



**Cal OES**  
GOVERNOR'S OFFICE  
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# **Seismic Safety Commission Meeting Materials**

**January 11, 2024**



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

January 11, 2024  
9:00am-1:00pm PST

**In Person Location:**

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

**Virtual Information:**

Join Zoom Meeting

<https://us02web.zoom.us/j/84272709806>

Webinar ID: 842 7270 9806

**Dial (Toll-free):**

833-928-4608

For more information please contact:

**Tanya Black 916-224-8819** or [Tanya.Black@CalOES.ca.gov](mailto:Tanya.Black@CalOES.ca.gov).



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<b>MEETING AGENDA</b>	<b>TIME</b>	<b>ACTION</b>
1. Chair Remarks	9:00am	Discussion
2. Call to Order and Roll Call	9:10am	Roll Call
3. Public Comment: Items on Agenda	9:20am	Discussion
4. Approval of Seismic Safety Commission October 12, 2023, Meeting Minutes	9:35am	Discussion & Action
5. Seismic Safety Commission Strategic Plan - <i>Annde Ewertsen, Executive Director, SSC</i>	9:45am	Discussion & Action
6. Mobile Home Project - <i>Annde Ewertsen, Executive Director, SSC</i> - <i>Jia Wang-Connelly, Senior Structural Engineer, SSC</i>	10:05am	Discussion & Action
7. 2023 Seismic Safety Commission Reports - <i>Annde Ewertsen, Executive Director, SSC</i> - <i>Tanya Black, Administrative Processes Manager, SSC</i>	10:25am	Discussion & Action
Break	10:45am	Break
8. Building Code and Other Updates - <i>Ryan Kersting, SE, F. SEAOC, Principal BUEHLER</i>	11:00am	Discussion
9. California Geological Survey Updates - <i>Jeremy Lancaster PG CEG State Geologist, Director, California Geological Survey</i>	11:30am	Discussion
10. Project Updates: a. <i>Ferndale &amp; Türkiye Report</i> b. <i>Fire Station Inventory</i> c. <i>Northridge Anniversary – Quake Heroes</i> d. <i>Shake Table</i>	11:55am	Discussion
11. Misc. Announcements	12:20pm	Discussion
12. Public Comment: Not on Agenda	12:45pm	Discussion
13. Adjourn	1:00pm	Adjourn

For more information please contact:

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**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 12 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 in accordance with 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](mailto:InfoSSC@caloes.ca.gov). If you are attending 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](mailto: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](mailto:Tanya.Black@CalOES.ca.gov).



**ALFRED E. ALQUIST**  
**SEISMIC SAFETY COMMISSION MEETING**  
 In-Person and Zoom Teleconference Meeting  
 October 12, 2023

**I. Opening:**

Cindy Silva, Chair commenced the meeting and welcomed attendees from Sacramento and those joining virtually.

**II. Chair Remarks:**

Chair Silva emphasized recent seismic events in Morocco and Afghanistan.

Commissioner Miyamoto provided a global seismic update and reported incident impacts on remote villages making humanitarian aid was challenging. Commissioner Miyamoto stressed the significance of mobilizing not just governmental or international funds, but also local resources to accelerate recovery.

**III. Call to Order:**

The meeting was called to order by Chair Silva. Roll call was conducted by Tanya Black and the following Commissioners and Representatives were present or virtual:

Commissioner	In-person	Virtual Attendance	Absent
Cindy Silva, Chair	X		
Representative Lori Nezhura for Nancy Ward	X		
Vincent Wells	X		
Debra Games	X		
Representative Sean Connelly for Assembly member Freddie Rodriguez, Vice Chair		X	
Representative Irina Brauzman for Building Standards		X	
Representative Diane Gould for Ida Clair		X	
Representative Sean Connelly for Assembly member Freddie Rodriguez, Vice Chair		X	
Alegria De La Cruz		X	



Joone Kim-Lopez		X	
Kevin McGowan		X	
Dr. H. Kit Miyamoto		X	
David Rabbitt		X	
Freddie Rodriguez			X
Anthony Portantino			X
Ida Clair			X
Nancy Ward			X

**IV. Public Comment:**

Chair Silva opened public comments for agenda items. There were no public comments.

**V. Approval of Seismic Safety Commission (SSC) Meeting Minutes for July 20, 2023, and August 31, 2023:**

A motion to approve by Representative Nezhura and seconded by Commissioner Rabbitt. A roll call vote was taken, and the motion to approve the July 20, 2023, Meeting Minutes passed unanimously.

Commissioner	Yes Vote	No Vote	Abstained
Cindy Silva, Chair	X		
Representative Sean Connelly for Assembly member Freddie Rodriguez, Vice Chair	X		
Debra Games	X		
Alegria De La Cruz	X		
Representative Lori Nezhura for Nancy Ward	X		
Joone Kim-Lopez	X		
Representative Irina Brauzman	X		
Kevin McGowan	X		
Dr. H. Kit Miyamoto	X		
David Rabbitt	X		
Vincent Wells	X		
	<b>Total Votes: 11</b>	<b>Total Votes:</b>	<b>Total Votes:</b>

A motion to approve by Commissioner Games and seconded by Commissioner Wells. A roll call vote was taken, and the motion to approve the August 31, 2023, Meeting Minutes passed unanimously.



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Commissioner	Yes Vote	No Vote	Abstained
Cindy Silva, Chair	X		
Representative Sean Connelly for Assembly member Freddie Rodriguez, Vice Chair	X		
Debra Garnes	X		
Alegria De La Cruz	X		
Representative Lori Nezhura for Nancy Ward	X		
Joone Kim-Lopez	X		
Representative Irina Brauzman	X		
Kevin McGowan	X		
Dr. H. Kit Miyamoto	X		
David Rabbitt	X		
Vincent Wells	X		
	<b>Total Votes: 11</b>	<b>Total Votes:</b>	<b>Total Votes:</b>

**VI. State Historic Building Safety Board Appointment:**

The Seismic Safety Commission (SSC) has a representative seat on the State Historic Building Safety Board (SHBSB). Representative Brauzman expressed willingness to assume this role, necessitating a Commission vote. A motion to approve by Commissioner Garnes and seconded by Representative Connelly. A roll call vote was taken, and the motion to appoint Representative Brauzman passed unanimously.

Commissioner	Yes Vote	No Vote	Abstained
Cindy Silva, Chair	X		
Representative Sean Connelly for Assembly member Freddie Rodriguez, Vice Chair	X		
Debra Garnes	X		
Alegria De La Cruz	X		
Representative Lori Nezhura for Nancy Ward	X		
Joone Kim-Lopez	X		
Representative Irina Brauzman	X		
Kevin McGowan	X		





Dr. H. Kit Miyamoto	X		
David Rabbitt	X		
Vincent Wells	X		
	<b>Total Votes: 11</b>	<b>Total Votes:</b>	<b>Total Votes:</b>

**VII. Presentation: Intersections: A Strategy for Increasing Seismic Infrastructure Resilience**

**Speaker: Kenneth W. Hudnut, Ph.D., Seismic Expert, Business Resiliency Department, Southern California Edison (SCE)**

Dr. Ken Hudnut from Southern California Edison (SCE) delivered a presentation concerning SCE's efforts in seismic resiliency. Dr Hudnut stressed the importance of disaster resilience planning, seismic mitigation, and risk reduction.

The presentation emphasized the vital role of collaboration between earthquake engineers and earth scientists in enhancing infrastructure resilience and highlighted the SCE Seismic Resiliency Pyramid. At the top of this pyramid, SCE has identified 1,266 critical assets including lattice towers and data centers.

**VIII. AB 100 Report from the California Public Utilities Commission (CPUC)**

**Speakers: James Cho, Program Manager, Security and Resilience and Danjel Bout, Director of Safety Policy Division, California Public Utilities Commission**

James Cho discussed the importance of CPUC's role in setting regulatory requirements for investor-owned utilities in California, spanning sectors like electric, gas, water, telecommunications, and rail. James Cho highlighted the CPUC's focus on seismic compliance, executed in coordination with both state and federal agencies. The CPUC's primary goal is to ensure safety and reliability across these sectors in California, emphasizing an all-hazards approach to safety and emergency management, ensuring these industries are prepared for potential disasters.





James Cho delved deeper into the CPUC's approach, emphasizing three main pillars: coordination, preparation, and mitigation. He highlighted the importance of aligning with regulatory partners at both state and federal levels.

In the realm of Communications, specifically Wireless and Wireline, recent decisions D.20-07-011 and D.21-02-029 mandate all California-based wireless and wireline providers to create and submit All-Hazards Emergency Response Plans and Communications Resiliency Plans. The Communications Resiliency Plan should follow six primary strategies:

1. Ensure a backup power supply for 72 hours to maintain essential communication equipment and minimum public service levels.
2. Construct and uphold redundant communication networks.
3. Strengthen communication networks to resist damage.
4. Utilize temporary facilities, like mobile cell sites or satellite backhaul, to reinstate service where infrastructure has been damaged or destroyed.
5. Create communication and coordination protocols with first responders, other utilities, CPUC, and the public.
6. Devise preparedness strategies for staff and guarantee adequate staffing levels.

CPUC, in collaboration with the State Water Resources Control Board (SWRCB), also oversees water quality and safety for 89 Investor-Owned Water Utilities in California.

#### **IX. AB 100: Seismic Safety and Earthquake Preparedness Activities Report from the California Energy Commission (CEC)**

***Speakers: Mike Turner, PG, CEG, QSD, Engineering Geologist, Siting, Transmission & Environmental Protection Division; Sean Anayah, Energy Research and Development Division (ERDD); and Brett Fooks, Acting Safety and Reliability Branch Manager, Step Division; and Peter Chen, Supervisor, Energy Research and Development Division (ERDD)***

The CEC's Chief Counsel's office releases an updated version of Warren-Alquist Act in response to the 1970s energy crisis annually. Today, the CEC aims for a 100% clean energy future for California and stands as the state's main energy planning policy agency, striving for an energy system that's clean, modern, affordable, and safe.



The CEC prioritizes earthquake preparedness and seismic safety through various means including funding energy innovation and offering grants, conducting detailed environmental assessments for thermal power plant licensing, reviewing seismic reports via the Diablo Canyon Nuclear Power Plant's Independent Peer Review Panel, and supplying expertise in petroleum, natural gas, and energy sectors to the Cal OES for emergency and major earthquake planning.

Sean Anayah discussed four seismic-focused projects:

1. "Potential Induced Seismicity from Carbon Dioxide Sequestration" (<https://www.energy.ca.gov/sites/default/2021-06/CEC-500-2017-028.pdf>)
2. "Pipeline Right-of-Way Monitoring and Notification System by GTI Energy" (<https://www.energy.ca.gov/sites/default/2021-05/CEC-500-2020-024.pdf>)
3. UC Berkeley's Open Seismic Risk Analysis (SRA) offers regulators and utilities a tool for analyzing seismic risks to gas infrastructure (<https://peer.berkeley.edu/opensra>)
4. UCLA's SRA tool which provides real-time seismic data for quantitative predictions and failure analysis of gas infrastructure affected by earthquakes (<https://www.risksciences.ucla.edu/nhr3/cec/home>)

Mike Turner discussed the Siting, Transmission, and Environmental Protection (STEP) Division. STEP ensures the safety and reliability of the electric system.

The CEC also offers expert assistance to Cal OES in emergency and catastrophic planning. CEC staff have contributed to the Bay Area Earthquake Plan Update and the Southern California Catastrophic Earthquake Plan.

The CEC's seismic safety and earthquake preparedness objectives are:

1. Investing in energy innovation, resilience, and reliability.
2. Ensuring both existing and upcoming power plants meet seismic safety standards.
3. Advancing the seismic safety of the Diablo Canyon Nuclear Power Plant.



4. Providing the California Office of Emergency Services with skilled and experienced experts.

**X. Presentation: Federal Emergency Management Agency (FEMA)  
Earthquake and Preparedness and Mitigation Update**

***Speaker: Anne Rosinski, CEG, Earthquake Program Manager, Mitigation Division, Region IX***

Anne Rosinski described projects with various partners. Highlights included success in Benefit Cost Analysis (BCA), participation in a multi-hazard inventory workshop spanning 3 days, and involvement in the Ferndale earthquake project. Additionally, the FEMA Earthquake Mitigation Planning Guide is now in draft form and open for comments.

Anne Rosinski expressed honor at being a part of the National Advisory Council (NAC) Seismic Panel that delve into specific challenges related to earthquake insurance after providing a broader context about earthquakes. They highlighted several challenges.

The National Advisory Council has provided recommendations to FEMA:

- NAC recommended that FEMA enhance resilience and insurability in the most vulnerable communities by:
  1. Assisting private homeowners in high-risk areas to build to higher standards.
  2. Engaging with the insurance and reinsurance industry to discuss unique underwriting standards for specific hazards and more resilient housing.
  3. Collaborating with state insurance commissioners and industry stakeholders to create educational programs. These programs would inform homeowners about resilient standards and options, ensuring the continued insurability of their properties.
- For technical assistance, the NAC has recommended that FEMA bolster the resilience of structures by encouraging and funding state, local, tribal, and territorial governments to:
  1. Conduct disaster scenario studies and share their findings
  2. Undertake building inventories and retrofit vulnerable structures, prioritizing those crucial for community resilience.



3. Seek ways to refine the Building Code Effectiveness Grading Schedule (BCEGS) and Building Code Adoption Tracking (BCAT) to optimize local building code enforcement.
- The NAC has also put forth the following seismic recommendations to enhance earthquake preparedness:
    1. Increasing funding allocation amounts to National Earthquake Hazards Reduction Program (NEHRP) beyond the Congressionally mandated minimum and provide equal mitigation funding for tribes.
    2. Updating BCA requirements to capture the unique losses and benefits of earthquakes and associated mitigation activities more accurately.
    3. Updating mitigation grant scoring criteria to capture the benefits of structural retrofits and other seismic mitigation activities more accurately.

Anne Rosinski concluded the presentation by highlighting the alignment between FEMA's earthquake program and the NAC's desired outcomes.

## **XI. Project Updates**

***Speaker: Annde Ewertsen, Executive Director, SSC***

Director Ewertsen provided the following project updates:

1. Strategic Plan: A draft has been completed and will be reviewed with the Ad-Hoc Committee with the tentative plan to present the plan to the full Commission at the January 2024 meeting.
2. Ferndale and Türkiye Report:
  - a. The first interview with Humboldt County officials is completed and all interviews are set to conclude by the end of October.
  - b. Partnering with United States Geological Survey (USGS), California Geological Survey (CGS), and Southern California Earthquake Center (SCEC) to select the most probable doublet-induced earthquake scenarios for both the San Francisco Bay and LA regions.
  - c. Third Uniform California Earthquake Rupture Forecast with an Epidemic Type Aftershock Sequence (URF3-ETAS), and SCEC's 3D simulator cyber shake, will be employed for the LA risk assessment.



- d. USGS geophysicists will undertake a 3-day ground motion simulation for the Bay Area.
  - e. Once hazard data becomes available, the Pacific Earthquake Engineering Research Center (PEER) team will commence the engineering analysis, focusing on building damages.
  - f. Interdependent Networked Community Resilience Modeling Environment (IN-CORE) Project:
    - i. Awaiting approval on scope from Colorado State University.
    - ii. Collaborating with Rio Dell to gather water infrastructure and economic data. This will examine impacts on water and transportation infrastructure.
    - iii. Considering another community alongside Crockett for comparison based on water infrastructure availability.
3. Fire Station Seismic Vulnerabilities Inventory Project:
    - a. Initial questionnaire being refined for clarity and alignment with hazards requirements.
    - b. After review with the Ad-hoc Committee, it will be shared with Cal OES Fire, Cal Fire, and Earthquake Early Warning (EEW) for feedback.
  4. Other Projects:
    - a. Awaiting further information to finalize the scope for the Northridge Anniversary Events for which Earthquake Country Alliance (ECA) sought approval.
    - b. For the unmanned aerial vehicle (UAV) contract with University of California San Diego (UCSD), deliverables will be added to the current agreement with UCSD Shake Table for the 10-story cold-formed steel project. The contract will also be extended as they are slightly behind schedule.

## **XII. Miscellaneous Announcements**

***Speakers: Tanya Black, Administrative Processes Manager and Annde Ewertsen, Executive Director, SSC***

Tanya Black presented a budget update. In September, several accounts were approved by Cal OES. The SSC General Fund for the fiscal year 2023/2024 received \$366,000, primarily for administrative costs. The Special





Deposit Fund (CRAF) has a yearly budget of \$700,000, with a current balance of approximately \$2,876,975.02.

The primary funding for the Insurance Fund is sourced from the California Department of Insurance (CDI).

For the current fiscal year, the Insurance Fund was approved for \$1,366,054. The rate for these assessments has been reduced from .15 cents to .13 cents per exposure for the fiscal year 22-23.

Lastly, there's an Insurance Fund reimbursement account with \$15,000 set up for the California Public Utilities Commission to reimburse the SSC for staff assessments on the Diablo Canyon Nuclear Power Plant.

In the report, Director Ewertsen covered three main topics: Year-In-Review, ShakeOut Events, and 2024 SSC meeting dates. Over the past year, several achievements were noted: updating old policies, updating the website, and correcting errors, translating the commercial property owner's guide into Spanish, drafting a new strategic plan, funding four projects, hiring two staff members, and relocating to the Cal OES campus. Additionally, the Commission staff engaged in various initiatives, such as implementation of damage proxy maps, a photo library, and mobile home projects. They also participated in panels, presentations, and conferences to enhance California's seismic safety.

Director Ewertsen also mentioned that the new SSC webpage on the Cal OES website is now live and is accessible under the Office of the Director's tab. Additionally, "The Great California ShakeOut" is scheduled for the week of October 11, 2023. The Seismic Hazards Branch will be promoting ShakeOut events throughout California and showcasing the shake trailer. Finally, 2024 Seismic Safety Commission meeting dates have been finalized:

1. January 11th: General meeting with all necessary business updates, including a Structural Engineers Association of California (SEAOC) update.
2. April 11th: Election for Chair and Vice Chair positions and an education theme with AB100 reports for California State University (CSU) and University of California (UC)s.
3. July 18th: Focus on water.
4. October 10th: Focus on transportation.



### **XIII. Public Comment**

There were no public comments on items that were not on the agenda.

### **XIV. Adjourn**

Chair Silva adjourned the meeting at 11:35am.

To view the full meeting recording go to the following link:

<https://youtu.be/B38kXU5VFTo?si=FpMLIT-IPJ6uYZ7O>





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

# Memorandum

To: Seismic Safety Commissioners  
From: Annde Ewertsen, Executive Director  
Date: January 11, 2024  
Subject: Seismic Safety Commission Strategic Plan

## **Recommendation:**

Staff recommends Commissioners review the background information and be prepared to discuss and vote on the Strategic Plan.

## **Background:**

This draft plan was developed from a series of strategic planning efforts including a review of the current Cal OES strategic plan, Seismic Safety Commission's (SSC) Vision and Mission, and other entity's plans.

This draft updates SSC's current Vision and Mission statements. It also incorporates goals, which have not been updated for years.

The development process included initial review of all seismic safety statutes; the draft 2019 SSC Strategic Plan, which was not finalized because the SSC was going through a Mission Base Review Process conducted by the Department of Finance; the approved 2019 SSC Vision and Mission statements; review of other entity's strategic plans; and the recently approved Cal OES Vision, Mission, Values and Goal statements.

The initial draft was sent to the Ad-hoc SSC Strategic Plan Committee for review, which includes Chair Cindy Silva and Commissioner Debra Garnes. Next a meeting facilitated by the Cal OES Operational Performance Management (OPM) staff was held, which included SSC staff and the Ad-hoc Committee members, and the initial draft was reviewed, discussed, and refined in an inclusive process. The review also considered the latest Cal OES Strategic Plan components to ensure alignment with its developed Vision, Mission, and Goal statements. After review and approval by Cal OES, the proposed draft version of the plan is ready for Commission consideration.

# Seismic Safety Commission

## Vision, Mission, and Goals Draft

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### VISION

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

*We aspire to guide policies, educate, support research, and foster collaboration to protect lives, property, and the built environment from seismic hazards.*

### MISSION

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

### GOALS

- 1. Advise on policies, legislation, and funding that support seismic preparedness, mitigation, and recovery across the state.**
- 2. Educate communities and individuals on seismic hazards, preparedness, mitigation, and recovery measures.**
- 3. Promote research and innovation in earthquake engineering, building standards, and community planning to inform and reduce seismic risks.**
- 4. Foster inclusive collaboration among government agencies, academic institutions, industry stakeholders, tribal nations, non-governmental organizations, and diverse community members to reduce seismic risk for all.**



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

# Memorandum

To: Seismic Safety Commissioners  
From: Annde Ewertsen, Executive Director  
Date: January 11, 2024  
Subject: Mobile Home Project

## **Recommendation:**

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

## **Background:**

At 2:34 AM December 20th, 2022, a M6.4 earthquake struck offshore near Ferndale, California, causing damage to lifelines and structures in Humboldt County. Since the event, there have been many aftershocks including a M5.4 aftershock 15 km Southeast of Rio Dell, California on January 1, 2023, which caused additional damages to the building stock and displacement of the residents in Rio Dell. Widespread damage was observed throughout the community impacting infrastructure and residential structures especially mobile homes.

Building code regulations for manufactured homes differ from site-built homes, as new manufactured homes currently fall under the jurisdiction of the U.S. Department of Housing and Urban Development (HUD). Current regulations for mobile home installation in the state of California fall under the code adoption authority of the State of California Department of Housing and Community Development (HCD).

Since September 1994, the California Code of Regulations (CCR) has required that a wind tiedown system be installed on newly installed or relocated manufactured homes in California. Homes installed prior to September 1994 were not required to have an engineered tiedown system (ETS) at the time of installation (with the

exception of limited high-wind locations for which wind bracing has been regulated since 1974); these homes are not required to meet this requirement retroactively, except under two circumstances: (1) the home is relocated to a new lot; and (2) the home requires reinstallation due to damage caused by wind or seismic forces, and federal funds are available for the additional installation costs (Section 18613.4(e) of California Health and Safety Code (State of California, 2014)). Although relocation of mobile homes does sometime occur, it is uncommon.

California Code of Regulations Title 25, Chapter 2, Article 7.5 contains provisions for earthquake-resistant bracing systems (ERBS). These provisions do not require that ERBS's be installed but do provide minimum requirements for them where they are installed.

California Health and Safety Code (HSC) 18613.5 states "The Department of Housing and Community Development, with the review and advice of the Seismic Safety Commission, shall adopt such rules and regulations as are necessary to ensure that purchasers of all manufactured homes and mobile homes installed for human occupancy pursuant to Section 18613 are offered earthquake resistant bracing systems which meet generally accepted seismic safety standards for the reduction of damage and for the protection of the health and safety of the occupants."

There are three systems available in California to reduce the specific vulnerability of falling or sliding off piers/foundation of mobile homes/manufactured homes and each has either an identified deficiency or requires additional research to validate the protection it is manufactured to provide.

#### Manufactured Home-Earthquake Resistance Brace Systems (ERBS):

25 CCR § 1371 - Construction and Design Requirements.

(a) ERBS shall be designed and constructed to resist seismic forces determined in accordance with the provisions of Section 2312, Chapter 23, Uniform Building Code, 1982 Edition.

(b) ERBS shall be designed to limit downward vertical movement of a mobile home or manufactured home to a maximum of two (2) inches.

**Issue: 1982 Uniform Building Code (UBC) is outdated, and recent earthquakes also raised questions on the efficacy of the performance objective.**

#### Manufactured Home-Engineered Tiedown System:

CCR Title 25 § 1336.3 - Engineered Tiedown System

(a) An engineered tiedown system shall allow a Manufactured Home unit to resist wind loads of fifteen (15) pounds (psf) or the design wind load of the Manufactured Home unit, whichever is greater.

**Issue: The assumption that 15 psf design wind load will provide adequate**

**earthquake protection should be reevaluated given the current understanding of seismic hazard and risk.**

Manufactured Home-Foundation System: Cal. Code Regs. Tit. 25, § 1333 - Foundation Systems:

(a) The foundation system and the connection of a Manufactured Home unit to the foundation system shall be designed to withstand the vertical and lateral forces due to dead load, roof and floor live loads, wind, and seismic loads in accordance with the provisions of the California Residential Code and local soil conditions.

**Issue: CRC doesn't contain all the provisions necessary for the seismic design of foundation systems for manufactured home.**

**Conclusion:**

Staff recommend the SSC apply for a BRIC Building Code Plus Up grant for \$300K with a local match of 25%, which will be provided by SSC's in-kind staff time, to evaluate the current code provisions and their effectiveness to meet generally accepted seismic safety standards; develop and conduct a testing program; analyze the data; recommend code improvements; understand the benefit and cost of the code changes; and engage stakeholders and the public on the findings and changes to code/regulations, as appropriate. Staff will work closely with HCD on all aspects of the project.



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

# Memorandum

To: Seismic Safety Commissioners  
From: Annde Ewertsen, Executive Director  
Date: January 11, 2024  
Subject: 2023 Seismic Safety Commission Reports

## **Recommendation:**

Staff recommends Commissioners listen to presentations on the drafts of the 2023 SSC Annual Report and Attorney General (AG) Report and vote to authorize SSC staff to make any Commission edits and finalize both reports.

## **Background:**

AB 100 legislation established the SSC as a separate unit within Cal OES. The bill required the SSC to work with specific state departments and various public entities to submit an annual report to the Governor and the Legislature on findings, progress, and recommendations towards higher levels of seismic safety and other seismic safety issues.

## **2023 Draft Annual Report**

This report, which provides updates on all SSC's 2023 activities, is provided on a yearly basis to Commissioners for review and approval. After the report is approved, it is submitted to the Legislature and made available on the SSC website.

## **2023 Attorney General Report**

In 2007, the SSC was gifted \$6 million for research and projects related to earthquake risk reduction through the California Research and Assistance Fund (CRAF). This funding mechanism requires the SSC to submit an annual report to the Attorney General's (AG) office detailing activities/programs conducted with the funds during the year, and a financial summary. After the report is finalized, it will be made available on the SSC website.

# 2023

# Annual Report



**Cal OES**  
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## **Alfred E. Alquist Seismic Safety Commission (SSC)**

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*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.*

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(916) 263-5506

3650 Schriever Ave  
Mather, CA 95655

<https://ssc.ca.gov/>

December 31, 2023



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## Introduction

The Alfred E. Alquist Seismic Safety Commission (SSC) is pleased to present its 2023 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 2023. Once projects are completed, all reports or studies are posted on the SSC "publications" website at [https://ssc.ca.gov/forms\\_pubs/](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  
Tanya Black, Administrative Processes Manager  
Jia Wang-Connelly, Senior Structural Engineer  
Trinity Gleckler, Program Analyst  
Christopher Lozano, Program Analyst



## SSC Commissioners, as of December 31, 2023

Honorable Cindy Silva	Chair, Local Government
Honorable Freddie Rodriguez	Vice Chair, CA State Assembly
<i>Alternate: Stephanie Nguyen</i>	
Ida A. Clair	CA Division of State Architect
<i>Alternate: Diane Gould</i>	
Alegría De La Cruz	Social Services
Honorable Debra Garnes	Local Government
Joone Kim-Lopez	Public Utility
Kevin McGowan	Emergency Services
Dr. H. Kit Miyamoto	Structural Engineer
Honorable Anthony Portantino	CA State Senate
Honorable David Rabbitt	Local Government
Nancy Ward	CA Governor's Office of Emergency Services
<i>Alternate: Lori Nezhura</i>	
Vincent Wells	Fire Protection
Irina Brauzman, Representative	CA Building Standards Commission
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 6.0 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 the 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, in the form of a Gift Agreement, from the California Research and Assistance Fund (CRAF). The CRAF funds SSC research and education projects. As outlined in the CRAF Gift Agreement, the SSC is entitled to collect up to 10 percent of overhead expenses for contracts awarded through the fund. Recipients of these funds 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). Pursuant to Section 712 of the Public Utilities Code, the CPUC created an independent disaster council (members include: SSC, the Energy Commission, California Geological Survey of the Department of Conservation, California Coastal Commission, Cal OES, and County of San Luis Obispo) for the planning activities related to initial and subsequent assessments of the Diablo Canyon Power Plant (nuclear) site. These assessments include the investigation and interpretation of environmental factors such as seismic safety. IPRP activities are further discussed on pages 8-9.

## SSC Operating Budget Fiscal Year 2022-2023

Insurance Fund—Seismic Safety Account	\$1,349,999
General Fund	\$269,000
California Research and Assistance Fund	\$700,000
California Public Utilities Commission	\$15,000



## Projects

### Review of Project Delays for the San Francisco Public Utilities Water System Improvement Program

Pursuant to Water Code Section 73502, the Wholesale Regional Water System Security and Reliability Act, required the County and City 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, about the significance of the changes with respect to public health and safety, no later than 120 days after the date of notice of that change. SSC reviewed the "Fiscal Year (FY) 2022-2023 Annual Report Water System Improvement Program San Francisco Public Utilities Commission" dated September 1, 2023. It indicated the \$4.8 billion construction program is 98.9% complete. All projects with seismic reliability with either a primary or secondary Level of Service (LOS) goal are 100% complete.

As of July 30, 2023, the overall Water System Improvement Program (WSIP) is forecast to be completed on February 1, 2027.

### Independent Peer Review Panel for Diablo Canyon Nuclear Power Plant

The Independent Peer Review Panel (IPRP) was established by the California Public Utilities Commission (CPUC) in 2010. It was tasked with providing expertise to the CPUC while also assuring the public that Diablo Canyon Power Plant (DCPP) seismic studies were 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 Luis Obispo (SLO).

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)).





In February 2023, the DCISC approved its Fact-Finding Team (FFT) reports covering the last quarter of calendar year 2022 and their DCPD visits on January 31, 2023 and February 1, 2023. Several key issues were covered in the FFT reports including a seismic safety review report for DCPD. In accordance with Public Utilities Code § 712.1(e)(1) as part of its consulting role under SB 846, the IPRP submitted and published the comments to the DCISC for its consideration<sup>1</sup>.

The seismic study of DCPD required by SB 846 (2022) is ongoing. This project is in progress.

## **Annual Reporting Requirement of the Seismic Safety Commission**

The purpose of this reporting is to illustrate 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 that numerous agencies at various levels of government have substantial responsibilities in the fields of earthquake preparedness and seismic safety.

In 2023, the SSC received reports from:

- California Energy Commission
- California Public Utilities Commission
- California State Architect
- California Department of Water Resources
- California Department of Education
- California Department of General Services—Office of Public-School Construction

As an annual reporting requirement, this project is ongoing.

## **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, Cal OES, and UCSD entered into a contract on March 9, 2022, and agreed to partner to improve the understanding of mid-rise CFS-framed building systems under earthquake and post-earthquake fire conditions. Central to this

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<sup>1</sup> <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/electric-costs/diablo-canyon-independent-peer-review-panel-reports/20230505dcisc-irp-comments-on-february-report.pdf>



effort is the 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 the shaking, implementation of repair strategies, and fire test, 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.

The project is delayed because projects on the shake table scheduled before this project are behind schedule. The project is anticipated to begin in Summer 2024.



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**Cal OES**  
GOVERNOR'S OFFICE  
OF EMERGENCY SERVICES



February 1, 2024

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

Subject: 2023 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 completed with support from the California Research and Assistance Fund (CRAF). The fund balance as of October 13, 2023, is \$2,901,964.81.

Although there were no completed projects in 2023, the SSC did extend the contract with the University of California San Diego (UCSD) for the shake table test of the 10-story cold-form steel framed building that demonstrates earthquake shaking and fire-following earthquake simulation. The project has been delayed so funds have yet to be expended.

In addition to extending the contract with UCSD, during the past year, we have initiated three contracts with the following:

- Colorado State University (IN-CORE)—to improve our understanding of the true cost of an earthquake and recommendations on creating resilient communities.
  - University of California, Berkeley's Pacific Earthquake Engineering Research (PEER) Center—to assess the consequences of the selected earthquake sequence scenarios at regional and local levels.
-

- Statewide California Earthquake Center's (SCEC) Northridge Anniversary Program—to support a campaign to increase awareness about earthquake hazards, featuring the film, “Quake Heroes.”

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,

Annde Ewertsen, Executive Director  
Seismic Safety Commission

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



**Cal OES**  
GOVERNOR'S OFFICE  
OF EMERGENCY SERVICES



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

# Memorandum

To: Seismic Safety Commissioners  
From: Annde Ewertsen, Executive Director  
Date: January 11, 2024  
Subject: Building Code and Other Updates

## **Recommendation:**

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

## **Background:**

Ryan Kersting, S.E., Structural Engineers Association of California (SEAOC), Legislative Committee Co-Chair, will present information on the desire to improve the post-earthquake recovery time of buildings through development of better building codes, which has received significant attention in the last 5 years (or more) to support increased community resilience. Many stakeholders and perspectives have been part of efforts underway through industry groups like SEAOC, Earthquake Engineering Research Institute (EERI), Applied Technology Council (ATC), California Building Officials (CALBO), and International Code Council (ICC) as well as federal government agencies like Federal Emergency Management Agency (FEMA), National Institute Standard and Technology (NIST), National Institute of Building Sciences (NIBS), and National Earthquake Hazard Reduction Program (NEHRP).

Ryan Kersting recently presented at the July 20, 2023 SSC meeting, but his presentation was cut short due to time constraints. This presentation will allow him to provide additional information and an overview of current efforts to quantify post-earthquake recovery time expected from current code provisions and develop building code provisions that target functional recovery time in addition to basic safety to improve the post-earthquake recovery of buildings. Ryan Kersting will also highlight how these efforts support and promote other next steps that are critical to improving post-earthquake recovery of California's communities:

- Amending model building codes for California's needs
- Adopting retrofit ordinances for vulnerable existing buildings
- Investigating solutions to improve performance of lifeline infrastructure

- Developing financial support programs
- Implementing thoughtful community planning policies
- Improving awareness and preparedness of the general public, etc.





**Cal OES**  
GOVERNOR'S OFFICE  
OF EMERGENCY SERVICES



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

# Memorandum

To: Seismic Safety Commissioners  
From: Annde Ewertsen, Executive Director  
Date: January 11, 2024  
Subject: California Geological Survey Updates

## **Recommendation:**

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

## **Background:**

The new State Geologist, Jeremy Lancaster, will present an overview of the California Geological Survey's (CGS) seismic related programs, vision and partnerships with Cal OES and the Seismic Safety Commission (SSC).

CGS was one of the first organizations to come before the SSC and underscore the value of their seismic programs to the public in September 2021 for the AB 100 reporting requirements.