



*Cal* OES

GOVERNOR'S OFFICE  
OF EMERGENCY SERVICES

# California Earthquake Early Warning Advisory Board Meeting

November 3, 2022



# 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**

June 29, 2022

October 27, 2021



# **General Program Updates**

**Jose Lara, Chief, Seismic Hazards Branch**



# General Program Update

Since the June 2022 Advisory Board Meeting:

- Earthquake Rapid Response:
  - Santa Rosa
  - San Jose
- Action Items:
  - June 29 Board Meeting



# Santa Rosa M4.4 – September 13, 2022

- 21,352 MyShake devices alerted, and approximately 400,000 android users alerted.
- Nearly 30,000 MyShake App downloads over a three-day period, following event.
- Total ad equivalency value for the earned media push nearly \$100,000.



# San Jose M5.1 – October 25, 2022

- 95,272 MyShake devices alerted, and over 2.1 million android users alerted.
- Over 165,000 MyShake App downloads over a three-day period, following event.
- Now over 2 MILLION MyShake downloads.
- 182 articles in English, Italian, Chinese, Korean, and French and 18 broadcast interviews mentioned MyShake
- Total ad equivalency value for the earning media push nearly \$877,000.

The logo is a shield-shaped emblem. It features a white silhouette of a bear walking towards the left. Above the bear's head is a pink five-pointed star. The background of the shield is a light tan color with faint, radiating lines emanating from the top, suggesting a sun or a seismic event. The shield has a thin blue border.

# **System Operations Update**

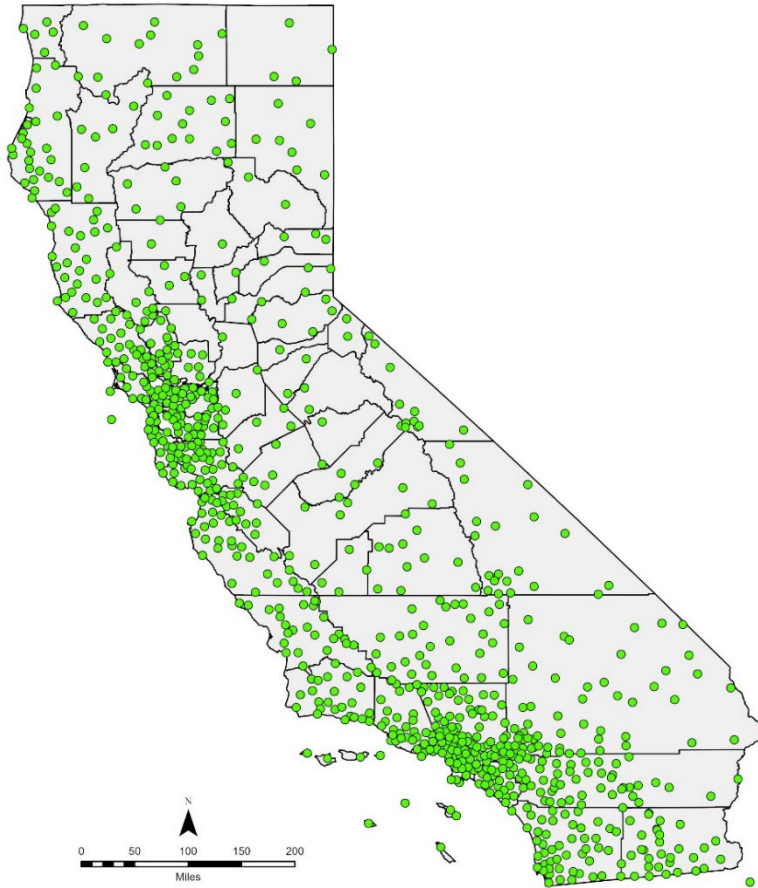
**Jose Lara, Chief, Seismic Hazards Branch**



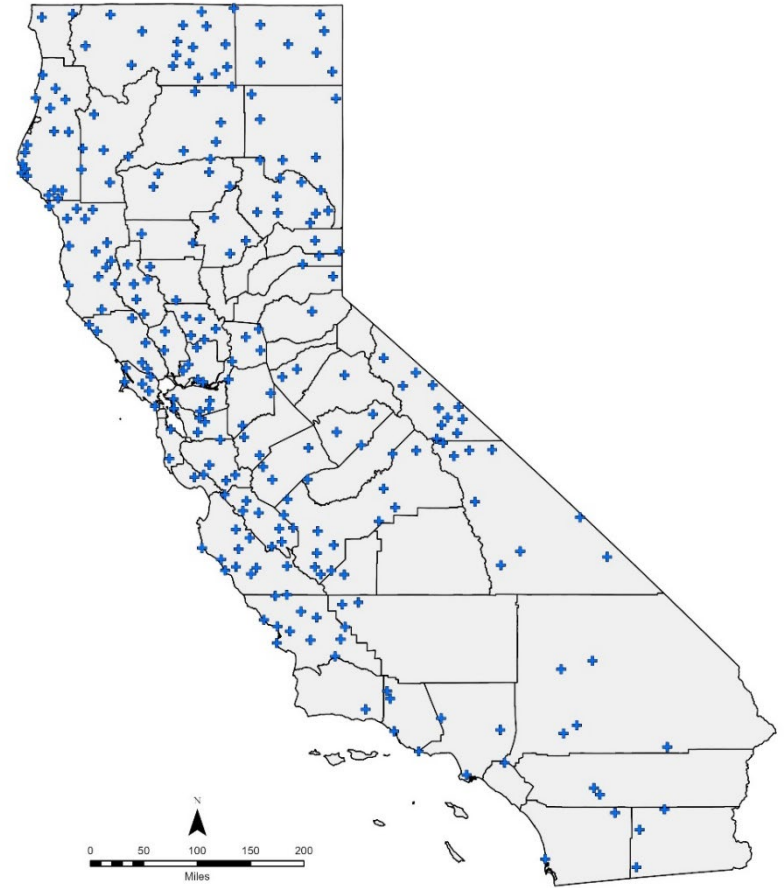


# CEEWS Network Goal of 1,115 Stations

## October 2022 Status



907 (+36) stations in CA  
contributing to Shake!lert™



208 stations to go!!



# CEEWS System Operations Overview 2016-2022



Caltech



## Sensor Build Out Status

- Completed **496** new and updated EEW/real-time stations.
- Connected **78** EEW stations to the existing State Microwave.

|  | Funded<br>New/Updated<br>EEW Stations | Completed               | Remaining  |
|--|---------------------------------------|-------------------------|------------|
| CA Geological Survey                   | 232                                   | 182 <b>(+20)</b>        | 50         |
| US Geological Survey                   | 161                                   | 119 <b>(+18)</b>        | 42         |
| UC Berkeley                            | 152                                   | 113 <b>(+29)</b>        | 39         |
| Caltech                                | 133                                   | 58 <b>(+28)</b>         | 75         |
| Department of Water<br>Resources (DWR) | 24                                    | 24 <b>(+2)</b>          | 0          |
| <b>Total</b>                           | <b>702</b>                            | <b>496 <b>(+97)</b></b> | <b>206</b> |

|  | Funded<br>EEW Microwave<br>Connection | Completed       | Remaining |
|--|---------------------------------------|-----------------|-----------|
| Public Safety<br>Communications<br>(PSC) | 332                                   | 78 <b>(+15)</b> | 254       |

\* **Blue** text in indicates performance since last EEW AB meeting.



# CEEWS Seismic Station Build Out Challenges

- COVID-19
- Obtaining New and Renewed Land-use Permits / Leases
- Equipment Delivery Delays
- Inflation

Next:

Android Integrated EEW Alerts (Google)  
ShakeAlert LtO Partners Update (USGS)



# **Research and Development**

The background of the slide features the Seal of the Commonwealth of Massachusetts. It is a shield with a blue border. Inside, there is a white silhouette of a Native American figure holding a bow and arrow. A five-pointed star is positioned above the figure's right shoulder. The shield's background is a light tan color with faint, radiating lines emanating from the top.

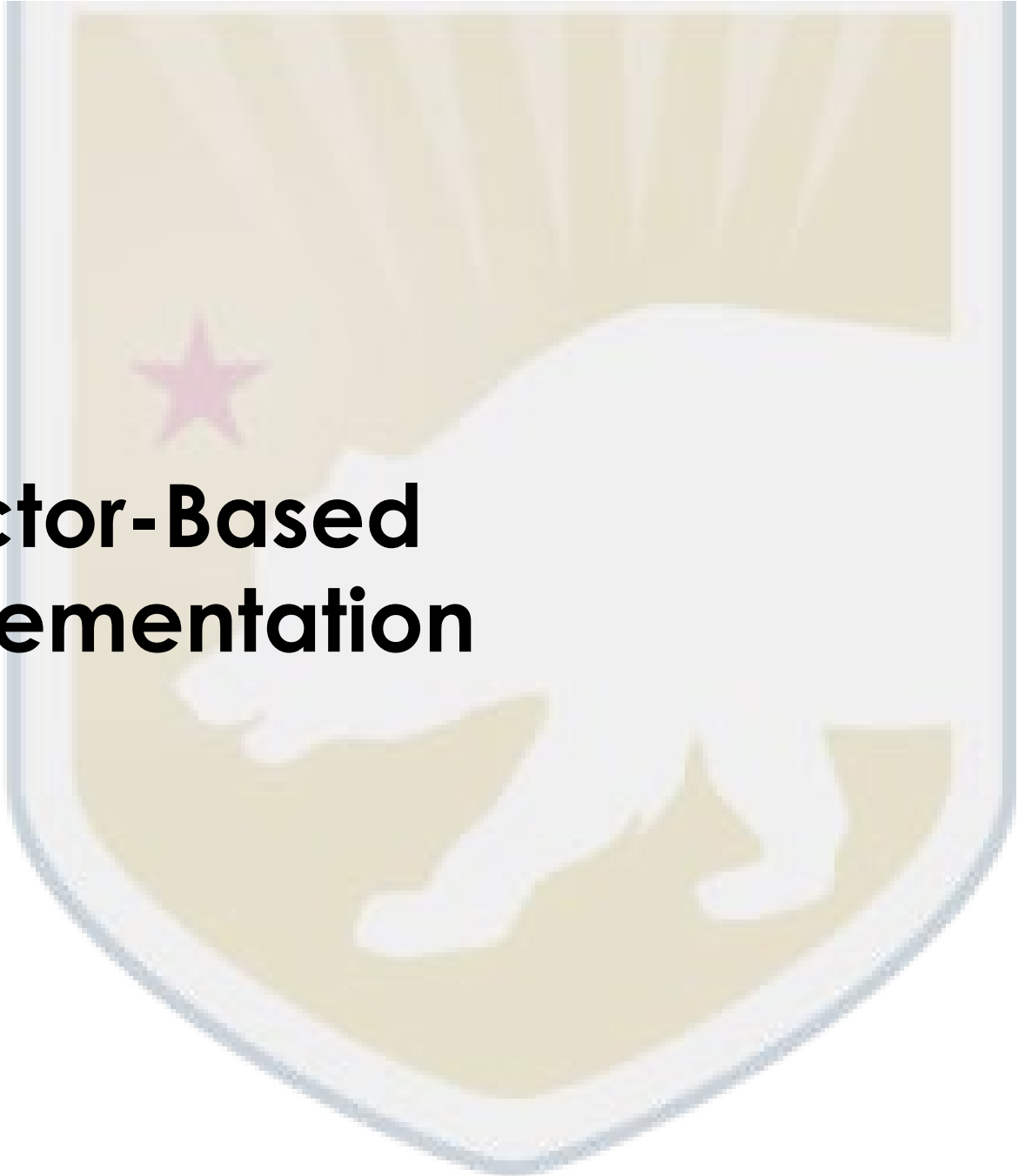
# Finance

**Lori Nezhura, Deputy Director, Planning, Preparedness & Prevention**



# 2022-23 Budget Allocation

- \$17.1 million on-going General Fund approved.
- This provides ongoing, reliable resources for core Earthquake Early Warning functions: staffing, operations, education and outreach, and research and development.
- Specifically, this includes:
  - Installation and maintenance of seismic stations
  - Dedicated Staffing
  - Telemetry
  - Continuous education and outreach
  - Research and development for new technologies that improve performance and reliability



# **Sector-Based Implementation**

**Phillip J. Labra, Seismic Hazards Branch**



# Sector-Based Implementation

*Build on the success of existing sector implementation examples and case studies to:*

1. Expand and scale up EEW users to incorporate private sector, government entities, and critical infrastructure providers.
2. Focus on automated responses/features that employ EEW technology and improve safety.
3. Outline an Action Plan and series of pilot projects with defined phases, schedule, and processes/technical assistance to scale and measure future expansion and statewide adoption.





# Sector-Based Implementation

*Will be organized by the following  
groups for phased implementation:*

1. First Responders, Transportation, and Education (K-12 and Higher Education)
2. Government Facilities, Health Care, and Utilities
3. Public Gathering Venues, Financial Institutions, Telecommunications, Factories and Manufacturing, Private Businesses, and Commercial Buildings



# Discussion

- 1) What are the challenges that constrain or delay EEW implementation?



# Discussion

- 2) Are there other sectors or sequencing that may lend to better adoption of EEW technology?



# Discussion Questions

- 3) What does implementation look like in your industry?
- With multiple seconds of warning before earthquake shaking, what automated actions could be modified or employed to improve safety and earthquake resilience?

# Education and Outreach Overview



**Yvonne Dorantes, Senior Emergency Services Coordinator**

# GREAT CALIFORNIA SHAKEOUT TOUR 2022

OCTOBER 12 - 20

## SHAKE TRAILER TOUR DATES

*October 12 - Sacramento*

*October 13 - Menlo Park*

*October 17 - San Luis Obispo*

*October 18 - Bakersfield*

*October 19 - Los Angeles*

*October 20 - San Diego*



**EARTHQUAKE  
WARNING  
CALIFORNIA**



Six Cities  
Over Six Days



Total Ad  
Equivalency  
\$879 Thousand



500+ Shake  
Simulator  
Experiences



50+ Media  
Outlets



779 Social  
Media Posts







- 74 Media Interviews (English, Spanish, Korean, Chinese)
- Stories reached Illinois, Kansas, New Mexico, and Florida.
- 466 Million Audience Reach
- 16,459 MyShake Downloads between 10/12 to 10/24.
- 500+ simulator experiences
- \$879K Ad Equivalency





# PUBLIC REACTION



"THIS EXPERIENCE HELPED ME BE MINDFUL AN EARTHQUAKE CAN HAPPEN AT ANY MOMENT. IT REMINDED ME OF EARTHQUAKES I'VE EXPERIENCED BEFORE."



"WE NEED MORE PROGRAMS LIKE THIS SO PEOPLE ARE PREPARED."



"APPRECIATE YOU GUYS, WE NEED MORE RESOURCES LIKE THIS."

"THIS EXPERIENCE GIVES ME A WHOLE NEW PERSPECTIVE FOR INTERPRETING THE NEWS REPORTS AND EMPATHY FOR PEOPLE AFFECTED."





DROP



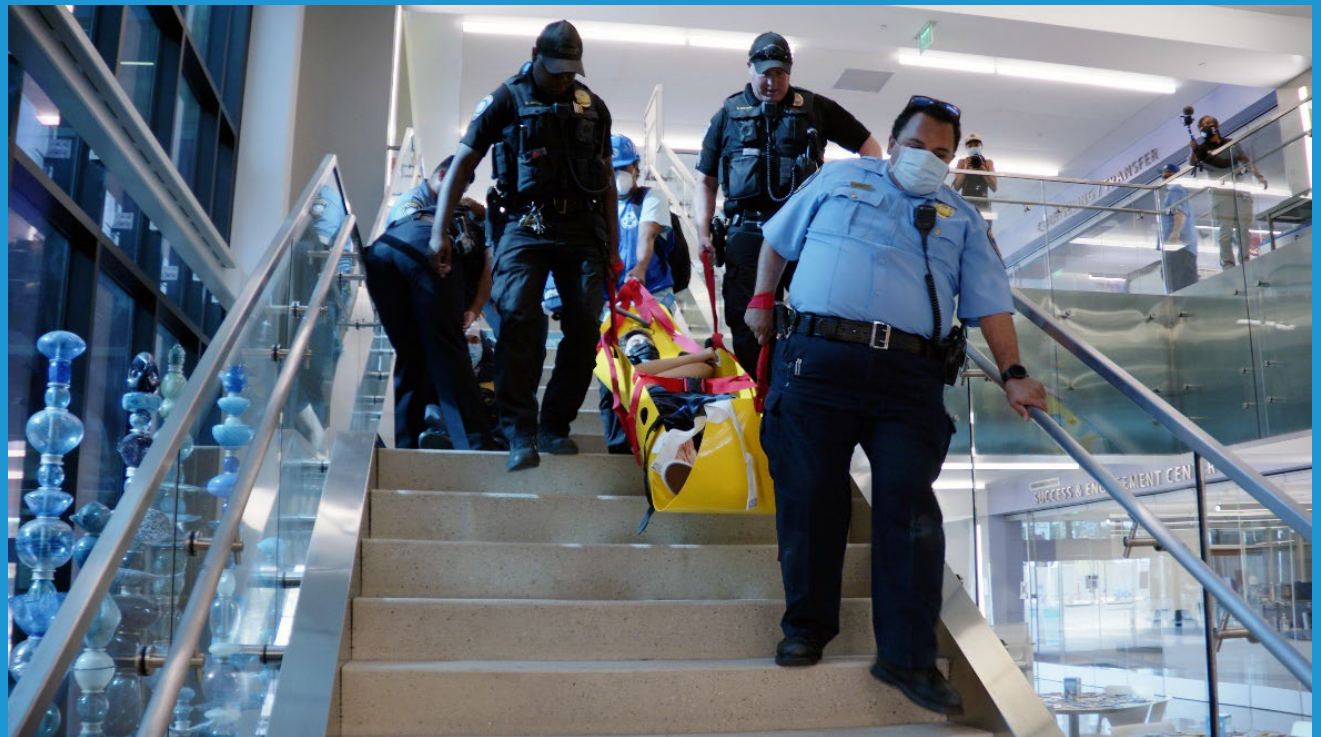
COVER



HOLD ON



The Great  
California  
**Shake  
Out**™



The background of the slide features a large, faint, light blue outline of the California State Seal. The seal depicts a grizzly bear standing on a rocky outcrop, with a red star above its head and a sunburst in the upper left corner.

# **Cal OES Director Closing Comments**



# **Advisory Board Member Closing Comments**

# General Public Comment





# Adjournment