



California Earthquake Early Warning Advisory Board Meeting

May 10, 2023



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 Minutes November 3, 2022

General Program Updates

Derek Lambeth, Program Manager, Earthquake Early Warning



General Program Update

Since the November Advisory Board Meeting:

2023 Business Plan

• 2023 Special Report to the CA Legislature

Implementation Plan







Ferndale M6.4 – December 20, 2022

- 271,277 MyShake devices alerted, and approximately 400,000 android users alerted.
- Over <u>86,000</u> MyShake App downloads over a three-day period, following event.
- Notable Aftershocks:
 M5.4
 M4.6







Other Notable EQ Events

• M4.5 Tres Pinos, April 4, 2023

• M4.4 Cobb, April 11, 2023







General Program Update

Since the November Advisory Board Meeting:

Action Items



Research and Development

Megan Sullivan, Senior Emergency Services Coordinator





Datacasting

Can an alerting system that uses a portion of broadcast television bandwidth be delivered in under 3 seconds?







Datacasting Phase 1

- Prove feasibility of datacasting for rapid alert delivery (< 3 sec)
- > \$170,000 Grant to:
 - Purchase datacasting transmission hardware
 - Interface datacasting software with USGS alerts









Datacasting Presentation Placeholder





Datacasting Phase 2

- ≻ \$500,000 Grant
 - Purchasing hardware and receivers for 6 new PBS Stations
- APTS & CPT to go
 through the Pilot
 License Agreement
 process
- Will complete datacasting capabilities for all PBS Stations in CA









Discussion Questions

Datacasting has real-world applications within all sectors included in EEW implementation. What areas within your sector would benefit the most from datacasting?



Sector-Based Implementation

Megan Sullivan, Senior Emergency Services Coordinator



Sector-Based Implementation

• Phased approach to implementing EEW across critical sectors

PHASE 1	PHASE 2	PHASE 3	
 First Responders 	 Heath Care 	 Public Venues 	
 Transportation 	 Utilities 	 Financial Institutions 	
 Government Facilities 	0111103	 Telecomm 	
 Education 		 Manufacturing 	
		 Commercial Buildings 	





Cal OES Facilities Implementation

- Installing TVs for Cal OES Facilities
 - EEW Display
 - Datacasting
- MyShake Desktop App
- Request for Information Responses
- Seeking proposals for implementation next fiscal year







Fire Station Implementation

- Assess, procure, install, and test EEW automated actions in local fire stations
- Stations identified based on:
 - Location within a seismically active area
 - History of catastrophic earthquake events
 - Social Vulnerability Index
- Collaborating with the Seismic Safety Commission and their survey





Fire Station Implementation

Why EEW Technology and automated actions are important?



San Francisco Chronicle

At the Rio Dell Fire Protection District, firefighters couldn't immediately respond to calls for help after the doors on the fire station were stuck shut, leaving the fire engines trapped inside, said Chief Shane Wilson. He added that it took 15 minutes to pry them open.





Fire Station Implementation

- Examples of EEW Technology
 - Alerting
 - PA systems, intercom, alarms, and speakers
 - Visual lights, audible alerts, and fire alarm boxes
 - ADA Message Board
 - Automated Protective Actions
 - Activate bay doors and open gates
 - Throttle valves for gas, water, etc.
 - De-energize electrical control panels
 - Slow and/or stop people-moving devices







Airport Implementation

- Coordinating with several stakeholders
 - Board Member Pepper, CalSTA
 - Caltrans
 - UC Berkeley Resilient and Innovative Mobility Initiative (RIMI)
 - UC Berkeley Seismology Lab
- Feasibility Study
- Los Angeles International Airport (LAX) & Palm Springs International Airport (PSP)





Airport Implementation

- Feasibility study will explore:
 - Checklist of all the steps and stakeholders needed to implement EEW on the land & air side
 - Technology and equipment needed
 - Automated action capability
 - Benefits of EEW and savings to life and property
 - Estimated costs:
 - Installation
 - Maintenance







Airport Implementation

- Why Los Angeles
 International
 Airport (LAX)?
 - Already working on implementing EEW
 - Location
 - Millions of annual passengers
 - Multi-modal



- Why Palm Springs International Airport (PSP)?
 - Resiliency
 - Location
 - Logistics
 - Annual Statewide
 Earthquake
 Conference









Discussion Question

How will you prioritize EEW implementation in the agencies and organizations within your sector?



Education and Outreach Overview

Samantha Layne, Administrative Analyst





United Way Presentation Placeholder



San Jose Earthquakes Pilot Partnership





SJ Earthquakes

- One year pilot program.
- Access to 18,000 fans on match nights.
- Shake Simulator present.
- Education day with CEO and team.
- Billboards, signage, PA, radio ads and social media support for EWC campaign.
- Players to create videos in support of MyShake downloads.





SJ Earthquakes (cont.)

 Goal is to educate and encourage Californians and businesses to have a plan in place and be prepared.



EEW Quake Safe Cities Campaign



- Statewide campaign to enlist cities to help further EWC goals.
- Mayors commit to actions to make their city earthquake prepared.
- Assess EEW integration possibilities, app downloads, preparedness events and sharing of all EWC resources.
- New web page on earthquake.ca.gov dedicated to the campaign.



UCLA Shake Simulator Event 4/6



- Displayed on campus at Wilson Plaza
 - Visitors included students, engineering professionals, emergency personnel, professors, & international tourists
 - Majority of visitors were students between the ages of 18 and 24
 - About 100 people rode the simulator
 - Cal OES also participated in outreach events this year in Pomona, Inglewood, San Francisco, Bakersfield, and Wilmington.





Discussion Questions

Outside of funding, what incentives exist to encourage participation in the EEW Quake Safe Cities project?

What can be done within your sector to encourage participation?



System Operations Update

Derek Lambeth, Program Manager, Earthquake Early Warning





USGS Presentation Placeholder



CEEWS Network Goal of 1,115 Stations May 2023 Status





<u>937</u> (+25) stations in CA contributing to Shake Alert







CEEWS System Operations Overview 2016-2023











Sensor Build Out Status

- Completed 600 new and updated EEW/real-time stations, bringing the total contributing to EEW to 937.
- Connected 94 EEW stations to the existing State Microwave.

* (**Red)** text indicates completion since last EEW AB meeting

	Funded New/Updated EEW Stations	Completed	Remaining
CA Geological Survey	232	212 (+20)	20
US Geological Survey	161	142 (+15)	19
UC Berkeley	152	129 (+12)	23
Caltech	133	93 (+21)	40
Department of Water Resources (DWR)	24	24	0
Total	702	600 (+68)	102

	Funded EEW Microwave Connection	Completed	Remaining
Public Safety Communications (PSC)	350 <mark>(+18)</mark>	94 (+9)	256







Discussion Questions

How would you determine which agencies/organization within your sector would benefit from being an LtO, as opposed to being a customer of an LtO?



Finance

Lori Nezhura, Deputy Director, Planning, Preparedness & Prevention





EEW Budget Update

2022-2023 Spending Plan

- \$17.1 million on-going General Fund approved.
- With dedicated funds to:
 - Datacasting
 - Implementation of Pilot Projects
 - MyShake Computer Application
 - Updated EEW Benefit-Cost Analysis







EEW Budget Update

2023-2025 Spending Plan

Two-year contract allows ongoing funding to provide:

- Organization
- Efficiency
- Stability/Security



Cal OES Director Closing Comments

Advisory Board Member Closing Comments

General Public Comment

Adjournment