

CALIFORNIA EARTHQUAKE EARLY WARNING
ADVISORY BOARD
AUGUST 5, 2020, MEETING



Cal OES
GOVERNOR'S OFFICE
OF EMERGENCY SERVICES

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PUBLIC MEETING NOTICE

CALIFORNIA EARTHQUAKE EARLY WARNING ADVISORY BOARD MEETING

NOTICE OF MEETING

Wednesday, August 5th, 2020, 3:00 PM

BlueJeans Video Conferencing

Participant Call-In Number: 1-888-240-2560 | Meeting ID: 262 643 410

Meeting Link: <https://bluejeans.com/262643410>

Meeting Agenda: <https://www.caloes.ca.gov/cal-oes-divisions/earthquake-tsunami-volcano-programs/california-earthquake-early-warning-program/advisory-board>

Participating Remotely: All participants

AGENDA

- I. **CALL TO ORDER/INTRODUCTIONS**
- II. **REVIEW AND APPROVE September 26, 2019 MEETING MINUTES**
Advisory Board Members will review previous meeting minutes to adopt or amend.
- III. **GENERAL PROGRAM UPDATE**
 - a. General update of activities since last advisory board meeting.
 - b. Public Comment
- IV. **SYSTEM OPERATIONS**
 - a. Update on the alert delivery methods for earthquake warnings.
 - b. Presentation on the development of policies and procedures for After Action Reports.
 - c. Public Comment

V. EDUCATION AND OUTREACH OVERVIEW

- a. Overview of the education and outreach campaign.
- b. Public Comment

VI. FINANCE

- a. Update on previous expenditures and new funding.
- b. Public Comment

VII. NEXT STEPS

- a. Discussion of how to increase system adoption.
- b. Public comment

VIII. Closing Statements and Public Comment

- a. Advisory Board Members may provide closing statements.
- b. Public Comment

IX. ADJOURNMENT

Individuals who require special accommodations, or to receive meeting materials, contact the individual below at least seven days prior to the scheduled meeting date:

Amanda Moyer, Earthquake Early Warning Advisory Board Executive Officer
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PREVIOUS MEETING MINUTES

California Earthquake Early Warning Advisory Board Meeting Minutes

California Governor's Office of Emergency Services (Cal OES)
Multi-Purpose Rooms 1
Mather, CA
September 26, 2019

Members Present:

Tina Curry, Deputy Director of Planning, Preparedness and Prevention, designee of Director of the Governor's Office of Emergency Services Mark Ghilarducci

Alexis Podesta, Secretary of the California Business, Consumer Services and Housing Agency

Bryan Cash, Assistant Secretary of Finance and Administration designee of Secretary of the Natural Resources Agency

Lori Pepper, Deputy Secretary for Innovative Mobility Solutions, designee of Secretary of the California State Transportation Agency

Susan Fanelli, Chief Deputy Director of Policy & Programs, California Department of Public Health designee of the Secretary of the California Health and Human Services Agency

Robert Charbonneau, designee of President of the University of California

Ebi Saberi, Chief, Architecture and Engineering, designee of the Chancellor of the California State University

Holly Porter, Senate Committee on Rules appointee representing county Governments

Lupita Sanchez-Cornejo, the Speaker of the Assembly's appointee representing the interests of private businesses (joined after roll call via teleconference)

Members Absent:

Michael Lewis, Governor's appointee representing the utility industry

I. Welcome / Call to Order / Introductions

- Meeting called to order by Rachel Sierer Wooden, Advisory Board Executive Officer. A quorum was achieved.
- Ms. Sierer Wooden announced that Director Ghilarducci was not able to attend and Deputy Director Curry will be here in his place.
- Previous meeting minutes were moved by Deputy Secretary Pepper, and approved unanimously.
- Deputy Director Curry provided opening remarks about the path to rollout the system in 2019. She explained that the process required to bring the system to this point included a large investment and now the technology is on the brink of being utilized. Cal OES will

need the support of the Advisory Board and everyone else in the room to communicate about the program.

II. **California Program Update**

- Brian Ferguson, Cal OES Deputy Director of Crisis Communications and Public Affairs presented on the path forward and how the Advisory Board can move the forward and communicate the path for the California Earthquake Early Warning Program to move forward. The goal is for this system to be utilized by 10% of the state population within the first year.
- Deputy Director Curry asked the board members to determine how to pass along information to each of their respected constituencies.
- Deputy Director Cash asked when the mobile application would be available to the public. Deputy Director Ferguson, responded that the goal will be release the mobile application when it is ready, but that it would be great if it coincided with the 30th anniversary of Loma Prieta.
- Dr. Robert deGroot, the Coordinator for Communications, Education, Outreach and Technical Engagement for the United States Geological Survey (USGS), presented on the results from the earthquake early warning wireless emergency alert (WEA) tests in Downtown Oakland and San Diego County. The only a portion of the data is available to present and the rest will be forthcoming in a subsequent report.
- Deputy Director Cash ask how much time will people get between when the alert and shaking arrives. Dr. deGroot responded that it depends on various factors about the location of the origin of the earthquake, the depth and magnitude of the earthquake and the soil composition.
- Secretary Podesta asked when the WEA test data would be available. BDG we are still analyzing it and that it must go through internal USGS review before being released.
- Deputy Secretary Pepper asked how the information will be presented on phones during an alert? Dr. deGroot explained that the alert during the test was displayed and made the same sounds as a standard WEA message. He followed up by explaining that additional work is being done to provide guidance on specific earthquake early warning alerting messages.
- Executive Director Porter thanked the USGS and Cal OES for their partnership on this test. She commented that it was great to learn more about the system and it was recently during an evacuation in San Diego County. Executive Director Porter continued with a question about geo-targeting and the possibility that the system has bleed over and alerts a larger area than originally intended and requested additional information about latency measured for the

test alert in the Federal Emergency Management Administration's (FEMA) Integrated Alert and Warning System (IPAWS) gateway. Mr. Doug Given (USGS) commented that FEMA IPAWS committed to working with USGS to reduce latency within the gateway. IPAWS also committed to developing a dedicated pathway for EEW alerts within the gateway. Mr. Given add that the Federal Communications Commission (FCC) granted a waiver for EEW to USGS on September 24, 2019 to the recent requirement that required handset to geo-targeted to within 0.1 miles of the target alert area.

- Assistant Secretary Cash asked about the other forms of technology and Dr. deGroot said that the next presenter, Dr. Richard Allen, will talk about an mobile application, and the Cal OES is working on datacasting.
- Deputy Director Curry commented that WEA is an opt. in system that could be used for this technology. The test were valuable to show limitations and highlight areas for improvement. We may have to train people less, even though there is a precise action, because people are used to getting WEA alerts as one of many alert and
- Dr. Richard Allen, Director of the Berkeley Seismological Lab, expanded on Deputy Director Curry's response by explaining how much time might be available with the alert in the case of the Loma Prieta earthquake
- Dr. Allen presentation on the MyShake Mobile application, including the testing user base, latency data and research that could lead to improvements in EEW.
- Executive Director Porter asked how the delivery times compared between the recent WEA tests and MyShake tests, understanding that this would clearly vary based on the size of the user base and geography. Dr. Allen explained the 3.8 second median delivery time for MyShake (compared to 10 seconds for WEA) were based on a user base of approximately 1,800 users and that updates will continue to be made as the user base grows, with technical partners, to maintain delivery speeds.
- Deputy Director Curry mentioned that current test users receive gave alerts for all the earthquakes above magnitude 3.5, but in the future users will only receive alerts when shaking in the users area is at least Modified Mercalli (MM) Intensity Scale 3.
- Assistant Secretary Cash said that he downloaded the mobile application during the meeting and asked why the user base listed within the mobile application was so much larger than mentioned during the presentation. Dr. Allen responded that the numbers included in the presentation are for the second generation of application and only count new users in California. The mobile

application lists the number of people worldwide who have ever downloaded the application.

- Deputy Director Curry commented that even though there is great potential in automated actions, the most interest according to the 2014 benefit study industrial leaders we mores interested in protecting their workforce, therefore encourage people to have their workforce download the app and utilize WEA, could be used as a workforce safety tool.
- Assistant Secretary Pepper suggested that the program should pursue installing the mobile application on state issued cellphones as well as incorporating training as part of new employee orientation.

III. Functional Area Updates

- Tabitha Stout, Acting Deputy Director of Finance and Administration, Cal OES, provided about recent activities from the Finance Working Group including a high-level overview of recent funding.
- Deputy Director Ferguson provided an update on recent activities of the Education and Outreach Working, including more specifics about the various educational pathways being utilized for education and outreach and plans for the future including targeting messaging for persons with AFN.
- Executive Director Porter asked if efforts were underway to reach out to the private workforce specifically commenting the Infaguard, an Federal Bureau of Investigation (FBI) and private industry collaboration in San Diego could be a way to spread adoption of the mobile application. She also mentioned the San Diego County Emergency Management mobile application that could provide lessons on communications that people may have privacy concerns about location data being tracked, and applications can affect battery life.
- Chief Deputy Director Fanelli commented that the mobile application could be helpful to hospitals, since 10 seconds could mean a lot in hospitals, and that hospital staff already receive PSPS alerts, which they currently find helpful.
- Mr. Henry O'Neill, Emergency Communications Division Chief, Cal OES, provided an update on the recent activities of the Research and Development Working Group. Including updates on membership, the recent WEA test and mobile application guidelines.
- Ms. Dana Ferry, System Operations Project Manager with Cal OES presented on behalf of the System Operations Working Group along with Dr. Peggy Hellweg, University of California Berkeley. The

presentation included the use of previously allocated funding and plans for the future technical development with seismic sensors.

- Assistant Secretary Cash asked about any working being done with the California State Parks. Ms. Ferry responded that they are working with California Department of State Parks and Recreation staff on a regional level but could use assistance with final permit approvals.
- Executive Director Porter asked how the currently installed seismic sensors are distribution. Dr. Hellweg responded that there is a higher density of stations in the Bay Area and Los Angeles regions, around known faults. Ms. Ferry added that targeted regional goals exist and there is currently a higher need for sensors in Northern California.
- Deputy Director Curry asked if there are any other concerns for system operations other than permitting. Dr. Hellweg answered that there are siting concerns, funding concerns, and challenges with multiagency coordination. Deputy Director Curry answered that Cal OES is working towards establishing a mechanism for ongoing funding.

IV. Public Comment

- No public comments were made.

V. Adjourn

- Chief Deputy Director Fanelli asked about how the board members could become beta testers for the mobile application and Executive Officer Sierer Wooden directed her to Dr. Jennifer Strauss with the UC Berkeley Seismic Laboratory.
- Motion to adjourn Podesta seconded

MEETING MATERIALS:



Cal OES
GOVERNOR'S OFFICE
OF EMERGENCY SERVICES

California Earthquake Early Warning Advisory Board Meeting

August 5th, 2020

Roll Call

- Secretary of Natural Resources Agency
- Secretary of California Health and Human Services
- Secretary of Transportation
- Secretary of Business, Consumer Services, and Housing
- Speaker of the Assembly appointee representing the interests of private businesses.
- Governor's appointee representing the utilities industry.
- Senate Committee on Rules appointee representing county government.
- Chancellor of the California State University
- President of the University of California



Review of September 26, 2019 Minutes



General Program Update



Rachel Sierer Wooden – Seismic Hazards Branch Chief

Program Update

- EEW in California launched statewide 10/17/2019, the 30th anniversary of the Loma Prieta earthquake.
- First MyShake Alert was issued on 12/17/2019.
- First WEA Alert was issued on 01/24/2020.
- 20 events have met alerting criteria as of 8/4/2020.
- Seismic network status:
 - 72% Built
 - 69% of stations are currently contributing
 - 91% of stations have been funded



System Operations



Jennifer Strauss – MyShake Product Manager

Enhancing
with the




Faster alerts to everyone in California
progress update



Jennifer Strauss
Product Manager




Alert Delivery

M 5.8 Lone Pine June 24, 2020

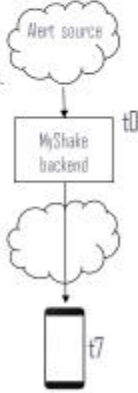
Largest public alerted event to date

Alerts sent to 47,747 phones within MMI III contour

- 20% received in 5.1 sec
- 50% received in 7.1 sec
- 80% received in 9.4 sec



Alert sent out in a series of 9 updates.



Experience Reports

Very widespread reporting by users.
28,000 new downloads after the event.

Android and iOS

- Now available in Spanish
- Alert update capabilities
- Sharded backend improves latencies
 - Faster now than for the previous examples
- Large datasets to analyze resulting from larger user base

Next Steps

- Roll Out and Testing
 - Expanded testing group
 - 1M download milestone reached
- Ongoing Improvements
 - UI improvements for AFN
 - Backend: Continue to reduce latency
 - Preparations to scale to 4M
- Research and Development
 - Enhanced earthquake detection

System Operations



Rachel Sierer Wooden – Seismic Hazards Branch Chief

After Action Report Development

- **Purpose**
 - Accuracy
 - Transparency
- **Thresholds**
 - MyShake distributed to more than 1,000 cell phones
 - WEA alert distributed
 - Anytime MyShake or WEA has an alert malfunction
- **Elements provided by Partners**
 - **System Operation**
 - Analysis of MyShake Response (UC Berkeley)
 - Analysis of Wireless Emergency Alert Operation WEA (USGS)
 - **Alert Performance**
 - Did What was expected to happen, happen?
 - If what was expected to happen, did not happen; what happened instead and why? If known.
 - **Corrective Action**
 - Including timeline of implementation of corrective action(s).
 - **Recommendations for Further Improvements**



Education and Outreach Overview



Pulsar Advertising

Strategic Approach

- Educate on the many ways to receive earthquake warnings and how to react to them.
- Reach and educate ALL Californians.
- Focus on digital strategies and provide broad outreach via TV.
- Engage with influential organizations and groups.
- Adaptable.

- **Paid Advertising**
 - **Television and Online Video** :15 and :30-second ads that feature the benefits and need to download the MyShake app.
 - **Social media content** to targeted audiences that will provide greater educational information and detail on the tools and resources available.
- **Public Relations**
 - Proactive messaging and outreach using PR, earned media, social media and Cal OES owned media.
 - News media outreach 3rd Party Engagement
 - Presentations to organizations.

Measurement

Research

- Focus groups for message testing.
 - 2 Bay Area focus groups with diverse membership.
 - 2 Southern California focus groups with diverse membership.
- Online pre, mid, post quantitative survey .







New Program Names Choices:

- Earthquake Ready California
- California Earthquake Warning System

Timing

- Paid and earned media and outreach activities will begin in August and run through March 2022
- In addition to identifying and securing PSA opportunities, the TV spots will run in 2 week runs to leverage key event and outreach activity:

- August 31—September 13, 2020
- October 5—18, 2020
- November 16—29, 2020
- April 5—18, 2021

- May 3—16, 2021
- June 7—20, 2021
- September 6—19, 2021
- October 4—24, 2021

Finance



Dana Ferry – System Operations Project Manager

2019-2020 Spending Allocations

- \$6.9 million for an education and outreach campaign.
- \$7.9 million for system operations to support additional seismic sensors, and enhance data processing capabilities.
- \$1.5 million continue to support the MyShake mobile application, and enhance the monitoring systems for emergency managers.



Heather Carlson – Assistant Director of Finance and Administration

2020-2021 Budget Allocations

- \$17.3 million loan from the Schools Land Bank Fund while ongoing revenue options continue to be evaluated and pursued.
- Includes:
 - Support for system operations, program management, education and outreach, and research and development to expand earthquake mitigation.



Next Steps



Next Steps

- Public Private Partnerships
 - New alerting modalities
- How can you help?
 - Workforce adoption
 - Spread the word to Download the MyShake App
 - Go to earthquake.ca.gov for additional information and resources



General Public Comment

