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ALFRED E. ALQUIST
SEISMIC SAFETY COMMISSION MEETING

Zoom Teleconference and In-Person Meeting
July 20, 2023

I. Call to Order

The meeting was called to order by Cindy Silva, Chair, at 10:07am. Salina Valencia, Director of Legislation & Communications, conducted the roll call.

Present:

Cindy Silva, Chair
Representative Sean Connelly for Freddie Rodriguez, Vice Chair
Anthony Portantino
Representative Diane Gould for Ida Clair (Arrived at 10:10am)
Alegria De La Cruz
Debra Ganes (Arrived at 10:21am)
Representative Lori Nezhura for Nancy Ward
Joone Kim-Lopez
Kevin McGowan (Departed at 10:47am)
Dr. H. Kit Miyamoto
David Rabbitt
Vincent Wells

Absent:

Ida Clair
Assemblymember Freddie Rodriguez
Representative Irina Brauzman for Mia Marvelli
Nancy Ward
Vincent Wells

II. Chair's Remarks



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III. Approval of Seismic Safety Commission May 24th, 2023, Meeting Minutes Discussion:

The Seismic Safety Commission (SSC) discussed the meeting minutes of May 24th, 2023. Motion to approve by Commissioner Kim-Lopez, seconded by Commissioner Miyamoto. Motion passed unanimously.

IV. Multi-Hazard Building Performance Assessment Using Unmanned Aerial Vehicle (UAV)-Based Technologies Proposal: Advancing Tools for Use in the Field

Speaker – Tara Hutchinson, P.E., Ph.D., Professor, Department of Structural Engineering, University of California, San Diego

Professor Tara Hutchinson spoke about an add-on UAV project to the cold form steel shake test occurring next August (2024). Several important portions of the Shake tests are funded by the SSC.

The University of California, San Diego (UCSD) Data Science Engineering's (DSE) proposal to the SSC for consideration is an expansion of next year's the cold form steel effort with 2 specific tasks: 1. Deploy and collect UAV based sensing systems during the testing through enrichment of the payload of the sensing tools that are aboard one of the heavier weight UAVs; and 2. Develop and disseminate a UAV inspection protocol manual. There is no such community standard regarding how UAVs are deployed, what knowledge they should have, priority, and with whom they should be communicating.

Discussion:

Commissioner Miyamoto stated it is interesting to use the drones to make the research process much more efficient with possible expansion into actual practice on the field, especially for pre- and post-earthquake. Commissioner Miyamoto asked if Professor Hutchinson is stating that the change detection can be seen through the pre-earthquake condition of the building minus the ground deformation point.

Professor Hutchinson explained that it could be the crudest detection one could approach with. It is a question of scalability and could involve a very minute detail of a soft-story building or a more catastrophic scenario that includes multiple infrastructures. High-resolution cameras are already currently being



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used and slides are available if the unit being considered to upgrade the sensing tools is of interest. In that sense, one could change the sensor easily and it would be tailored towards what can be done with the shake table as it is a controlled lab environment.

Commissioner Miyamoto asked if how it can be used in actual practice of a disaster for structural damage is included in research.

Professor Hutchinson explained the building will be damaged next year and there will be an opportunity to compare.

Representative Nezhura asked if the drones previously identified are made with US built components. Also, she recommended including Cal OES in this project.

Professor Hutchinson stated some drones are Chinese-made and if this is a concern to the SSC. Payload units that are completely US made are available and can be selected for this task and planned to install sensors on. Professor Hutchinson agreed to utilize Cal OES's connections and collaborating partners when completing this project, Commissioner Kim-Lopez inquired about the cost for the project.

Professor Hutchinson stated \$95k was the requested amount, which is mainly for the student's support. The sensors are a minimal cost since a few of the boards are already obtained to be able to control the sensors in consideration.

Commissioner Kim-Lopez asked if there is any additional funding for the future and if there was a sense of what the total cost would look like.

Professor Hutchinson stated she believes the amount requested is what is needed to accomplish the 2 tasks for the project.

No public comment.

Chair Silva stated this project would help and enhance the research project related to the Shake Table test. Chair Silva asked the SSC Executive Director to provide an overview of the SSC's California Research and Assistance Fund (CRAF) and how funds are used for projects in which the SSC supports.

Executive Director Ewertsen provided details of the SSC CRAF fund.



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A motion was made by Commissioner De La Cruz and seconded by Commissioner Miyamoto to allocate \$95k from the CRAF fund, for the multi-hazard building performance monitoring system using UAV based technologies through the University of California, San Diego.

Motion passed unanimously.

V. Northridge Anniversary Outreach and Education Proposal

Speaker - Mark Benthien, Director of Communication, Education and Outreach, Southern California Earthquake Center (SCEC)

Chair Silva introduced Mark Benthien, Director of Communication, Education, and Outreach from the Southern California Earthquake Center (SCEC). The presentation is a request for \$99k from the CRAF Fund to support the project.

Mr. Benthien explained that the 30th anniversary of the Northridge Earthquake from January 17, 1994, is approaching. The SCEC's mission is to coordinate all the science on earthquakes in Southern California as a natural laboratory and communicate that information to the public.

For the Northridge Anniversary Educational Campaign, SCEC would like to bring all that has been worked on forward and combined with a campaign to increase awareness about earthquake hazards, encourage preparedness and mitigation, and inform about what to do before, during, and after an earthquake. With the support from the SSC, SCEC wants to focus part of the activity on engaging the vulnerable and underserved communities, in coordination with all our many nonprofit, local government, faith-based, and other partners.

A yearlong set of activities gearing up this fall will commence, but kick-off will begin in January. It is intended to have activities, at a minimum in English, including many based around our 54-minute documentary *Quake Heroes* film and large events with a preparedness fair tied to the Seven Steps to Earthquake Safety. SCEC would like to have a public event along with that including a streaming of the film.

Translation of the film into Spanish, Chinese, and other languages is currently being completed.



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Discussion:

Representative Gould shared her enthusiasm regarding the film.

Representative Nezhura provided specific comments regarding funding that the SCEC receives through National Earthquake Hazards Reduction Program (NEHRP) and inquired how funding that is being requested from the SSC will be leveraged against the existing project. Along with details of the upcoming screening of the film.

Mr. Benthien provided comments on how funds will be expended.

Commissioner Kim-Lopez asked Mr. Benthien if the team has any way to track statistics from the discussion panels at upcoming events.

Mr. Benthien stated the type of evaluation that will be done at the events are going to include observations from the graduate students who will be involved in the evaluation at the event as well as participant surveys asking individuals to answer a few questions.

Commissioner De La Cruz applauded this project and the ability for it to reach people through various ways especially those underserved and in marginalized communities.

Mr. Benthien stated the SCEC has many partners across the state that intend to partner with to identify the locations. The events being planned with this support will be part of a broader effort surrounding the anniversary and the film also will be featured at for other public events. SCEC will be tracking invitations and attendance.

Commissioner Garnes provided comments about how disseminating the information to those that may have a hardship with attending events will be accomplished.

Mr. Benthien stated that the film will be posted on YouTube for viewing.

Chair Silva asked how many individuals the team is trying to reach during the year 2024.



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Mr. Benthien stated a specific number has not been set.

Chair Silva asked what the total budget for the anniversary events is and what portion of the total budget, the \$99k requested from SSC represents.

Mr. Benthien stated he believes the total estimated budget could be in the upwards of a million dollars with multiple funding sources.

No public comment.

A motion was made by Commissioner Garnes and seconded by Commissioner De La Cruz to allocate \$99k from the SSC's CRAF Fund to support the Northridge Earthquake 30th Anniversary Educational Campaign which is being organized by SCEC.

Motion passed unanimously.

VI. Ad-Hoc Committee Membership

Speaker – Annde Ewertsen, SSC Executive Director

Annde Ewertsen, SSC Executive Director, stated the SSC had approved a process to establish Ad-Hoc Committee Memberships at a previous SSC meeting.

SSC Executive Director Ewertsen announced commissioner recommendations for the SSC Ad-Hoc Committee Memberships:

Strategic Plan Committee- Commissioner Silva and Commissioner Garnes
Ferndale/Türkiye Report-Commissioner De La Cruz and Representative Nezhura
for Commissioner Ward

Fire Station Inventory Report-Commissioner Wells and Representative Gould for
Commissioner Clair

No comments or questions from commissioners.

No public comment.

A motion was made by Commissioner Kim-Lopez and seconded by Commissioner Silva to approve the Executive Director's recommendations to



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the Strategic Plan, Ferndale/Türkiye Report, and the Fire Station Inventory Committees.

Motion passed unanimously.

VII. AB 100 Report - CA Department of General Services - Office of Public-School Construction

Speaker – Brian LaPask, Chief of Program Services, Interagency Services Division - Office of Public-School Construction, CA Department of General Services

SSC Executive Director Ewertsen provided a brief overview of AB 100 Reports. Executive Director Ewertsen noted the three previously submitted reports and explained this series of reporting is education themed. The SSC requested reports from the Office of Public-School Construction (OPSC), Division of the State Architect (DSA), and the California Department of Education (CDE)

Mr. LaPask provided a high-level overview of the Office of Public-School Construction (OPSC) Seismic Mitigation Plan. Mr. LaPask explained the Seismic Mitigation Plan (SMP) was created as part of Prop 1D, and it gave an initial funding of just under \$200M. Since 2018, when the program went through the initial \$200M, they've been able to pivot to the program funding being available through the standard new construction funds. Up until about a month ago, 107 projects have been funded for \$335M, with over 180 buildings either replaced or rehabilitated. Eight of those projects received financial hardship assistance. Districts don't need to have a financial resource to qualify for the program necessarily. It can be for any district, even a small school district that doesn't have the financial resources could potentially receive funding. Seismic program funds aren't the only way to do seismic upgrades. School Facility Program Modernization funding can also be used to do seismic upgrades, or even bigger work than just patching and repairing. Those aren't tracked as closely and are usually intertwined with a larger modernization project.

Mr. LaPask stated for any additional resources can be found on the OPSC website that includes a seismic mitigation area with guides and videos. If individuals are interested in anything with OPSC they can sign up for a subscription list to be aware of all that is being offered.

Discussion:



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Chair Silva stated that \$335M has been invested in this program since it was initiated. Chair Silva asked if OPSC is getting their source of funds as the general fund.

Mr. LaPask explained that it is where the current program authority is receiving funds. The team received \$1.4B in last year's budget and just under \$2B approved in this year's budget for the entire program.

Commissioner Kim-Lopez asked if there is a listing of the type of work that's been done at these locations. Commissioner Kim-Lopez explained that she is thinking about the critical water, wastewater infrastructure, and maybe some of the fire suppression infrastructure and asked if Mr. LaPask has a breakdown of the types of projects sort of that can demonstrate that.

OPSC does have each file that can be looked at, but Mr. LaPask does not know if there is a breakdown prepared. From Mr. LaPask's experience, most of it is structural work and he could gather more information in that regard.

Commissioner Kim-Lopez commented regarding the map of where the funding was distributed that she hopes there is a circle back to the areas that have not received funding to understand why they did not.

Mr. LaPask explained that OPSC always focuses on and likes to get the word out as widely as possible. There are several different ways for this to be achieved and the primary way this is done is to have the project management staff go out to monthly meetings at the County Office of Education and present information about the program.

Chair Silva asked if OPSC is allowing the County Office of Education to submit joint or bundled applications on behalf of the schools in their respective districts in those counties.

Mr. LaPask explained that OPSC would need an application for each project that's been requested but can help with that as well and offers pre-design and pre-submittal meetings where teams can help to look through what is being prepared to submit.

Chair Silva stated that oftentimes, it's an issue of staffing resources at a local level to be able to get those applications submitted. It happened with funds



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such as the ARPA funds across the federal system. The staff can really help with that process, help fill the forms out, and provide all the information.

VIII. AB 100 Report - CA Department of General Services - Division of the State Architect

Speaker - Diane Gould, Principal Structural Engineer, Codes and Standards Unit, CA Department of General Services

SSC Executive Director Ewertsen introduced the next AB 100 report from the Division of State Architect (DSA) provided by Representative Gould.

Representative Gould is the Principal Structural Engineer with DSA's Headquarters Office and presented an overview of DSA's Plan Review, Enforcement Authority, and Authority for Regulatory Development related to seismic safety.

Representative Gould gave background information on DSA as well as its roles and responsibilities. Representative Gould stated DSA currently has approximately 300 technical and administrative staff statewide with its Headquarters Office in Sacramento and 4 Regional Offices located in Oakland, Sacramento, Los Angeles and San Diego.

Representative Gould stated DSA is the authority having jurisdiction within the state of California for all public K-12 schools, community colleges, as well as state owned essential services facilities. Those facilities include police stations, fire stations, and emergency response facilities. In accordance with California Government Code 4450 through 4461, DSA has jurisdiction over access compliance requirements for all buildings in California, including schools that received public funds either in whole or in part. In addition to the schools and essential services facilities, DSA is also responsible for providing access compliance review for the UCs and CSUs, any state owned, or state leased buildings, as well as charter schools if that project receives state funding.

Some of DSA's core functions are to ensure that all school buildings comply with the regulations regarding the safety of design and construction in such a way that a valued asset to all involved parties is considered. DSA also participates in creating safe and accessible schools by implementing and enforcing the



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regulations in three specific areas: structural safety, fire life safety and accessibility.

Representative Gould stated some of the programs and products that DSA is involved with relevant to seismic safety include the DSA Academy, Structural Safety Code Development and is responsible for promulgating amendments to the California Building Standards Code, which is Title 24.

Representative Gould stated some of DSA's long term goals include continuing the work done to incorporate the latest science and engineering into the building codes to ensure safe performance of schools and seismic events, produce and maintain various documents, interpretations, and regulations and bulletins to notify and assist design professionals and stakeholders in understanding the special regulations that apply to schools. It also continues to develop and maintain training courses through the DSA Academy. A new project DSA has started is convening an Existing Buildings Task Force to explore possible adjustments to mandatory rehabilitation trigger. Depending on the level of work that is done to an existing building, it'll trigger a seismic evaluation and then retrofit of any of those deficiencies. DSA is studying the triggers now to see if the way they're structured it is either all in or all out. There's been discussion of whether there might be benefit in looking at a way to encourage gradual improvements to existing school buildings when work below the current triggers are performed.

Representative Gould stated a variety of links are provided and much more information can be found on the DSA website about any of the programs mentioned.

Discussion:

Chair Silva asked what level of construction triggers the requirement to have a DSA oversight and for Representative Gould to explain what permits are needed for.

Representative Gould provided background on IRA-22 and exemptions for alterations. She also advised commissioners to check out the IRA-22.



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Commissioner Kim-Lopez asked if Representative Gould has a geographic visual throughout the state of California to see the types of activities and how many schools have been worked on for an annual basis.

Representative Gould stated the construction observation that is done happens when the project is built. This is another aspect that is different with DSA authority. A local building department can mandate maintenance and declare a dangerous building after the fact. DSA's authority only extends to when a project is submitted. In the case of those seismic triggers, DSA doesn't have the ability to mandate updates/retrofits after the fact. Building codes change over time and a building that was built in 1955 under the Field Act would have been fully compliant with everything at that time. If no work has been done to that building other than putting in new carpet and paint, there may be some safety improvements that need to be done. Usually until that level of work is done, that building doesn't get updated. This is what DSA was looking at in the triggers because depending on the structural system and the nature of the building, some retrofits can be done easily.

Chair Silva stated that this was triggered because of the 1906 Earthquake and the 1933 earthquake in Long Beach, the focus on schools and addressed expanding the scope of the work to sustainability. This came up in a previous meeting while discussing a Seismic Sustainability Action Plan in Walnut Creek and individuals were trying to put schools in the SSC's outreach. The SSC does not have authority as a local agency over schools and school construction. Chair Silva asked if DSA is also exploring or working in other arenas than seismic and structural safety.

Representative Gould confirmed that a strict reading of the Field Act says that DSA is tasked with the maintenance and enforcement of all parts of Title 24. Title 24 now includes CALGreen, which is part 11 and did not exist before a few years ago. DSA does not have a Sustainability Plan Review department and has a budget change proposal they have been trying to get through the Governor's office to hire sustainability staff to do the plan review. DSA currently does not have the staff to complete the review but has the authority to say what is required. There are a few things that DSA will comment on and intake because it's easy to do, but to have an actual thorough review, DSA would need to have a sustainability staff.



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Chair Silva asked if Representative Gould also finds schools making improvements that trigger structural questions.

Representative Gould stated that pertains to the IRA-22 previously mentioned. There is a whole matrix table of when it is an issue and there's a column for the structural need to review and who it needs to be reviewed by.

Chair Silva thanked Represented Gould for the work the agency does on behalf of the youth.

IX. AB 100 Report - CA Department of Education (CDE)

Speaker – Jake Wolf, Specialist, Emergency Services Team

Jake Wolf provided an overview of the CA Department of Education (CDE) that serves over 6M students daily, which makes initiatives vital to the state's comprehensive approach towards earthquake risk reduction and post-disaster economic recovery. This includes CDE's strategies, initiatives and partnerships formed to achieve these critical objectives.

CDE's focus is to strengthen school infrastructures, enhance emergency response plans at the local level, improve disaster education for all K-12 education, post-disaster economic recovery that comes in a lot of different forms including supporting schools through the recovery process and partnerships with various agencies including those heard from today. CDE is well integrated with all the state agencies that have some form of interest into public schools and education with several examples highlighted in the presentation.

Discussion:

Representative Nezhura thanked Mr. Wolf and noted limited training that goes on and education, so this Disaster Service Worker video shown was well received. The video was shown to local Cal OES and other public safety who now want to do a general one for all disaster service workers that's very similar. Representative Nezhura also asked if CDE is about to review the School Emergency Preparedness Plans upon request and provide recommendations or if local education agencies that are working on their preparedness are provided examples of well-written comprehensive plans or a template.



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Mr. Wolf noted that comprehensive school safety plans and emergency operation plans are different and responded CDE does not have the capacity to review every plan in the state of California. The only thing that we must do is receive report from the local education agency and verify that it was in fact done.

Chair Silva asked if the fourth-grade curriculum is a required portion of the California curriculum or if it is optional.

Mr. Wolf responded that there's autonomy at the classroom level for teachers in concert with the local school board to determine what gets taught in schools. The Preparedness Ambassador Program (PAP) meets the requirements of fourth-grade curriculum.

Commissioner Garnes asked if the program can be expanded to involve ages beyond 4th grade.

Mr. Wolf stated he believes that the way the program was developed, it could potentially be utilized in support of any grade. The program is very easy to understand, comes with a teacher and student workbook and even a coloring book.

Representative Nezhura explained the 4th grade curriculum was completed utilizing a grant, which is now expired. The program was experimental and wildly successful. Aside from the teacher's curriculum and student workbook, the program also includes a family guide in six languages to share what is learned and complete preparation activities with families. She also noted a Teen CERT Program has been developed.

Chair Silva thanked Mr. Wolf for attending today and shared that the SSC looks forward hearing more about the work being done through the California Department of Education.

X. Building Code Development Updates

Speaker - Ryan Kersting, SE, Structural Engineers Association of California (SEAOC), Associate Principal, BUEHLER



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Chair Silva introduced Ryan Kersting to provide Building Code Development Updates.

Mr. Kersting representing the Structural Engineers Association of California (SEAO) noted there are a lot of organizations working on the concept of Functional Recovery.

Mr. Kersting stated since 2018, there have been legislative bills introduced in California regarding building codes and functional recovery. At the federal level, the Congressional Reauthorization of the National Earthquake Hazards Reduction Program (NEHRP) (2018) set the stage for a lot of progress to be made on Functional Recovery. NEHRP particularly charged FEMA and NIST to develop a committee of experts and provide a report to Congress on how the post-earthquake functional recovery time of buildings could be improved through code adjustments, planning and community advocacy.

Mr. Kersting provided a definition of functional recovery and what has been done in this space. Mr. Kersting also stated there is a new report from FEMA that discusses Estimated Annualized Earthquake Losses (AEL). At a national level, the estimated AEL for the US is around \$14.7B. About \$10B are expected to come from California risk and expected loss from earthquakes. The total economic exposure across the United States is \$107.8T from earthquake losses, 30% roughly from California.

Mr. Kersting stated there is a lot of highlighted work and relevant resources include the NEHRP Seismic Provisions and EERCI-SEAO Joint Policy Agenda. The Joint Policy Agenda was issued recently in response to the Türkiye Earthquake and three key priorities have been identified for California to reduce seismic and earthquake risk. Those three priorities are to: (1) identify & retrofit existing vulnerable buildings; (2) require healthcare facilities to be earthquake-ready; and (3) adopt building codes that help communities recover.

Mr. Kersting stated SEAO and Earthquake Engineering Research Institute are committed to partnering with SSC, Cal OES, and state agencies. Mr. Kersting stated SSC serves a really important role in informing stakeholders, elected officials and other agency representatives on what the building codes are achieving and what can be done better.



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Discussion:

Chair Silva thanked Mr. Kersting for the important work.

No public comment.

XI. Miscellaneous Announcements

SSC Executive Director Ewertsen introduced the two new SSC staff members, Chris Lozano, and Trinity Gleckler.

SSC Executive Director Ewertsen stated the SSC will relocate from the West Sacramento Office to Mather Complex on August 23rd.

SSC Executive Director Ewertsen stated State Farm and Allstate have decided to no longer write new homeowner's insurance business in California. State Farm will not pick up any additional business beyond their normal 7k policies per year. With fewer companies underwriting policies, it will be more difficult for people to purchase homeowner's insurance, which may make it more expensive. A homeowner must have a home insurance policy to purchase earthquake insurance.

SSC Executive Director Ewertsen stated \$15M was put back into the state budget for the Multi-Family Soft-Story Program. The California Residential Mitigation Program is a joint venture between Cal OES and the California Earthquake Authority (CEA) and will be administering the Multi-Family Soft-Story Program.

XII. Public Comment.

No public comment.

XIII. Adjourn.

The meeting was adjourned at 12:22 pm by Cindy Silva, Chair.