range of structures.

Principles of SHM and Smartphone Accelerometers

The natural frequency of a building reflects its dynamic response to external forces, such as earthquakes and wind. Changes in this frequency often indicate damage, degradation, or alterations in structural integrity. Modern smartphones, equipped with triaxial MEMS accelerometers, can sample at rates up to 50 Hz, which is sufficient to capture the dynamic behavior of most buildings that typically occurs below 10 Hz (Kumar et al., 2024 (under review)). These devices can record data comparable to traditional accelerometers under certain conditions (Patel *et al.*, 2023). While smartphones face limitations such as higher noise floors and shorter recording durations to conserve battery (typically 5 minutes), advanced data processing techniques, as demonstrated in recent studies (Patel *et al.*, 2023, Kumar et al., 2024, under review), can mitigate these challenges effectively.

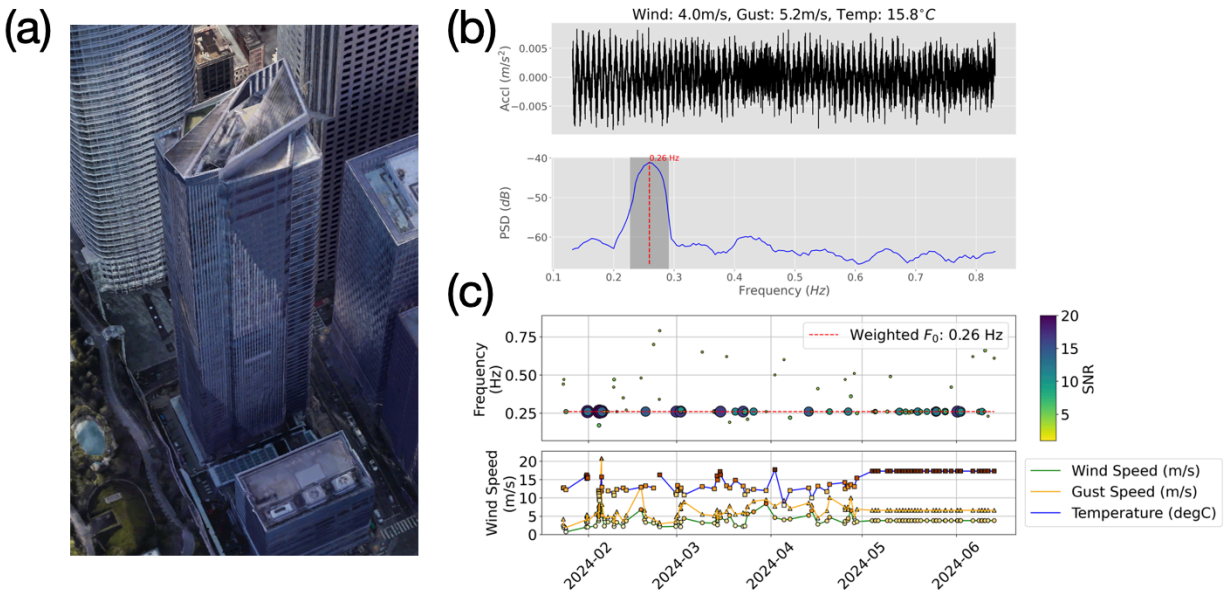

Figure 2: Example Natural Frequency Measurement in Ambient Vibration Conditions. (a) A 197-meter-tall reinforced concrete frame building located in the San Francisco Bay Area. (b) Natural frequency measurement obtained from a smartphone deployed on the 56th floor of the building, recorded along one of the building's principal axes. The upper panel displays the acceleration time series, while the lower panel shows the power spectral density (PSD), highlighting the natural frequency at 0.26 Hz. (c) Temporal variation of natural frequency and damping measurements of the building recorded over a six-month period, alongside environmental conditions including wind speed, gust speed, and temperature (Kumar et al., 2024, under review).

MyShake and its Potential for SHM

The MyShake application (https://myshake.berkeley.edu/), developed by the UC Berkeley Seismology Lab, is a citizen science seismology app. Most importantly, delivers earthquake early warning alerts from California's Earthquake Early Warning System (https://earthquake.ca.gov/) to citizens across the state. As the official state app for earthquake alerts, its development and operations are funded by the California Office of Emergency Services. In addition to the alerts, the app also transforms smartphones into portable seismometers by leveraging their built-in accelerometers. The app employs an auto-collection strategy to autonomously record three-axis accelerations during earthquakes and triggered events, and upload the collected waveform data to central servers for analysis. With 2 million active phones in California, the application has achieved significant penetration, making it a valuable tool for large-scale seismic monitoring and structural health assessment.

MyShake has demonstrated the ability to measure natural frequencies of buildings during both ambient conditions and seismic vibrations (Kong *et al.*, 2016, 2018; Patel *et al.*, 2023), showcasing its utility for comprehensive structural health monitoring. Measurements during ambient vibrations play a critical role in establishing a baseline natural frequency for buildings (Kumar et. al., 2024, in review). This baseline serves as a vital reference point for analyzing the health of a structure during seismic events, allowing for the identification of potential damage or structural changes following earthquakes or other events.

Proof of Concept for SHM using MyShake Application

Natural frequencies are closely related to a building's mass, stiffness, and damping, making them critical indicators of structural health. MyShake's capability to extract these frequencies from both ambient and seismic vibrations has been well demonstrated in previous studies. Kumar et al. (2024, in review) demonstrated that ambient vibration measurements using MyShake reliably captured natural frequencies in four buildings across the San Francisco Bay Area (See **Figure 2** for an example recording in one of the buildings), providing a robust baseline for structural health monitoring. Patel et al. (2023) further validated MyShake's effectiveness during seismic vibration conditions by showing high correlations between smartphone data and traditional sensors during earthquake simulations conducted on shake tables and in real buildings (**Figure 3**). These findings highlight MyShake's potential as a versatile and powerful tool for monitoring building dynamics under various conditions.

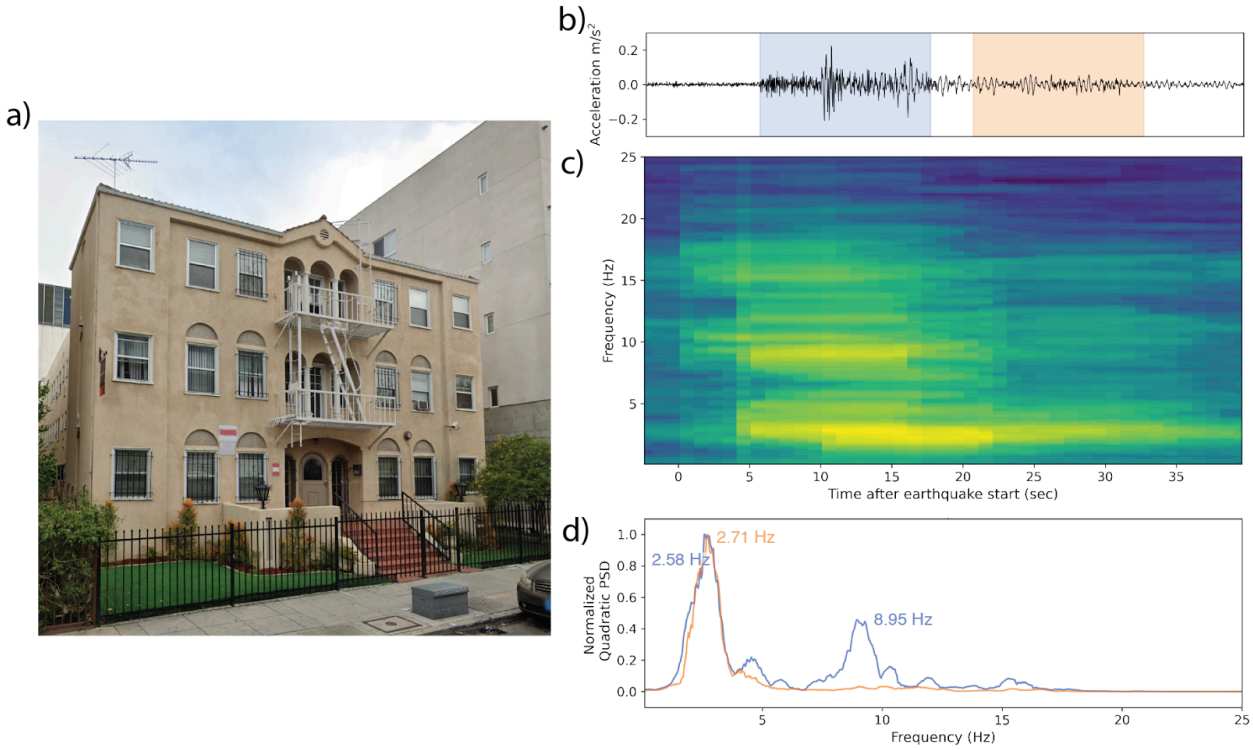

Figure 3: Example Natural Frequency Measurement in Seismic Vibration Conditions. (a) 3 story apartment building in southern California, which recorded a waveform of a Mw 4.3 earthquake 25 km away. (b) the waveform collected by the phone, overprinted with the 10 second windows whose PSDs are represented in part d. (c) The corresponding time-frequency spectrum computed using multitaper analysis. Spectrums are centered relative to their corresponding window in the accelerogram. The strongest peak throughout occurs at 2.5-2.7 Hz (0.37-0.4 sec). During the body of the earthquake, there is a second peak at 8.95 Hz (0.112 sec), which later subsides. (d) Normalized PSDs for two of the 10 sec windows identifying the dominant frequencies in each (Patel et al., 2023).

Work Plan

The work plan involves two major components: data processing and analysis, and shake table tests.

Part I: Data Processing and Analysis

1. **Data Acquisition**: Access MyShake waveform archives (past four years) and select the waveform records and perform data quality checks. The goal is to select the waveform records that have building characteristics.
2. **Data Processing**: Map the waveform records with the building metadata (height, location, construction type) to contextualize observations. It also involves applying quality control (QC) methods to address noise and phone movement issues. Then we implement automated frequency measurement using multi-taper spectral analysis.
3. **Database Development**: We will build the natural frequency database for the buildings across California, based on the waveform data collected over the last 4 years. We will also develop a machine learning model (e.g., gradient boosting) for QC and automated data quality checks and archival in the database.

Part II: Shake Table Tests

1. The shake table tests aim to evaluate how various real-world scenarios affect the measurement of a building's natural frequencies. By simulating earthquake and ambient conditions, these tests will utilize MyShake smartphones to record vibrational data.
2. Conducted on the San Diego 6-DOF Shake Table with a 10-floor CFS-framed building (https://cfs10.ucsd.edu/), the tests scheduled for spring-summer 2025 will offer valuable insights into the natural frequencies' behavior under controlled dynamic conditions.
3. The post-test analysis will focus on evaluating the reliability and precision of the measurements, ensuring the MyShake system effectively captures critical data for structural health monitoring.

Potential Applications and Benefits

The MyShake system can provide critical benefits for structural health monitoring by addressing key challenges in the field. One of its primary advantages is the ability to detect early damage by identifying significant shifts in natural frequencies after an earthquake, enabling prompt assessments of structural integrity. In addition, it supports long-term monitoring by tracking frequency changes over time, helping to detect gradual structural degradation. The system also offers a cost-effective solution by eliminating the need for expensive installations associated with traditional SHM systems.

Project Timeline and Deliverables

Timeline

1. Months 1-3: Data acquisition and initial processing.
2. Months 4-6: Field deployments and shake table tests.
3. Months 7-9: Database development and algorithm optimization.
4. Months 10-12: Final analysis and reporting.

Deliverables

1. Comprehensive database of natural frequencies for buildings in California derived from the existing MyShake database consisting of 4 years of waveform data collection.
2. Analysis of MyShake data recorded during shake table tests including comparison of MyShake data with traditional co-located accelerometers and observations of natural frequency changes as 10-story building is progressively damaged.
3. Scalable methodology for MyShake-based SHM across California.

Budget

1. Post-doctoral Researcher: 1 year, $90,000
2. Computing: Cloud storage and analysis tools: $10,000.
3. Travel for shake table tests: $5,000

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Hagos, L., H. Haddadi, L. S. Schleicher, J. H. Steidl, L. Gee, and M. Dhar (2022). Update on the Center for Engineering Strong-Motion Data (CESMD).

Kong, Q., R. M. Allen, M. D. Kohler, T. H. Heaton, and J. Bunn (2018). Structural Health Monitoring of Buildings Using Smartphone Sensors, *Seismol. Res. Lett.* **89**, no. 2A, 594–602, doi: 10.1785/0220170111.

Kong, Q., R. M. Allen, L. Schreier, and Y.-W. Kwon (2016). MyShake: A smartphone seismic network for earthquake early warning and beyond, *Sci. Adv.* **2**, no. 2, e1501055, doi: 10.1126/sciadv.1501055.

Patel, S. C., and R. M. Allen (2022). The MyShake App: User Experience of Early Warning Delivery and Earthquake Shaking, *Seismol. Res. Lett.* **93**, no. 6, 3324–3336, doi: 10.1785/0220220062.

Patel, S. C., S. Günay, S. Marcou, Y. Gou, U. Kumar, and R. M. Allen (2023). Toward Structural Health Monitoring with the MyShake Smartphone Network, 21, *Sensors* **23**, no. 21, 8668, doi: 10.3390/s23218668.

ALFRED E. ALQUIST
SEISMIC SAFETY COMMISSION MEETING

Memorandum

To: Seismic Safety Commissioners

From: Annde Ewertsen, Executive Director

Date: January 9, 2025

Subject: SSC Annual Reporting

Recommendation:

Staff recommends Commissioners review the background information, be prepared to provide comments/questions on the presentation and provide further directions by voting on Item 9.

Background:

Executive Director Annde Ewertsen and Administrative Processes Manager Tanya Black will discuss the Commission's annual reporting requirements for two reports: SSC Annual Report and the Office of the Attorney General (AG) Report.

The Annual Report is provided to Commissioners, stakeholders, and other interested entities and provides updates on all the SSC's 2024 activities. It is submitted to the Legislature and published on the SSC website.

The AG Report documents the activities funded by the California Research and Assistance Fund (CRAF). The CRAF, which was gifted to the SSC in 2007, funds research and projects related to earthquake risk reduction and requires the submittal of an annual report. The report details the activities and programs conducted with the funds during the year and includes a financial summary.

2024

Annual Report

Alfred E. Alquist Seismic Safety Commission (SSC)

Improving the seismic safety and resiliency of California communities by providing resources and guidance, facilitating research, and fostering collaboration in earthquake preparedness, mitigation, and recovery.

(916) 263-5506
3650 Schriever Ave
Mather, CA 95655
https://ssc.ca.gov/

December 31, 2024

Table of Contents

Introduction

The Alfred E. Alquist Seismic Safety Commission (SSC) is pleased to present its 2024 annual report as required by Government Code §8589.75. The commission shall report annually to the Governor and Legislature on its findings, progress, and recommendations related to activities of the commission and the state toward higher levels of seismic safety and any other seismic safety issues. This report provides a brief overview of the SSC projects in 2024. Once projects are completed, all reports or studies are posted on the SSC "publications" website at https://ssc.ca.gov/forms_pubs/.

The SSC is an important seismic safety resource for the State of California dedicated to reducing earthquake risk for the people of California since 1975. The SSC improves the seismic safety and resiliency of California communities by providing resources and guidance, facilitating research, and fostering collaboration in earthquake preparedness, mitigation, and recovery. The SSC strives to ensure a coordinated framework for establishing earthquake safety policies and programs in California.

Sincerely,

Annde Ewertsen

Annde Ewertsen, Executive Director

SSC Vision

A California that is prepared for, safe from, and resilient to seismic hazards.

SSC Staff

Annde Ewertsen, Executive Director
Nicole Mendoza, Program Manager
Tanya Black, Administrative Processes Manager
Jia Wang-Connelly, Senior Structural Engineer
Don Duncan, Program Analyst
Harold Selby, Program Analyst

SSC Commissioners, as of December 31, 2024

Honorable David Rabbitt	Chair, Local Government
Honorable Debra Garnes	Vice Chair, Local Government
Stoyan Bumbalov	CA Building Standards Commission
Alternate: Irina Brauzman	
Ida A. Clair	CA Division of State Architect
Alternate: Diane Gould	
Alegría De La Cruz	Social Services
Joone Kim-Lopez	Public Utility
Kevin McGowan	Emergency Services
Dr. H. Kit Miyamoto	Structural Engineer
Honorable Anthony Portantino	CA State Senate
Honorable Freddie Rodriguez	State Assembly
Alternate: Stephanie Nguyen	
Honorable Cindy Silva	Local Government
Nancy Ward	CA Governor's Office of Emergency Services
Alternate: Lori Nezhura	
Vincent Wells	Fire Protection
Vacant	Planning
Vacant	Insurance

Seismic Safety Commission Background

The SSC was established in 1975 to advise the Governor, Legislature, state and local agencies, and the public about strategies to reduce earthquake risk. In 2020, the SSC became a unit within the Office of Emergency Services (Cal OES) (Government Code §8589.71, et seq.).

In coordination with Cal OES, SSC offers a broad perspective of the overall seismic risk to the state, sets consistent policies and goals without regard to political agendas, and makes independent findings and recommendations without agency bias or repercussions.

The SSC investigates earthquake-related issues and evaluates and recommends to the Governor and Legislature policies and programs needed to reduce earthquake risk.

To ensure a coordinated framework for establishing earthquake safety policies and programs in California, the SSC uses the expertise of its members, experienced in earthquake-related fields, to review, evaluate, and translate scientific information and make recommendations to guide and influence earthquake safety policies.

The SSC assists in the state's mitigation efforts through collaboration with Cal OES and stakeholders. The SSC responds after earthquakes to gather information and recommends policy changes based on lessons learned.

The SSC is composed of 15 Commissioners: 10 appointed by the Governor, with expertise in earthquake or disaster-related fields or local government; 1 legislative member each from the California State Senate and the California State Assembly; and 3 Commissioners representing the Governor's Office of Emergency Services, the Division of State Architect, and the Building Standards Commission. The SSC is supported by six staff members.

Financial Summary

The following provides background information on the SSC's various funding sources.

Insurance Fund

California Insurance Code (CIC) section 12975.9 established the Seismic Safety Account as a special account within the Insurance Fund to, upon appropriation by the Legislature, fund SSC and the California Department of Insurance (CDI). The Seismic Safety assessment is imposed on each person who owns real property, commercial or residential, covered by a property insurance policy. CDI calculates the assessment annually every August 1 for all commercial and residential earned property exposures reported during the previous calendar year. Pursuant to CIC section 12975.9(b), the annual assessment shall be based upon the number of earned property exposures from both commercial and residential insurance policies, the amount required for the support of the SSC, the actual collection and administrative costs of CDI, and the maintenance of an adequate reserve, but shall not exceed fifteen cents ($0.15) per earned property exposure.

General Fund

As part of the state's broader preparedness efforts, the SSC was reorganized under Cal OES as set forth in Government Code Section 8589.71. The Budget Act of 2021-22 allocated General Fund to the SSC to support the reorganization. The reorganization has increased the coordination efforts between SSC and Cal OES, along with other components of the state's multi-hazard strategy, earthquake preparedness, and broader distribution of seismic safety policies and recommendations.

California Research and Assistance Fund

In August of 2007, the SSC was awarded a one-time allocation of funds through a Gift Agreement from the California Research and Assistance Fund (CRAF). The CRAF funds SSC research and education projects. As the CRAF Gift Agreement outlines, the SSC is entitled to collect up to 10 percent of overhead expenses for contracts awarded through the fund.

The fund's recipients develop products for the SSC and have an overhead limit of 25 percent.

This fund is currently active.

Contract with the California Public Utilities Commission (CPUC)

The SSC contracts with the CPUC as an Independent Peer Review Panel (IPRP) member and receives reimbursement for staff time. IPRP is tasked with providing expertise to the CPUC while also assuring the public that Diablo Canyon Power Plant (DCPP) seismic studies are being performed appropriately. Members of the IPRP include representatives from CPUC, California Energy Commission, California Coastal Commission (CCC), Cal OES, California Geological Survey (CGS), SSC, and County of San Louis Obispo (SLO). IPRP activities are further discussed on pages 8-9.

SSC Operating Budget Fiscal Year 2023-2024

Insurance Fund—Seismic Safety Account	$1,408,000
General Fund	$351,000
California Research and Assistance Fund	$700,000
California Public Utilities Commission	$15,000

Reporting Requirements

The following provides background information on the SSC's reporting requirements.

Annual Reporting Requirement of the Seismic Safety Commission

This annual report to the Governor and Legislature includes how the State has developed multiple seismic safety risk reduction and recovery programs. Improved descriptions of what entities have been doing to reduce seismic risk will lead to a better understanding and improved cooperation between State departments, local governments, universities, and private industry. The Legislature finds numerous agencies at various levels of government have substantial responsibilities in earthquake preparedness and seismic safety and has explicitly designated nine agencies to report to the SSC. The SSC reporting is not limited to those agencies. Reports are available on the SSC websites.

In 2024, the SSC received reports from:

- California State University
- University of California
- California Department of Transportation

and presentations from:

- University of California, Pacific Earthquake Engineering Research Center (PEER)
- California Community Colleges
- California Geological Survey
- California Earthquake Authority
- Structural Engineers Association of California
- Dr. Charles Scawthorn, UC Berkeley, PEER
- Southern California Earthquake Center
- City and County of San Francisco
- San Francisco Fire Department
- Dr. H. Kit Miyamoto, Structural Engineer, Global CEO, & Humanitarian Coordinator

As an annual reporting requirement, this project is ongoing.

AB 1770 – New Annual Reporting Requirement Beginning January 1, 2026, Regarding Activities Related to Fire Stations and Seismic Safety

In September 2024, Government Code section 8989.75 was amended to authorize the SSC, in coordination with the Department of Forestry and Fire Protection and Cal OES, to do the following:

- Develop a list of all fire stations in California and each station's status in meeting the standards of the Essential Services Buildings Seismic Safety Act of 1986 (Article 1, commencing with Section 16000) of Chapter 2 of Division 12.5 of the Health and Safety Code) to determine which stations are adequately designed and constructed to minimize fire hazards and to resist the forces generated by earthquakes, gravity, and winds.

- Collect data on earthquake early warning technology implementation in all fire stations in California and their interest in implementing that technology.

- Identify potential sources funding for fire station seismic mitigation activities.

In addition, the amendment requires the SSC to provide an annual report to the Assembly Committee on Emergency Management and the Senate Committee on Governmental Organization beginning January 1, 2026, describing the SSC's actions and conclusions on the activities listed above.

Consultant Projects

The following provides background information on the SSC's consultant projects.

Review of Project Delays for the San Francisco Public Utilities Water System Improvement Program (WSIP)

Pursuant to Water Code Section 73502, the Wholesale Regional Water System Security and Reliability Act required the City and County of San Francisco Public Utilities Commission (SFPUC) to adopt a specified program of capital improvement projects designed to restore and improve the Bay Area regional water system that delivers water from the Hetch Hetchy Reservoir in Yosemite.

With any notice of project deletions or delays for the program, the State Water Resources Control Board and the SSC shall each submit written comments to the City of San Francisco and the Joint Legislative Audit Committee no later than 120 days after the date of notice of that change about the significance of the changes with respect to public health and safety.

SSC reviewed the "Fiscal Year (FY) 2023-2024 Annual Report Water System Improvement Program San Francisco Public Utilities Commission" dated September 1, 2024. Even with the progress achieved between July 1, 2023, and June 30, 2024, the overall percent completion of the Regional Program remained 98.9% due to the extension of some projects and overall program schedules.

All seismic reliability projects with a primary or secondary Level of Service (LOS) goal are 100% complete. As of June 30, 2024, the overall WSIP is forecast to be complete in June 2032, consistent with the current baseline schedule approved as part of the March 2024 Revised WSIP. The overall approved WSIP completion date is driven by the approved final administrative closeout completion date for the Alameda Creek Recapture Project, June 30, 2032.

This project is in progress.

Independent Peer Review Panel for Diablo Canyon Nuclear Power Plant

Under Senate Bill 846 (SB 846) of 2022, the IPRP was tasked with reviewing the seismic assessment for the Diablo Canyon Power Plant (DCPP) in a consulting role for the Diablo Canyon Independent Safety Committee (DCISC) (see Public Utilities Code § 712.1(e)(1)). SSC is a member of the IPRP.

On February 1, 2024, Pacific Gas and Electric Company (PG&E) issued a report, "Diablo Canyon Updated Seismic Assessment", updating their previous seismic assessment (PG&E, 2015) for the DCPP. The initial findings were shared with the public, PG&E, and the DCISC on 8/27/24. PG&E is expected to submit a written response addressing IPRP's findings. The IPRP will subsequently submit a second report addressing PG&E's response along with the IPRP's updated conclusions and recommendations. The findings are mainly about the seismic source characterization.

The seismic study of DCPP required by SB 846 (2022) is ongoing.

This project is in progress.

SSC Projects

The following provides background information on the SSC's projects.

Earthquake and Fire Following Earthquake Resilience of Mid-Rise Cold-Form Steel (CFS) Buildings with the University of California of San Diego (UCSD)

The SSC and UCSD executed a contract in March 2022, to improve the understanding of mid-rise CFS-framed building systems under earthquake and post-earthquake fire conditions. Central to this effort is earthquake testing, post-earthquake repair, earthquake re-testing, and live-fire testing of a CFS 10-story building constructed on the UCSD large high-performance outdoor shake table. Through shaking, implementation of repair strategies, and live-fire testing, the project team will facilitate an understanding of the performance, recovery time, and resiliency of these types of buildings when subject to earthquake and live-fire scenarios.

In January 2024, an amendment to the contract was signed to utilize Unmanned Aerial Vehicles (UAVs) to capture detailed characteristics of testing events to add a unique set of otherwise unobtainable data for correlation with other measurement sources (e.g., terrestrial visuals and point-wise analog sensors.)

Construction of the test specimen on the shake table began in late September 2024. The project is behind schedule due to delays of another project on the shake table. The schedule was adjusted, the material was delivered onsite, and construction began in early October 2024. Construction will continue through early 2025, followed by three months of instrumentation. Earthquake testing will begin in late Spring 2025 and live fire tests in Summer 2025.

This project is in progress.

Ferndale Earthquake Sequence: Understanding Impediments to Local Recovery in Rio Dell, California

In December 2022, a series of earthquakes struck near Ferndale, CA, with a magnitude 6.4 earthquake on December 20, followed by a magnitude 5.4 earthquake on January 1, 2023, and numerous aftershocks throughout the year. The small city of Rio Dell in Humboldt County suffered significant damage, with estimated total costs of $40 million in the County with $32 million of that in Rio Dell. Following the disaster, Humboldt County declared a local emergency and opened a local assistance center. Federal disaster aid was limited due to the damage not meeting FEMA's thresholds. In May 2023, the SSC held a hearing in Rio Dell to review the earthquake's impacts, particularly highlighting challenges for small, rural communities in disaster recovery. A report that focuses on key findings and recommended actions to support vulnerable communities in future disasters was approved and published on the SSC website.

This project is complete.

Regional Scale Consequences Assessment of Earthquake Sequence Scenarios in California with the Regents of the University of California, University of California Berkeley/ Pacific Earthquake Engineering Research Center (PEER)

PEER and the SSC partnered to improve understanding of the consequences and burden on emergency response should an earthquake like the 2023 Türkiye event happens in urban centers of California. Working with the United States Geological Survey (USGS), California Geological Survey (CGS), Southern California Earthquake Center (SCEC), and other subject matter experts, the SSC will identify two earthquake sequences (one in Southern California and one in Northern California), which are scientifically plausible, albeit rare, but likely to be devastating. PEER will assess the consequences of the selected earthquake scenarios at regional and local levels.

(Continued)

PEER will provide two reports:

- Volume 1: *Lessons from Historical Earthquakes and Hazard Analysis*
- Volume 2: Regional risk simulation on tectonics/triggered events, like Türkiye, modeling locations in Northern and Southern California entitled, *Regional Scale Consequence Assessment of Earthquake Sequence Scenarios in California.* The report will include regional scale damage assessments for a scenario in northern California (M7.21 Hayward/M7.23 Calaveras) and in southern California (M7.25 Newport-Inglewood/M7.05 Palos Verdes).

The reports have been delayed. Delivery will occur in 2025.

This project is in progress.

Paradigm Shift in Metric Evaluation Cost of an Earthquake and Recommendations on Creating Resilient Communities with Colorado State University/Interdependent Networked Community Resilience Modeling Environment (IN-CORE)

The SSC and Colorado State University have partnered to improve the understanding of the true cost of an earthquake and recommendations for creating resilient communities. Working with SSC, the IN-CORE project team will provide technical quantification for an earthquake equal to/equivalent to the intensity experienced by Rio Dell in the 2022 Ferndale earthquake sequence. IN-CORE qualification of metrics can provide a means to better understand the socio-economic disparities between communities and their ability to recover post-earthquake given resources and government aid. The towns of East Richmond Heights and Monte Sereno will be compared to Rio Dell, using similar damage in those locations as the damage that occurred 2022 Ferndale earthquake sequence. The IN-CORE project is ongoing. Delivery of the report will occur in 2025.

This project is in progress.

Quake Heroes Expos

The SSC signed a contract with the University of Southern California (USC) in June 2024 to provide a series of events featuring their Quake Heroes documentary film, which discusses the 1994 Northridge earthquake. The goal is to inspire preparedness activities of people across California. These events will include large multi-component Quake Heroes Expos with partner booths, displays, earthquake simulators, and a screening of the Quake Heroes film. SSC staff anticipate ten (10) events in primarily socially vulnerable communities throughout California. This contract also includes dubbing the film into Spanish and Chinese. SSC staff is working with USC on an events schedule and expects the expos to be completed by May 30, 2025.

This project is in progress.

Fire Station Seismic Vulnerability Project

The SSC approved the Fire Station Seismic Vulnerability Project, seeking to understand the structural and non-structural seismic vulnerability of the fire stations Statewide through the completion of a voluntary survey.

Objectives of the project include:

- Developing an inventory of fire stations and their status as it relates to the 1986 Essential Services Act
- Understanding of the potential structural vulnerabilities to help mitigation strategies and to learn about potential funding sources and barriers to funding
- Assessing risk through HAZUS DATA inputs
- Providing data to fire stations to aid in applying for Hazard Mitigation Assistance Grant funding

The survey was sent to fire stations throughout California, and SSC staff are in the data collection and research phase.

This project is in progress.

Earthquake and Climate Change Workshop

At the April 2024 meeting, the SSC approved a collaborative effort between SSC, USGS, CGS, and other partners to organize an Earthquake and Climate Change Workshop. The workshop intends to facilitate knowledge exchange among the earthquake and climate change community and explore collaborative opportunities to improve our communities' multi-hazard mitigation and resilience. SSC and stakeholders meet monthly to plan and discuss workshop topics and potential timelines. SSC staff anticipate the workshop will be held in March 2025.

This project is in progress.

Mobile Home Building Code Project

SSC staff submitted a Federal Emergency Management Agency (FEMA) Building Resilient Infrastructure and Communities (BRIC) 2023 Building Code Plus Up grant application to review current California Code of Regulations (CCR) as it relates to the tie-down, earthquake-resistant bracing systems and foundation systems for manufactured housing units. It will also review performance of these home types in recent earthquakes (e.g., Anchorage (2018), Ridgecrest (2019), and South Napa (2014).) In addition, modeling and testing of systems in a lab environment will be conducted. The work will be performed by a yet-to-be determined contractor, with input from a project steering committee assembled by SSC staff. The project steering committee will lead the code adoption process after the code provisions are drafted.

Any recommended code updates, informed by the lab tests and analysis, if adopted Statewide will quantify and reasonably improve the level of protection to manufactured houses.

The BRIC Building Code Plus Up grant was approved by FEMA in late November 2024.

This project is in progress.

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Cal OES
GOVERNOR'S OFFICE
OF EMERGENCY SERVICES

TBD, 2025

James Toma
Supervising Deputy Attorney General
Office of Attorney General
300 S. Spring Street, Suite 1702
Los Angeles, CA 90013

Subject: 2024 Alfred E. Alquist Seismic Safety Commission Status Report on California Research and Assistance Funds

Dear Mr. Toma:

Please find attached the Seismic Safety Commission's (SSC) annual status memo regarding projects funded with support from the California Research and Assistance Fund (CRAF). The fund balance as of December 31, 2024, is $TBD.

Although there were no completed projects in 2024, the following list contains the current SSC contracts funded by the CRAF:

- University of California San Diego (UCSD)-–This contract funds the Shake table test of the 10-story cold-form steel framed building that demonstrates earthquake shaking and fire-following earthquake simulation and captures detailed characteristics of the testing through the utilization of Unmanned Aerial Vehicles (UAVs). The contract term expires on December 31, 2025.
- Colorado State University (IN-CORE)—This contract funds research that will improve our understanding of the true cost of an earthquake and recommendations on creating resilient communities. It was extended through March 31, 2025.
- University of California, Berkeley's Pacific Earthquake Engineering Research (PEER) Center—This contract funds research that assesses the

consequences of the selected earthquake sequence scenarios at regional and local levels. It was extended through February 28, 2025.

The SSC initiated the following contract in 2024:

- Statewide California Earthquake Center (SCEC)—This contract funds the Northridge Anniversary Program campaign to increase awareness about earthquake hazards, featuring the film, "Quake Heroes". This contract expires on May 30, 2025.

The SSC will continue to deliver research project materials to you as they are completed. Should you have any questions regarding the SSC's research projects, please call our office at 916-263-5506.

Sincerely,

TBD, Executive Director
Seismic Safety Commission

cc: Lisa Mangat, Chief Deputy Director of Policy & Administration, California Governor's Office of Emergency Services
David Rabbitt, Chair, Seismic Safety Commission
Tanya Black, Administrative Processes Manager, Seismic Safety Commission

2024 Financial Summary Report to Attorney General's Office

Project Title: Earthquake and Fire-Following Earthquake Resiliency of Mid-Rise Cold-Formed Steel Buildings

Cost to Research Fund for 2024: **$32,136.32**

Project Description

The University of California, San Diego (UCSD), and California Office of Emergency Services (Cal OES)/Seismic Safety Commission (SSC) agreed to partner to improve the understanding of Cold-Formed Steel framed (CFS) mid-rise building systems under earthquake and post-earthquake fire conditions. Central to this effort is earthquake testing, post-earthquake repair, earthquake retesting, and finally live-fire testing of a CFS 10-story building constructed on the University's large high-performance outdoor shake table, which has been upgraded to 6 degrees of freedom.

Through the shaking, implementation of repair strategies, and fire test, the project team will facilitate an understanding of the performance, recovery time, and hence the resiliency of these types of buildings when subject to earthquake and live-fire scenarios. The importance of documenting this understanding succinctly to the public and decision-makers will support broad awareness of the issues faced by this critical infrastructure. The project is led by UCSD, including companion research conducted by Cal Poly San Luis Obispo, Cold Form Steel – National Hazard Engineering Research Infrastructure (CFS-NHERI) research team, Johns Hopkins University, and University of Massachusetts-Amherst.

This project will utilize Unmanned Aerial Vehicles (UAVs) to capture detailed characteristics of testing events as outlined above to add a unique set of otherwise unobtainable data for correlation with other measurement sources (e.g., terrestrial visuals and point-wise analog sensors). All usage of UAVs will be done in compliance with FAA rules and regulations.

The contract completion date is **December 31, 2025**.

Contract Value:	**$497,500.00**
Invoiced Services for 2023:	**-$43,823.91**
Invoiced Services for 2024:	**-$32,136.32**
Remaining Budget:	**$421,539.77**

Project Title: Regional Scale Consequences Assessment of Earthquake Sequence Scenarios in California with the Regents of the University of California, University of California Berkeley/ Pacific Earthquake Engineering Research Center (PEER)

Cost to Research Fund for 2024: **$16,726.25**

Project Description

PEER and Cal OES/SSC agreed to partner to improve our understanding of the consequences and burden on emergency response should an earthquake like the 2023 Türkiye event happen in urban centers of California. Specifically, working with the United States Geological Survey (USGS), California Geological Survey (CGS), Southern California Earthquake Center (SCEC), and other Subject Matter Experts, the SSC will identify two earthquake sequences (one in Southern California and one in Northern California), which would be scientifically plausible, albeit rare, but likely to be devastating. PEER will assess the consequences of the selected earthquake sequence scenarios at regional and local levels.

The contract was extended to date as of **February 28, 2025**.

Contract Value: **$76,286.00**

Invoiced Services for 2024: **-$16,726.25**
Remaining Budget: **$59,559.75**

Project Title: Paradigm Shift in Metric Evaluation Cost of an Earthquake and Recommendations on Creating Resilient Communities with Colorado State University/Interdependent Networked Community Resilience Modeling Environment (IN-CORE)

Cost to Research Fund for 2024: **$28,295.03**

Project Description

Colorado State University (CSU) and Cal OES/SSC agreed to partner to improve our understanding of the true cost of an earthquake and recommendations on creating resilient communities. Specifically, working with SSC, the CSU project team will model the City of Rio Dell (population 3,356), East Richmond Heights (3,473), and the community of Monte Sereno (3,479). The project team will provide technical quantification for an earthquake equal to/equivalent to the intensity experienced by Rio Dell in the 2022 Ferndale earthquake for both communities. IN-CORE quantification of metrics can provide a means to better understand the socio-economic disparities between communities embedded in current federal regulations. In this case, how a less-affluent rural community (Rio Dell, CA) begins to help its citizens in rebuild. A resilient community is closely linked with climate equity and environmental justice (EJ) which is enshrined in California Code GOV § 65040.12 as, "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies."

The overall goal of the SSC partnership with CSU is to improve our understanding of the true cost of an earthquake and how the recovery of affluent communities compares to communities with limited resources.

The contract has been extended to date as of **March 31, 2025**.

Contract Value: **$98,750.00**

Invoiced Services for 2024: **-$28,295.03**
Remaining Budget: **$71,917.46**

Project Title: Quake Heroes Expos, University of Southern California

Cost to Research Fund for 2024: N/A

Project Description

The University of Southern California (USC) and Cal OES/SSC, agreed to partner to provide a series of events featuring the Quake Heroes documentary film, as a major component of the overall Northridge Earthquake 30th Anniversary Educational Campaign being planned by USC, with the goal of inspiring preparedness activities across California. These events will include large multi-component Quake Heroes "Expos" (expositions with partner booths, displays, and earthquake simulators), and smaller events. Campaign activities supported by other sources will include in-person or online presentations and webinars, a social media campaign involving many partners, and coordinated media coverage.

USC will also translate the film into Spanish and Chinese and implement evaluation and reporting activities to measure the impact and improve the effectiveness of the proposed tasks and other campaign activities. Activities will be promoted via USC's various including SCEC.org, EarthquakeCountry.org, and ShakeOut.org (the Statewide California Earthquake Center, Earthquake Country Alliance, and ShakeOut are also administered by USC), as well as the QuakeHeroes.org website.

The contract completion date is **May 30, 2025**.

Contract Value:	**$99,000.00**
Invoiced Services for 2024:	**$0**
Remaining Budget:	**$99,000.00**

As of **December 31, 2024**, the remaining balance in the SSC's research fund is $TBD.

ALFRED E. ALQUIST
SEISMIC SAFETY COMMISSION MEETING

Memorandum

To: Seismic Safety Commissioners

From: Annde Ewertsen, Executive Director

Date: January 9, 2025

Subject: Sponsorship of 19th World Conference on Seismic Isolation, Energy Dissipation, and Active Vibration Control of Structures (19WCSI), Berkeley

Recommendation:

Staff recommends Commissioners review the background information, be prepared to provide comments/questions on the presentation and provide further direction by voting on Item 10.

Background:

SSC Executive Director Annde Ewertsen will request approval for SSC's sponsorship of the 19th World Conference on Seismic Isolation, Energy Dissipation and Active Vibration Control of Structures (19 WCSI) in Berkeley, California, September 15-19, 2025.

The conference is co-organized by the Pacific Earthquake Engineering Research Center (PEER) and the Anti-Seismic Systems International Society, Inc. (ASSISi). No monetary support is being requested, rather the organization requests the SSC sponsor the event allowing them to utilize the SSC logo on their website, promoting the webinar information on our site and at Commission meetings, and conference participation/attendance.

ALFRED E. ALQUIST
SEISMIC SAFETY COMMISSION MEETING

Memorandum

To: Seismic Safety Commissioners

From: Annde Ewertsen, Executive Director

Date: January 9, 2025

Subject: International Code Council Building Safety Month 2025 Proclamation

Recommendation:

Staff recommends Commissioners review the background information, be prepared to provide comments/questions on the presentation and provide further directions by voting on Item 11.

Background:

The International Code Council is a nonprofit that brings together experts in the built environment to create and implement the highest-quality codes to protect the public in the buildings where they live, learn, work, and play. Building Safety Month is an international campaign that takes place in May to raise awareness about building safety. This campaign reinforces the need for the adoption of modern, regularly updated building codes, and helps individuals, families, and businesses understand what it takes to create safe and sustainable structures.

SSC's Executive Director Annde Ewertsen will request the Commission provide the executive director authority to sign proclamations in perpetuity beginning in 2025 for the International Code Council Building Safety Month.

ALFRED E. ALQUIST
SEISMIC SAFETY COMMISSION MEETING

Memorandum

To: Seismic Safety Commissioners

From: Annde Ewertsen, Executive Director

Date: January 9, 2025

Subject: California Geological Survey (CGS) Update

Recommendation:

Staff recommends Commissioners review the background information and be prepared to provide comments/questions on the presentation.

Background:

Jeremy Lancaster, State Geologist, will present an update on seismic-related programs, vision, and partnerships with Cal OES and SSC. Mr. Lancaster provided an overview of CGS programs to the commission last year.

ALFRED E. ALQUIST
SEISMIC SAFETY COMMISSION MEETING

Memorandum

To: Seismic Safety Commissioners

From: Annde Ewertsen, Executive Director

Date: January 9, 2025

Subject: SSC Project Updates

Recommendation:

Staff recommends Commissioners review the background information and be prepared to provide comments/questions on the presentation.

Background:

SSC Executive Director Annde Ewertsen will update Commissioners on the status of the following projects:

- **Ferndale and Türkiye**—A three-part project encompassing: (1) a report on the impediments to recovery for Rio Dell; (2) data on tectonics/triggered events, like Türkiye, with Pacific Earthquake Engineering Research (PEER), modeling locations in Northern and Southern California; and (3) recovery simulations provided by the Interdependent Networked-Community Resilience Modeling Environment (IN-CORE).
  - (1) "Ferndale Earthquake Sequence: Understanding Impediments to Local Recovery in Rio Dell, California" report has been approved and published on the SSC website.
  - (2) PEER data on tectonics/triggered events project:
    - Volume 1 draft: Lessons from Historical Earthquakes is being reviewed by SSC staff and will then be submitted to the Ad-Hoc Committee for review, followed by an internal Cal OES review.
    - Volume 2; Regional scale assessments (NorCal—M7.21 Hayward/M7.23 Calaveras; SoCal—M7.25 Newport-Inglewood/M7.05 Palos Verdes) is under development.
    - Both volumes of the report are delayed with delivery to the Commission expected in 2025.
  - (3) IN-CORE project: preliminary findings were provided in late November with the expectation of presenting full results to the commission at the April 2025 meeting.

- **CA Fire Station Seismic Vulnerabilities Survey and Risk Assessment Project**—This project includes a statewide survey of CA Fire Stations to determine seismic vulnerabilities to help inform mitigation strategies and learn about potential funding sources and related barriers. A risk assessment analysis was conducted utilizing HAZUS data inputs and the potential of incorporating social benefits in FEMA BCA. To date, 1,057 responses have been collected. Also, an initial run of HAZUS 6.1 Advanced Engineering Building Module (AEBM) has been conducted and reviewed in conjunction with the BCA Toolkit EQ Structural Model to develop an initial assessment and understanding using FEMA's current HAZUS database of all CA fire stations. The survey submissions will be used to conduct an additional risk assessment in the project's next phase. Research on potential funding sources for seismic mitigation activities and related barriers to access funding is being performed by SSC staff.
- **Shake Table Project**—Construction of the test specimen on the shake table was scheduled to start in late September but was delayed. The schedule was adjusted, material was delivered onsite, and construction began in early October. Construction will continue through early 2025, followed by three months of instrumentation. Earthquake testing should begin in late April-May 2025, followed by live fire tests in Summer 2025.
- **Mobile Home Building Code Project**—The BRIC Building Code Plus Up grant was approved by FEMA. Staff are working on an SOW for utilization in the Request for Proposal (RFP) procurement process.
- **Earthquakes and Climate Change Workshop**—SSC staff, in collaboration with the United States Geological Survey (USGS) and California Geological Survey (CGS) are organizing a workshop to facilitate knowledge exchange among earthquake and climate scientists/researchers to include exploring collaborative opportunities for the improvement of the multi-hazard resilience of our communities. The workshop is scheduled for March 4 and 5, 2025. SSC staff secured a contract with Grin Events to facilitate the webinar.
- **Fire Following Earthquake**—Reducing Post Earthquake Ignitions— In the October 2024 SSC meeting, Dr. Scawthorn received approval for a research project on the potential feasibility of reducing fire-following ignitions in earthquakes via improved gas seismic shutoff devices. SSC staff are working on an SOW for the inter-agency agreement.
- **SSC Website & Design Contract**—SSC staff are working to secure a contract to update the SSC website and creation of an interactive "100 Years of Seismic Safety" page/infographic. The proposal includes overall content review/update and technical assistance in transitioning to the Cal OES template. At the July 2024 SSC meeting, the Commission approved an Ad-Hoc Committee. We anticipate the contract to be awarded in early 2025.

ALFRED E. ALQUIST
SEISMIC SAFETY COMMISSION MEETING

Memorandum

To: Seismic Safety Commissioners

From: Annde Ewertsen, Executive Director

Date: January 9, 2025

Subject: CLOSED SESSION PURSUANT TO GOVERNMENT CODE § 11126(a)(1)

Recommendation:

Staff recommends Commissioners review the background information and be prepared to meet in Closed Session to Discuss and Take Possible Action on the Appointment of Acting Executive Director.

Background:

The Seismic Safety Commission (SSC) is in the process of searching for a new Executive Director. A closed session will be held for Commissioners to discuss and possibly appoint an Acting Executive Director. The Acting Executive Director will assume the duties of running SSC and managing the staff until a new director is confirmed.