

Welcome!

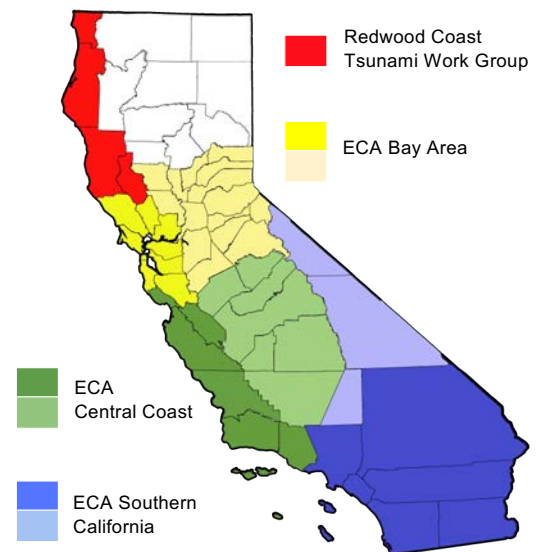


ECA Southern California Fall 2023 Workshop

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Earthquake Country Alliance

- 4000+ *Public-Private-Grassroots* leaders
- Subject matter expert *Committees* develop resources and programs
- *Regional Alliances* organize meetings and outreach activities
- California's Office of Emergency Services provides FEMA NEHRP funding for ECA earthquake mitigation activities
- USC's Southern California Earthquake Center (SCEC.org) administers ECA



Join: EarthquakeCountry.org/join



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Co-Chairs, ECA SoCal Coordinating Committee

Margaret Vinci

Caltech

Heidi Rosofsky

Global Vision Consortium

Alan Hanson

Simpson Strong-Tie, retired

EarthquakeCountry.org/socal

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ECA SoCal Coordinating Committee

Coordinating Committee Chairs:

Heidi Rosofsky (Global Vision)
Margaret Vinci (Caltech)
Alan Hanson (Simpson Strong-Tie)

Media Bureau Coordinators:

Marilyn Jimenez (LA Red Cross)

Mimi Teller

(LA Red Cross)

Participation Bureau Coordinator:
Management)

Pei Lee (Orange County Emergency

Also positions

for each county

Events Bureau Coordinators:

John Hammett & Lance Webster (Volunteers)

ShakeOut Events Coordinator:

Pauline Louie (EPA)

Communications Coordinator:

Open position

Quarterly Workshops Coordinator:

Open position

Membership Coordinator:

Open position

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Today's Agenda

Welcome from the ECA SoCal Chairs

Alan Hanson (Simpson Strong-Tie, retired)

Heidi Rosofsky (Global Vision Consortium)

Margaret Vinci (Caltech)

2023 ShakeOut Debrief: Statewide Results, Key Events, and Open Sharing

Heidi Rosofsky (Global Vision Consortium)

Seismic Hazards Information and Resources from the California Geological Survey

Brian Olson (California Geological Survey)

Earthquake Early Warning / Quake Break

Gabrielle Tepp (Caltech)

ECA SoCal 2023 Mini Awards Presentations

Mini Awards Recipients

Northridge Earthquake 30th Anniversary

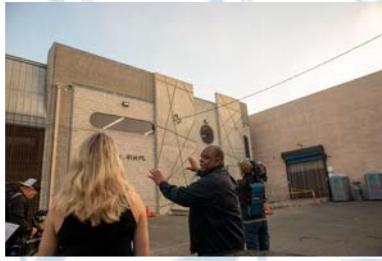
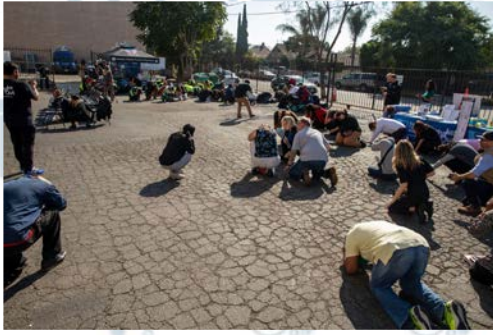
Mark Benthien (SCEC/ECA)

Open Discussion, Sharing, and Networking

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2023 ShakeOut Debrief: Statewide Results, Key Events, and Open Sharing

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**Shake
Out**

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Q&A

To be notified of future events and recordings, join ECA (free!):
EarthquakeCountry.org/join

Please take our survey:
SurveyMonkey.com/r/WZN87Y5

Questions?
info@earthquakecountry.org

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Seismic Hazards Information and Resources from the California Geological Survey

Brian Olson

California Geological Survey

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California
**Department of
Conservation**
California Geological Survey

Seismic Hazard Information and Resources from the California Geological Survey

Brian Olson

Senior Engineering Geologist
California Geological Survey
brian.olson@conservation.ca.gov



Earthquake
Country
Alliance

ECA SoCal Fall 2023 Workshop
December 5, 2023

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The California Geological Survey



- The most geologically diverse and the second most seismically active state in the USA.
- **Mission:** The California Geological Survey provides scientific products and services about the state's geology, seismology and mineral resources, including their related hazards, that affect the health, safety, and business interests of the people of California.
- One of the oldest geological surveys in the nation
- Produce more products and services to more people than any other state survey.



California Geological Survey | conservation.ca.gov/cgs

The California Geological Survey

CGS HAS SIX PRINCIPAL TECHNICAL PROGRAMS

- Seismic Hazards
- Regional Geologic and Landslides Mapping
- Mineral Resources
- Forest and Watershed Geology
- Strong Motion Instrumentation
- Burned Watershed Geohazards

California Geological Survey | conservation.ca.gov/cgs



Seismic Hazards Program

The SHP delineates areas prone to ground failure and other earthquake-related hazards, including:

- Surface fault rupture, and
- Soil Liquefaction (the failure of water-saturated soil)
- Earthquake-induced landslides
- Tsunami inundation

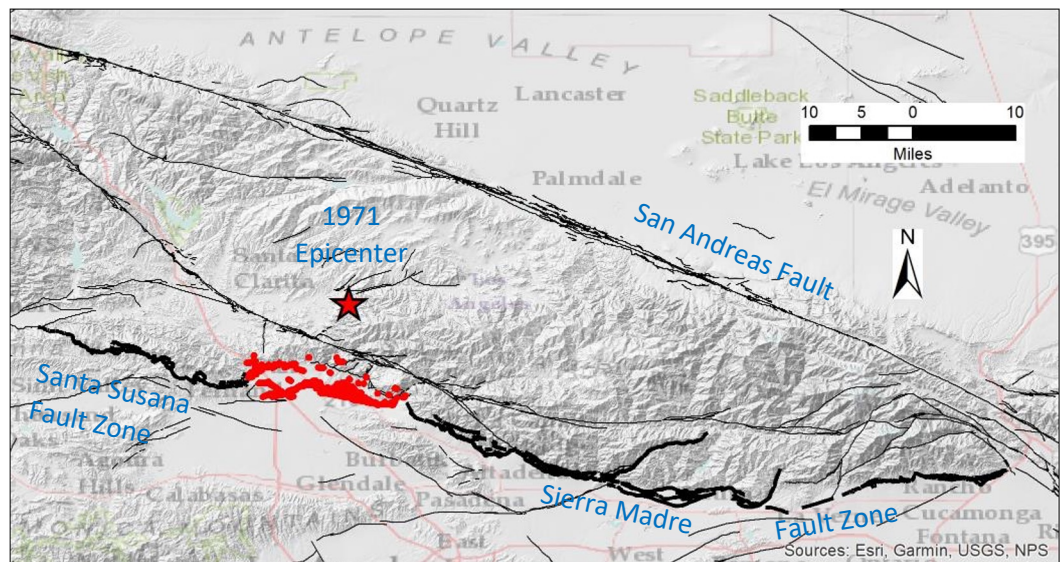
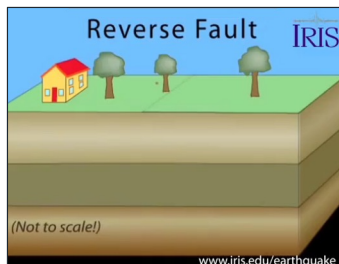


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1971 San Fernando Earthquake



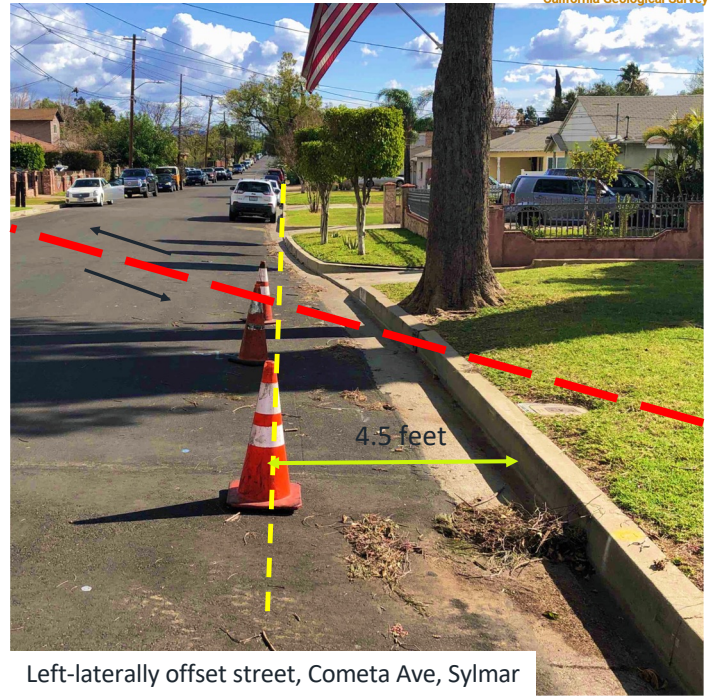
- Date: Tue Feb 9, 1971
- Magnitude: 6.6
- Deaths: 64
- Damage: ~\$500 million
- Moved ground up or shifted sideways up to 6.5 feet!



California Geological Survey | conservation.ca.gov/cgs

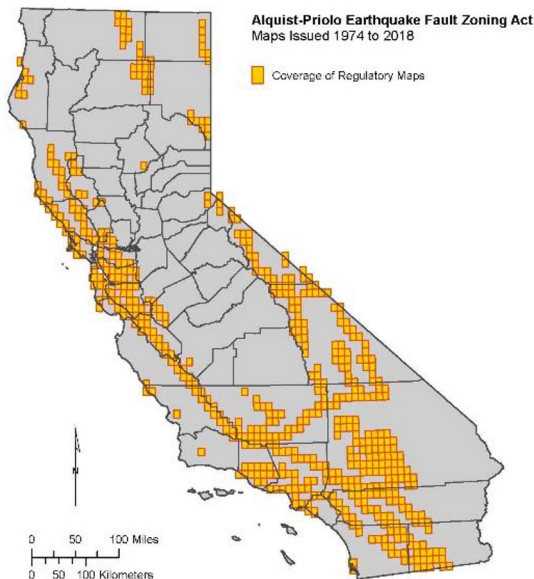
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Surface Fault Rupture



Left-laterally offset street, Cometa Ave, Sylmar

Surface Fault Rupture



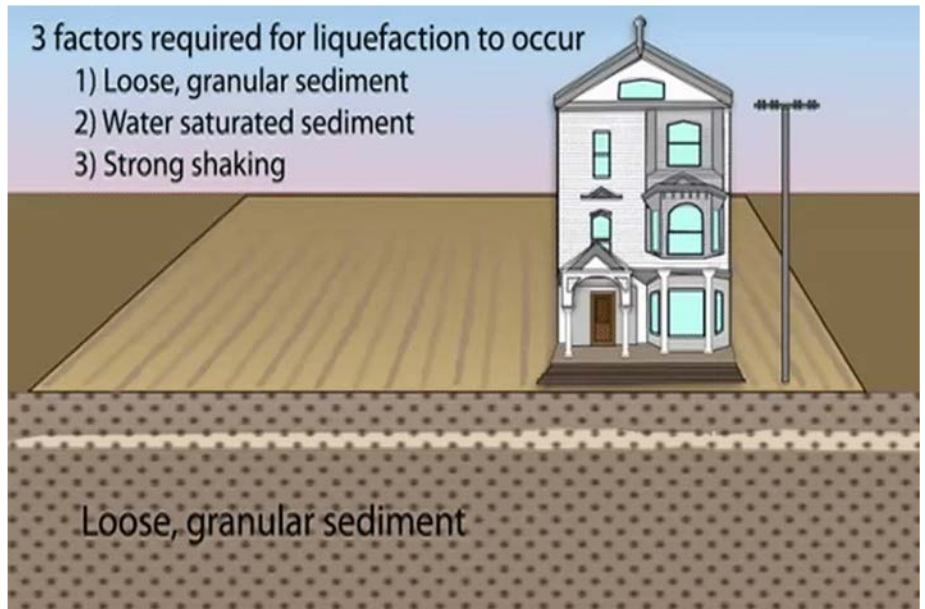
Liquefaction

Temporary strength loss in saturated sands/silts due to earthquake shaking

It requires:

- Loose sand, silt, or gravel
- High groundwater (<50' deep)
- Moderate to strong ground shaking (~M5.5+)

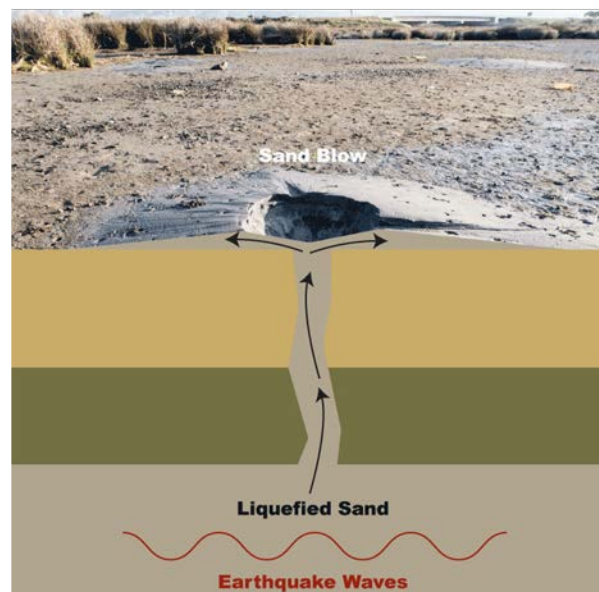
Most common near rivers, lakes, low-lying marshy areas.



Liquefaction

Commonly seen as “sand boils”

- Pressurized, saturated sand is ejected out of the ground
- Loss of sand to the surface results in ground settlement



Earthquake-Induced Landslides

Downhill movement of ground caused primarily by gravity acting on weakened rock or soil.

It requires:

- Steep slopes
- Weak geologic materials
- Moderate to strong ground shaking (~M5.5+)



California Geological Survey | conservation.ca.gov/cgs

Seismic Hazard Zones

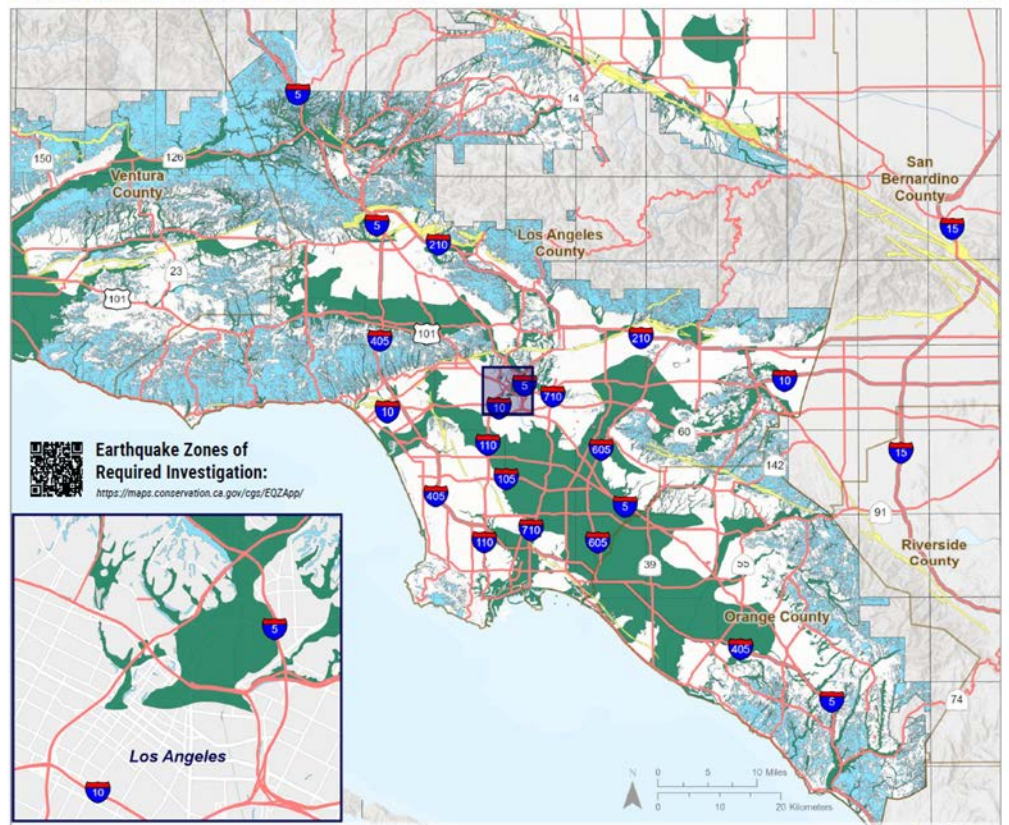
Zoning work began in 1997

Initially focused on the LA Basin and San Francisco Bay area

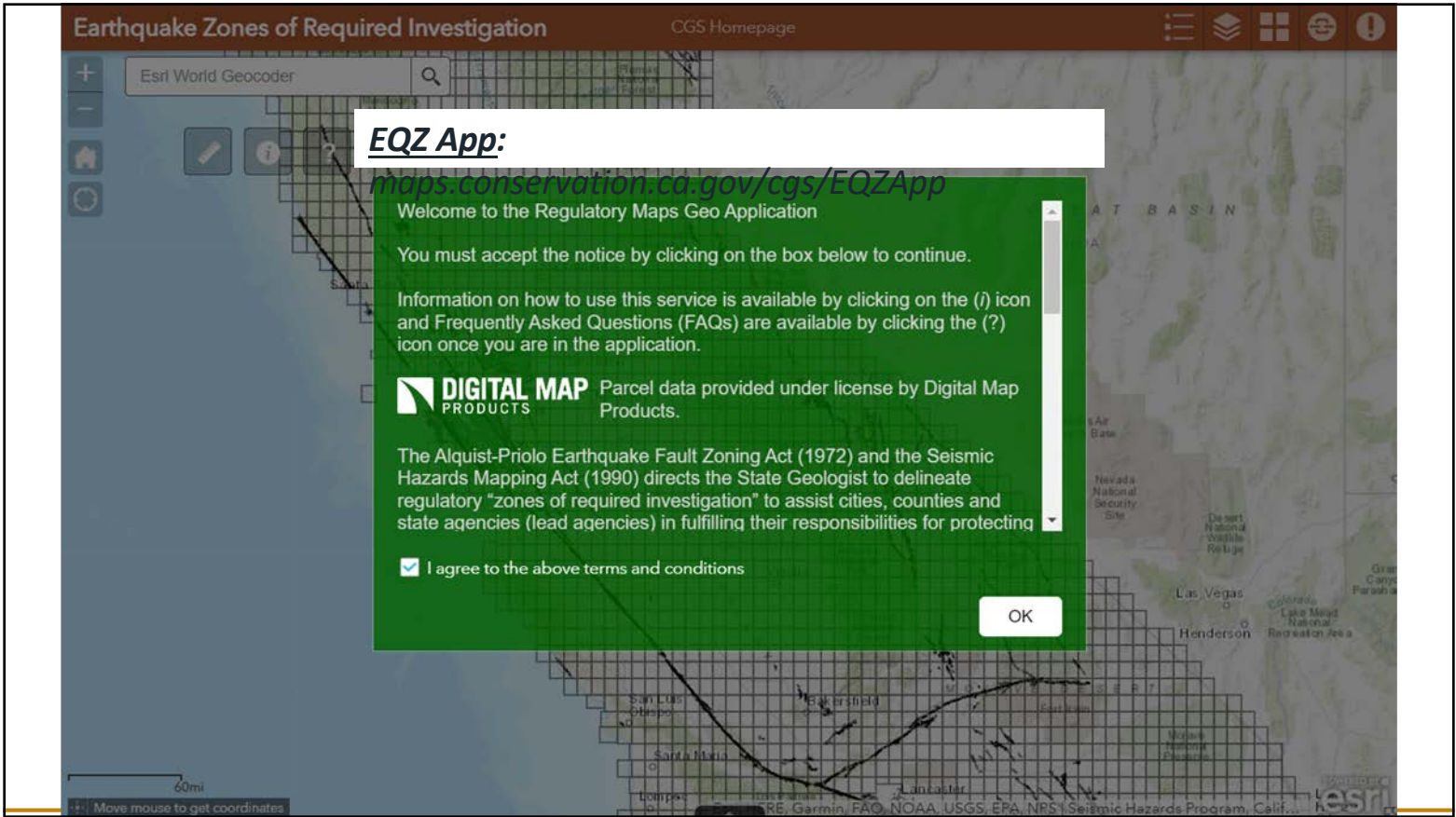
Currently, CGS has only evaluated ~5% of California for Seismic Hazard Zoning

Seismic Hazard Zonation of Southern California

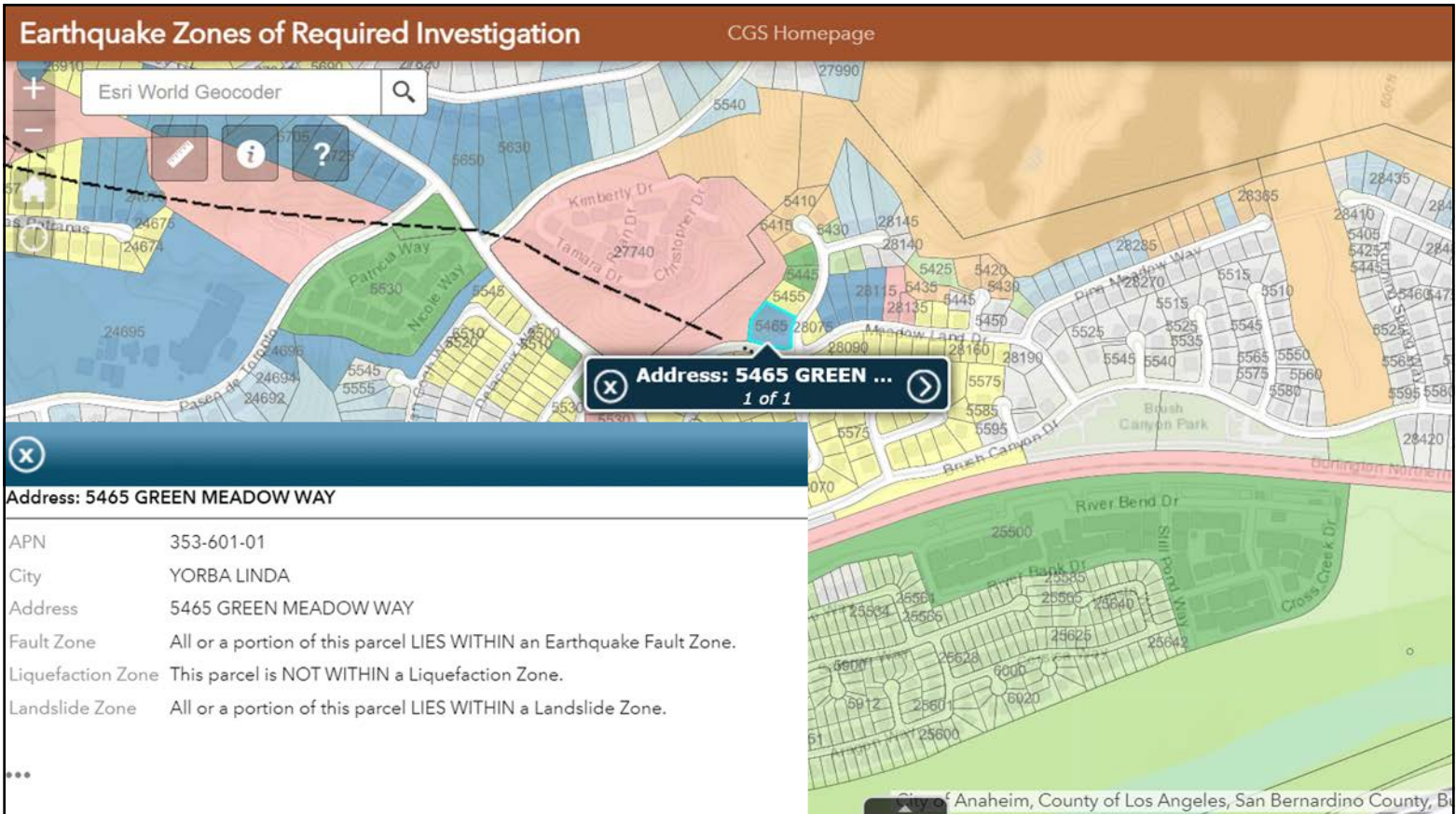
Current as of January 2023



California Geological Survey | conservation.ca.gov/cgs



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California
**Department of
Conservation**
California Geological Survey

THANK YOU

Questions?

Brian Olson
Brian.Olson@conservation.ca.gov

 @CAGeoSurvey

 @CAGeoSurvey

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Q&A

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Quake Break: So Cal Seismic Activity

Gabrielle Tepp
Caltech

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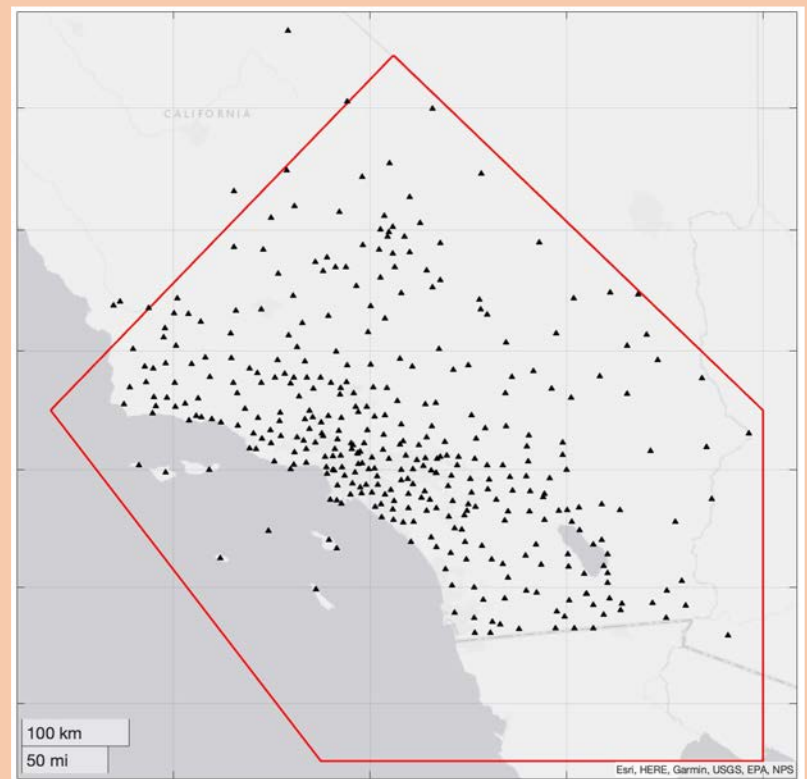
Quake Break –
Southern California
September – November 2023

Gabrielle
Tepp

SCSN/Caltech

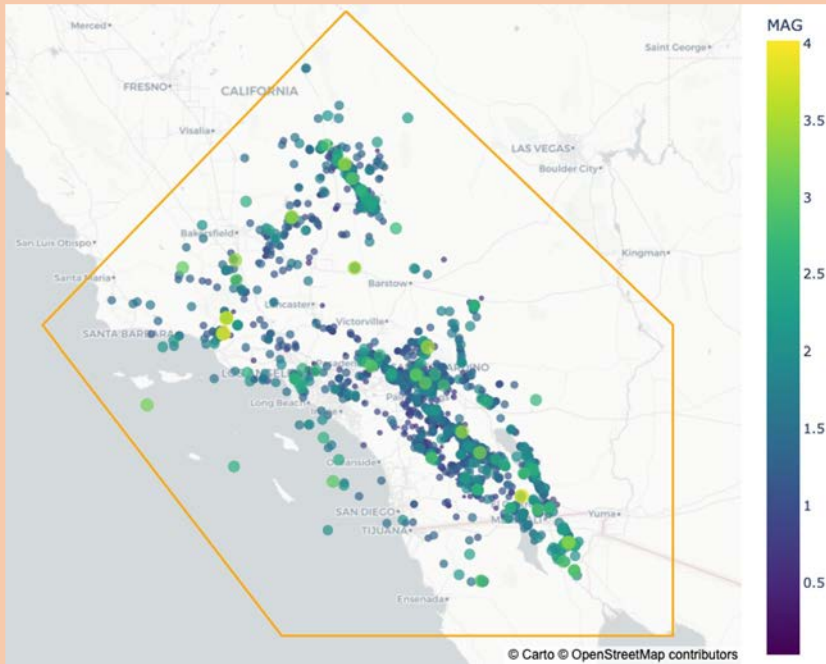


Caltech



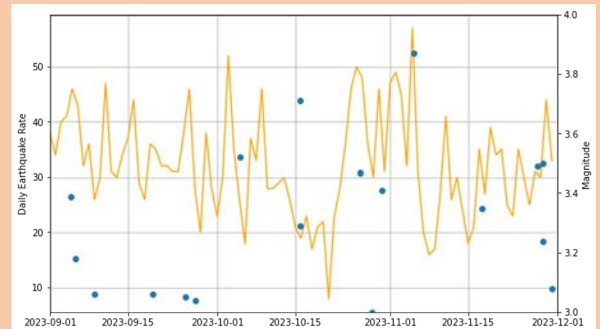
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This quarter in Southern California there were:



2,779 earthquakes + 166 quarry blasts
 M>2 – 225
 M>3 – 22
 M>4 – 1

10/04/23 - M3.5 - NNW of Boron, California
 10/15/23 - M3.7 - NE of Ojai, California
 10/26/23 - M3.5 - NE of Little Lake, California
 11/03/23 - M4.0 - ESE of Ojai, California
 11/04/23 - M3.9 - W of Imperial, California
 11/27/23 - M3.5 - SE of Bodfish, California
 11/27/23 - M3.5 - NE of Big Bear City, California



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M5.1 Ojai Sequence (August 20)

This quarter there were ~30 aftershocks.

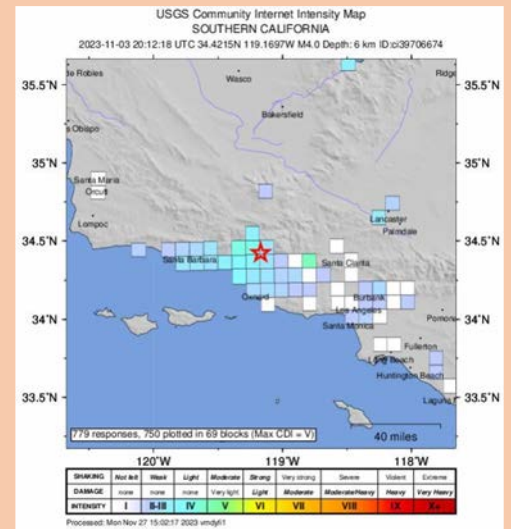
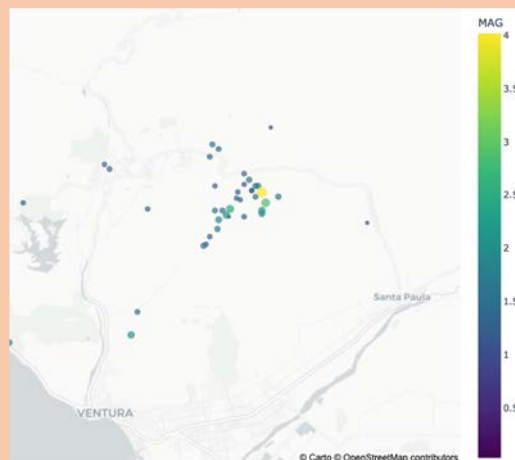
Most notably:

11/03/23 - M4.0 – 7 km ESE of Ojai, CA

In total, this sequence has had

~20 foreshocks

~270 aftershocks



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Q&A

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ECA SoCal Mini 2023 Recipients

Beyond Prepared

City of Norwalk Emergency Management

City of Los Angeles Parks and Recreation

Menifee School District

Redlands Fire Department

Imperial Valley College

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ECA Mini Awards

- **Purpose:** provide materials for ECA member projects that improve earthquake resilience by promoting mitigation, awareness, and preparedness, and multiply impact of programs
- **Purchases:** \$500 to \$1000 each
- **Eligibility:** Proposals for earthquake mitigation and education activities
- **Pre-defined packages:** Sets of materials will be available, however you can also customize them or propose other items
- **2024 Awards:** Apply in mid-January @ EarthquakeCountry.org/miniawards



Secure **WORKPLACE \$500 Package**

ITEM #	ITEM NAME	IMAGE	QUANTITY
4160-64	Furniture Strap		15
4740	File Cabinet Strap		15
5040	Bookcase Strap		15
4173	Home Electronics Safety Strap, Black		30
4338	A-Maze-ing Picture Hook, 4 Pack		10
4250	Kitchen & Cabinet Door Latch, 4 Pack		10
88111	QuakeHOLD! Museum Putty		10

Beeyond Prepared

Patricia Gonzalez



Earthquake
Country
Alliance

2023
MINI AWARDS

--Secure My Space --

Young Visionaries
Youth Leadership Academy
Community Center Winners



PURPOSEFUL PREPARATION & SAFETY EDUCATION





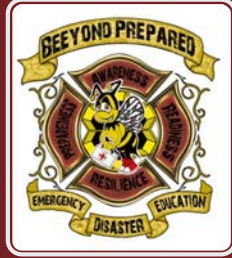
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Alliance



THANK YOU



City of Norwalk Office of Emergency Mgmt.

John Cruz and Valeria Marrufo



City of Norwalk Office of Emergency Management



The Office of Emergency Management’s mission is to provide our community with the necessary resources to prepare, respond, and recover from any disaster.

OEM is actively achieving its goals by training city employees on emergency response, acquiring and distributing essential equipment, and making emergency preparedness information accessible to all of Norwalk.

Since June 2023, OEM has reached around 15000 community members through meaningful interactions at school assemblies and city events.

Ready for Anything

ECA Project

Norwalk’s Office of Emergency Management (OEM) collaborated with school staff to distribute the “Rocket’s Earthquake Safety” activity book. Students initiated the activity book at school and completed it at home with their family. Once completed, students showed their teacher the activity book and received a reward (sticker/glowstick) provided by OEM.

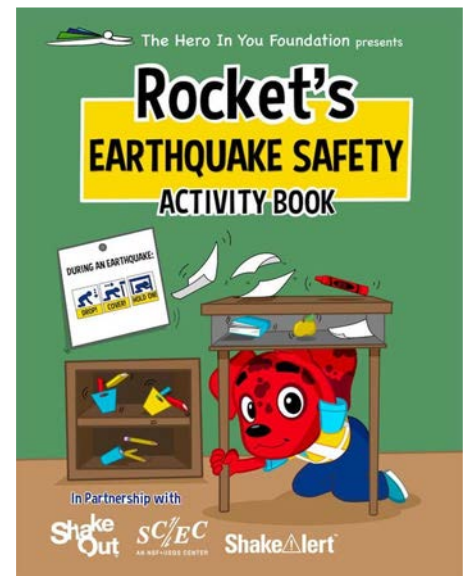
GOAL:

Help educate students on:

- Dangers of earthquakes at an age-appropriate level
- Reducing the risk of injury during an earthquake

AND

Grant families and schools an opportunity to reevaluate their preparedness plan





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Summary

Through fun activities, students learned how to stay safe during an earthquake. Students also learned how to identify potential earthquake hazards in their homes and classrooms. By encouraging family participation, the project helped families establish an emergency plan and assign roles in case of a disaster. Furthermore, the project granted teachers an opportunity to remind students of the procedures during and after an earthquake.

The project benefitted elementary students in Norwalk. The school district's demographics primarily consist of 80% Hispanic students, 8.7% White students, and 3.9% Asian students. Most of Norwalk's elementary schools form part of the Title 1 program, which aims to help disadvantaged groups achieve higher academic goals.

Stats:
3 Schools
981 Students
82% Completion Rate

City of Los Angeles Parks & Recreation

Monica Gonzalez
Emergency Management Coordinator



City of Los Angeles

Department of Recreation and Parks

Emergency Management Division

As the Mass Care and Sheltering Lead for the City of Los Angeles, the Emergency Management Division works to coordinate and provide shelter services for Angelenos that may be displaced due to local emergencies and catastrophic disasters.



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Secure Your Space Package

The City of Los Angeles Department of Recreation and Parks Emergency Management Division was awarded 15 furniture strap kits, 15 file cabinet straps, 15 3-pack bookshelf straps, 30 electronics straps, 10 4-pack A-Maze-ing Picture Hooks, 10 4-pack cabinet door latches, 10 packets QuakeHold! putty, museum wax, 2 gas shut off wrenches, 10 2oz Museum Wax containers, 1 large appliance strap.



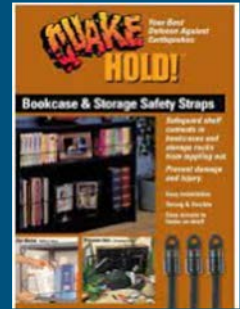
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Mini Award Plan

The Emergency Management Division distributed the award by allocating 15 kits, each of which was provided to senior centers across the city. Each kit contained essential items for securing wall art, bookshelves, bulletin boards, and televisions.

The Emergency Management Division conducted multiple presentations on earthquake preparedness, offering valuable resources on how to prepare, create a plan, and stay informed in case of an emergency.

Recreation Facility Managers continue to work on emergency plans with their members.



City of LA Senior Pictures



Thank you ECA

Since receiving this award we've initiated a workshop focusing on personal preparedness for senior citizens throughout the city, enhancing the resilience of our vulnerable population.



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Menifee Unified School District

Kara McGee

Director of Risk Management & Benefits

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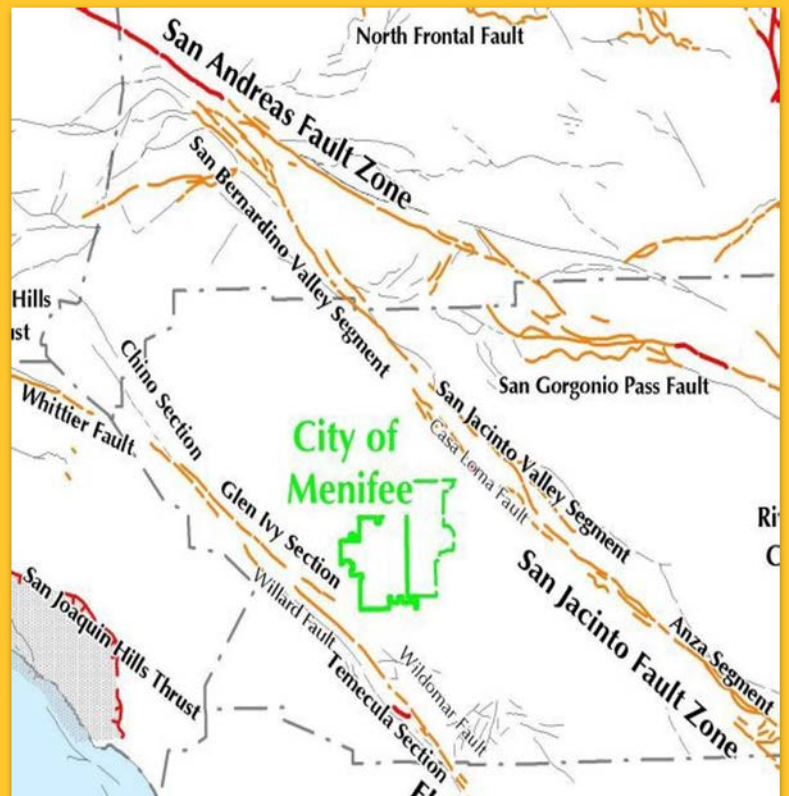
EARTHQUAKE COUNTRY ALLIANCE MINI AWARD PROGRAM



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MUSD & Surrounding Area

- Southwest Riverside County
- K-8 district
- 2023-2028: 4-5 new schools
- Geography
 - Bounded by the San Andreas fault zone on the east and extends offshore to the west
 - northern part of the Peninsular Ranges Geomorphic Province, which is characterized by northwest-trending mountains and valleys extending from the LA Basin on the north southeast into Baja CA



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ECA Mini Award & Implementation of Ergonomics and Safety Manager Workplace Package

- At multiple school sites and offices we have implemented:
 - furniture strap kits
 - file cabinet strap kits
 - picture hooks
 - large appliance/refrigerator straps



Thank
you!

Redlands Fire Department

Esther Martinez

Emergency Operations Specialist

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Redlands Fire Department

The Redlands Fire Department Emergency Management Division is the division that promotes preparedness for all major emergencies and disasters that may occur in our community.

We participate in over 35 community events to prepare for and educate the community in all disasters that may occur in our community.

The city of Redlands sits over 7 faults that may at any time cause a major earthquake.

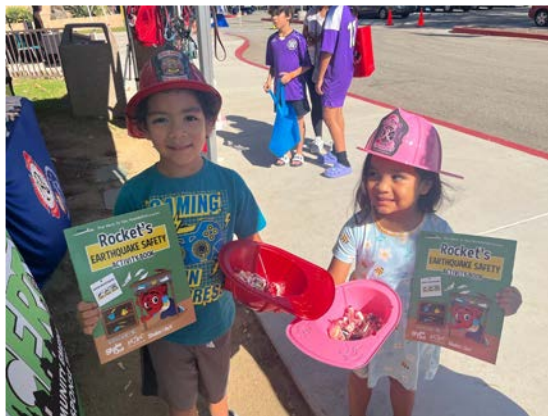
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Project

Coloring books will be shared with children in the community at various events. By having children receive the books, we hope that not only would they wish to color and learn the things that they need to learn about earthquakes, but also make conversation with their parents about how to prepare for a major earthquake.

The two events that we will make sure to have the materials will be at the Redlands Fire Department Open House, and the San Bernardino County Museum Great ShakeOut event.

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Imperial Valley College

Ivan Guillen
Campus Safety Specialist

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The screenshot shows a Beamer presentation slide. The main slide features a white box on the left with the text "Earthquake County Alliance" and "IMPERIAL VALLEY COLLEGE" below it. To the right is a photograph of a green chalkboard with a black mesh pencil holder containing several green pencils on a wooden desk. The Beamer interface includes a top bar with "SHOW TASKBAR", "DISPLAY SETTINGS", and "END SLIDE SHOW". A video player at the bottom shows "0:00:40" and "10:48 PM". A right sidebar shows a "Next slide" preview of a slide titled "IMPERIAL VALLEY COLLEGE" with "EST. 1960" and "Central Junior College in 1922". Below the preview is a "No Notes" section. Navigation icons for back, forward, and search are visible at the bottom.

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Q&A

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Questions?

info@earthquakecountry.org

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Northridge Earthquake 30th Anniversary

Mark Benthien

Southern California Earthquake Center (USC)

ECA Executive Director

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Northridge 30th Anniversary Campaign

- SCEC/ECA is leading the development of a comprehensive educational campaign to commemorate the 30th anniversary of the 1994 Northridge earthquake.
- Purpose: increase awareness about earthquake hazards, encourage preparedness and mitigation, and inform about self-protective actions and response skills.
- Grant funding and sponsorships being requested, including:
 - California Seismic Safety Commission
 - Cal OES (Jan 20 event being planned for Northridge)
 - Other public/private partners.
- Cornerstone will be large “Quake Heroes Expo” events.
- The campaign will continue through December 2024



Quake Heroes



- Stories of people who experienced the 1994 Northridge earthquake in Los Angeles, and how they helped others
- Key moments tied to the *Seven Steps to Earthquake Safety*
- Scientists and engineers share how they informed the public about what happened, and learned key lessons for reducing future losses (tuck-under parking buildings are featured)
- Encourages viewers to become trained (CERT, CPR, etc.) so they are prepared to help others
- A model for communicating risk and motivating whole community preparedness and mitigation
- Production sponsored by FEMA, NSF, USGS, Structural Engineers Association of Southern California, Simpson Strong-Tie, Hero in You Foundation, Safe-T-Proof, and others



RETROSPECTIVE INTERVIEWS



ARCHIVAL NEWS FOOTAGE



CINEMATIC RE-ENACTMENTS

THE REAL-LIFE HEROES OF OUR FILM



MIKE
Photographer

A photographer who risks his life to rescue several trapped neighbors, one of whom he ends up marrying. He becomes an overnight celebrity, praised for his heroics, and meets the president.



ANA
Nurse

An off-duty nurse who is trapped in an apartment with her daughter until a neighbor kicks down their door. She then leaves to help evacuate the patients of a badly damaged hospital.



JOE
Reporter

The only reporter in LA to go live on-air within seconds of the shaking. His first time ever anchoring, Joe sets a TV ratings record, then goes into the field to report on major incidents.



LARRY
Fire Battalion Chief

The Los Angeles County Fire Battalion Chief who acts as his department's eyes-in-the-sky from a helicopter: surveying damage, directing search teams and updating command center.



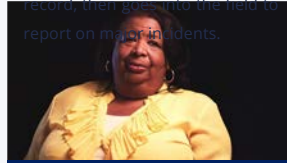
BUFFY
Art Therapist

A young newlywed who has trouble finding clothes after the quake jolts her awake. She helps free several trapped neighbors, comforts the grieving, and is featured on *World News Tonight*.



REY
Firefighter EMT

An EMT who crawls into a collapsed parking structure to care for a man who is pinned under concrete. The eight-hour rescue is broadcast on live TV and is complicated by aftershocks.



JACKIE
Reverend

The director of outreach for one of the largest churches in LA. She leads a major long-term recovery effort for those affected by the quake within the Inglewood/South Central community.



KEN
Geoscientist

A young scientist who experiments with GPS technology to map earthquakes. He is able to use this new science to model the fault rupture faster than seismic data, for the first time ever.

2023 Quake Heroes Events

- International Association of Emergency Managers (Region IX) Conference (Garden Grove, March)
- Featured (by invitation) at FEMA's 25th Annual Emergency Management Higher Education Symposium (Maryland, June)
- Shared at the International Association of Emergency Managers conference (Long Beach, November)
- **YMCA Westchester Quake Heroes Expo (December 1)**

QUAKE HEROES

★ WESTCHESTER FILM PREMIERE & EXPO ★

FRIDAY, DECEMBER 1
6PM - 9PM

Westchester Family YMCA Annex
8020 Alverstone Ave
Los Angeles, CA 90045

Scan the QR Code to Register!

Watch an inspiring film based on true stories!
Ride an earthquake simulator!
Discounts on earthquake preparedness supplies!
Sign up for safety trainings!

the Y | SC/EC | Watch the Trailer | RS

Quake Heroes Expos

- Screenings for large groups
- May include panel discussion before the film with local leaders, scientists, engineers, etc.
- After viewing the film, attendees can immediately take actions at a *Seven Steps to Earthquake Safety* resource and information fair where they can:
 - register for CERT and other trainings
 - Receive free or low-cost disaster supplies and earthquake safety fasteners
 - learn about earthquake insurance and retrofitting
 - sign up for alerts
 - experience an earthquake simulator
- Learn more and schedule a discussion at [QuakeHeroes.org](https://www.quakeheroes.org)!



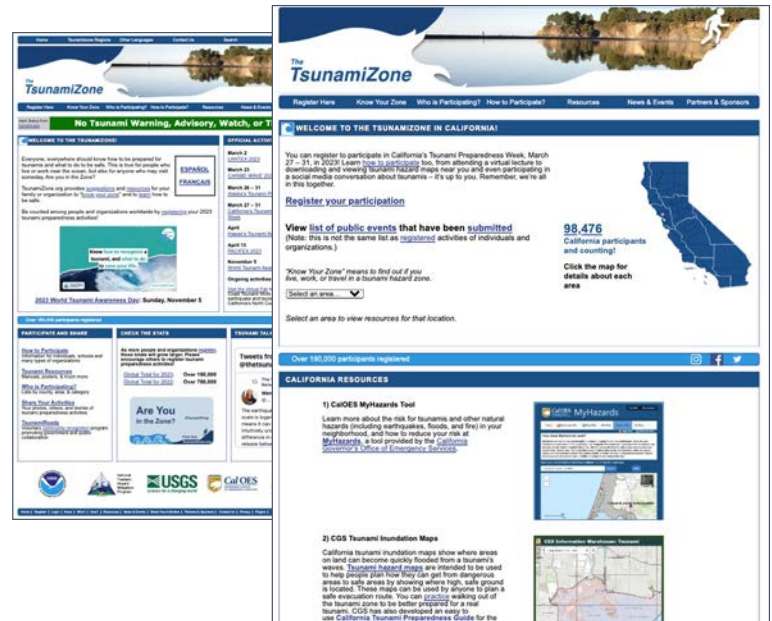
NR30: Key Components



- **Quake Heroes Expos** (many events across SoCal and statewide, planned with diverse and vulnerable communities (seniors, low-income neighborhoods, in multiple languages) as well as for businesses, faith-based organizations, community centers, government agencies, etc. Each event will feature our motivational film and a preparedness fair with booths for each of the *Seven Steps to Earthquake Safety* (including sign-ups for free trainings and free or low-cost supplies). Interested? Visit [QuakeHeroes.org](https://www.quakeheroes.org).
- **Additional Quake Heroes Film Screenings** (smaller venues with essential resources for preparedness - LA County libraries, etc.
- **Structural Engineers Association planning Symposium at Caltech on January 17**
- **Northridge 30th Anniversary Commemoration on January 17, 2024** (Major public and media event, possibly at CSUN with surrounding communities)
- **"Seven Steps" Presentations** (to community groups, houses of worship, small business associations, etc., in multiple languages, covering earthquake preparedness, mitigation, and response).
- **Social Media Toolkit** (Development of a multi-lingual comprehensive social media toolkit for partner organizations to promote campaign messaging).
- **News Media Outreach and Coverage** (Press releases about Campaign activities and earthquake-related topics and to generate additional public awareness).
- **Presentations/Booths** at sector-based conferences and other venues
- **Evaluation of key activities**

California Tsunami Preparedness Week

- March 23-31, 2024
- Activities coordinated locally across the state
- Register your activities, similar to ShakeOut participation.
- Hold a "Tsunami Walk"
- Become a TsunamiReady Community
- Many ways to participate!



TsunamiZone.org/california

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Q&A

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Questions?
info@earthquakecountry.org

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Short Announcements from Attendees

Please take our brief survey about today's workshop:
SurveyMonkey.com/r/WZN87Y5

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Open Discussion & Networking

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SurveyMonkey.com/r/WZN87Y5

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What is something that you:
learned
will do
will use
will tell others

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Connect with ECA SoCal

- EarthquakeCountry.org/socal
- socal@earthquakecountry.org
- Terremotos.org
- Twitter.com/eca
- info@earthquakecountry.org



Please take our brief survey about today's workshop:
SurveyMonkey.com/r/WZN87Y5

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