

EERI Response to South Napa Earthquake & Future Southern CA Earthquakes

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California Earthquake Clearinghouse Information
Collection Discussion

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Who is EERI?

- Earthquake Engineering Research Institute
- Technical Membership Society
- Nonprofit
- National (with some international members)

EERI's mission is to reduce earthquake risk by:

1. advancing the science and practice of earthquake engineering
2. improving understanding of the impact of earthquakes
3. advocating comprehensive and realistic measures for reducing earthquake effects

EERI Members include:

- Geoscientists: Geologists, Seismologists
- Engineers: Structural, Geotechnical, Civil, Transportation & Lifelines
- Architects/Planners
- Social Scientists
- Public Officials

who work as:

- researchers
- scientists
- practicing professionals
- professors/educators
- government officials
- building code regulators

EERI Members = Subject Matter Experts

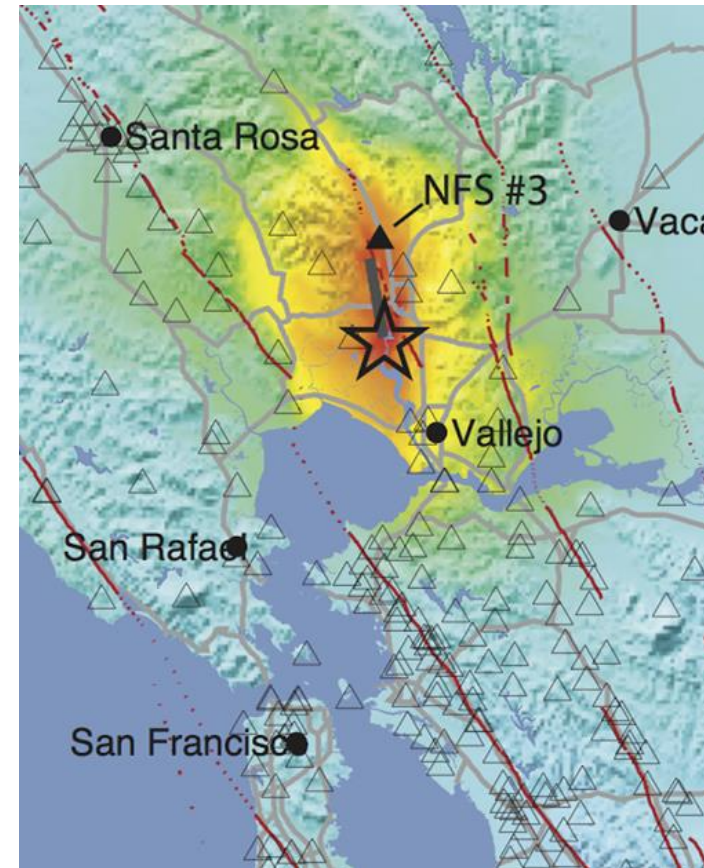
EERI's Reconnaissance History: Learning from Earthquakes Program

- EERI has been conducting organized post-earthquake reconnaissance and data collection since the 1960s
- Visits by EERI teams to over 300 earthquakes worldwide
- Results & data at www.eeri.org/lfe
 - Earthquake photo galleries
 - Earthquake reports



M6.0 South Napa Earthquake

- Sunday August 24
- Physical Clearinghouse at Caltrans facility in Napa
- Virtual Clearinghouse website
- Nightly briefings Aug 24-26



California Earthquake
Clearinghouse



GOVERNOR'S OFFICE
OF EMERGENCY SERVICES

Participants & Teams

- Over 100 visitors visited physical clearinghouse and attended its briefings from Sunday Aug 24 - Tues Aug 26
- Represented 40+ organizations including:

ABAG	Degenkolb	Maffei Structural Engineering	SGH
AMEC	Ebaa Iron	Miller Pacific Co	Simpson Strong-Tie
Arup	EERI	OMR/DOC	SPA
BFP Engineers	Exponent	OSU	Stanford/EERI
Caltrans	FEMA	Partner ESI/EERI	State Farm
California Earthquake Authority	Fugro	PEER & UC Berkeley	Tipping Mar
California OES	GEER	PG&E	TTG
Cal Poly	GEI Consultants	RMS	UC Davis
CGS	Holmes Culley	SEAOC	USACE
CSSC	Kleinfelder	SFSU	USGS

EERI's Role in South Napa

- 6-8 EERI staff helped operate the Physical Clearinghouse along with Anne Rosinski
- Ensured that virtual clearinghouse was live by 3pm on Aug 24 & regularly updated
- Updated CA Eq Clearinghouse website & sent email messages
- Coordinated & directed subject matter experts who arrived at clearinghouse wanting to help
- Disseminated lessons: Briefing & EERI Report
- Helping draft CH After Action Report
- Maintaining archive of virtual clearinghouse and collected multidisciplinary data

Clearinghouse Success for Napa Eq

- **Overflight Coordination**
 - With support of CHP flew multiple flights to acquire imagery on Sunday and Monday
- **LiDAR**
 - Coordinated a coalition to acquire high accuracy imagery in the most critical areas(USGS,CGS,DWR,PEER/GEER)
- **Nightly briefings to share findings research community, SOC, REOC, & FEMA Region 9**
- **Multidisciplinary Data Sharing & Field Coordination**
- **Virtual Clearinghouse Website & Data Map**
 - 1500 visitors in first 4 days.

Virtual Clearinghouse Website

SOUTH NAPA, USA EARTHQUAKE CLEARINGHOUSE

M6.0 AUGUST 24, 2014 AT 10:20:44 UTC

A Product of the California Earthquake Clearinghouse



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Welcome to the South Napa, USA Earthquake Clearinghouse

Materials on this site and on the data maps may be used with proper attribution (CA EQ Clearinghouse/Name of Individual or Organizational Contributor) for non-commercial uses. Questions, contact EERI at eeri@eeri.org.

Earthquake Data Map

All information shared with the Clearinghouse is being collected and visualized at: [ARCGIS ONLINE DATA MAP](#)

Submit Data

Add data while in the field using the [Clearinghouse Field Notes Application](#) or when you have returned from the field, [upload photos using our various tools](#).

Search for:

Search

UPDATES

Now available for download: [EERI Special Earthquake Report on the South Napa Earthquake](#)

Watch the recording of the [EERI and PEER for the South Napa Earthquake Reconnaissance Briefing](#)

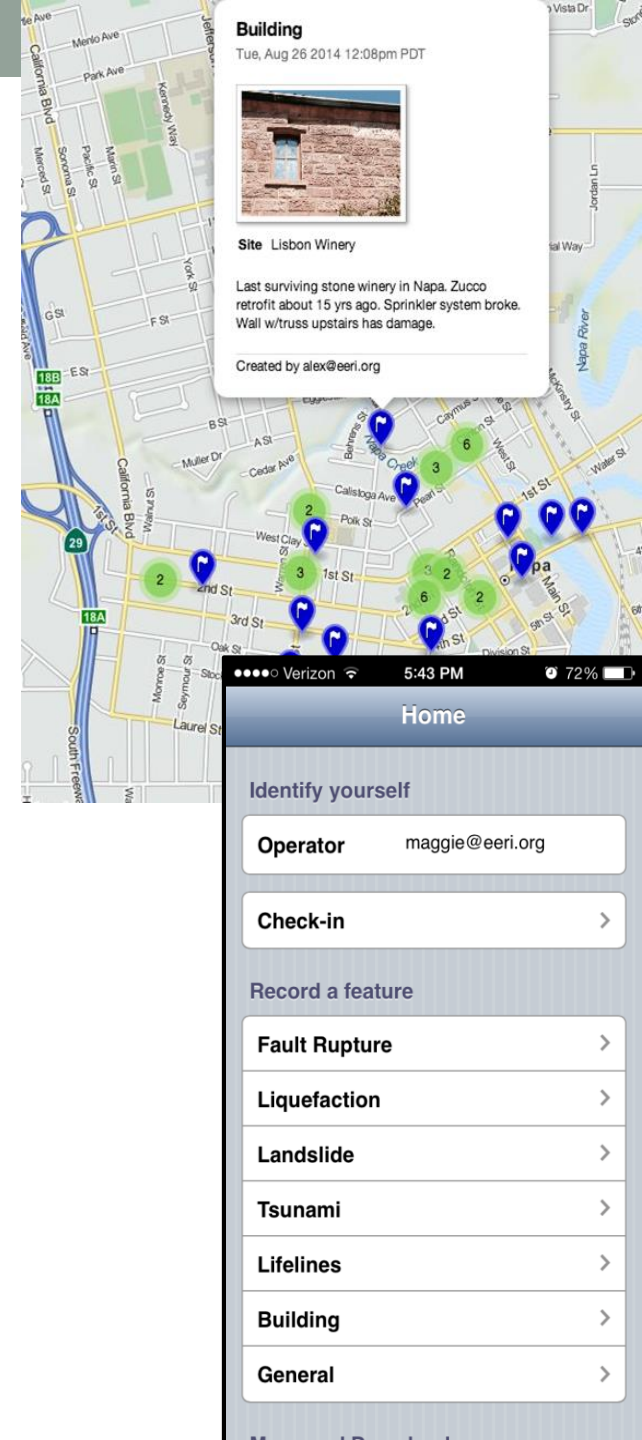


Common Data Types Received

- Photographs
 - Tools developed ensure useful metadata with caption, photographer, geolocation for mapping
- KML/KMZ Data layers
 - gps trails & geolocated photos
- Form Data (pdf's, handwritten forms)
- Excel spreadsheets
- Links to news reports, etc.
- Summary reports (pdf and ppt files)

Data Collection Methods

- Clearinghouse Fieldnotes
(field-based web app developed by Scott Haefner & Luke Blair of USGS)
- EERI Photo Upload Map Tool
(post-recon desktop upload for geolocating single photos)
- Batch Photo Upload Tool
(post-recon desktop upload for batches of geolocated photos)
- Other Data Sources



ArcGIS Online Map Viewer (now)

The screenshot displays the ArcGIS Online Map Viewer interface for the "M6.0 South Napa Earthquake". The main map area shows a street view of the earthquake-affected region, overlaid with numerous yellow pushpin markers representing damaged buildings. A scale bar at the bottom left indicates a distance of 0.5 miles. The interface includes a top navigation bar with "Details", "Basemap", "Share", "Print", and "Measure" options. On the left, a "Contents" panel lists several layers, all of which are checked:

- ✓ Dribris Dropoff Sep3 - Debris Drop-off Sites
- ✓ Damaged Buildings Sep3 - Damaged Buildings
- ✓ Clearinghouse Field Notes
- ✓ Barricades 26 14 Erik McAdams
- ✓ USGS South Napa Event Finite Fault Model
- ✓ South Napa Earthquake Turner 2014-09-20

An inset window in the top right corner provides a detailed view of the "Wells Fargo Building", showing a photograph of the interior damage to the roof and a link for more information. The inset also includes a "Zoom to" button and a "1 of 2" indicator.

Map data © OpenStreetMap contributors, CC-B... esri

bit.ly/1smi6so

Improvements to Visualization Map

- Standardize symbology
- Upload data to FEMA GeoPortal for increased reliability for users and load speed
- Acquire missing data (with USGS and others)

Legend

Liquefaction spreading

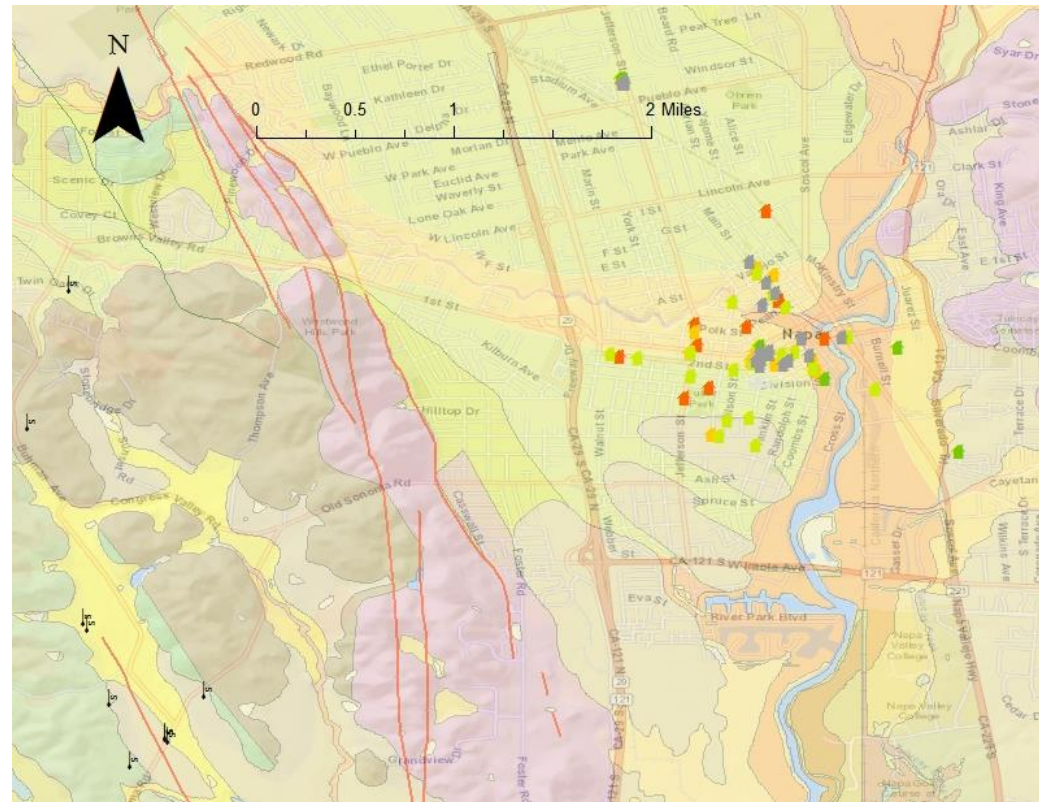
- no
- yes
- Fault Rupture

Lifelines functional

- Partially Functional

Structural damage

- None
- Slight
- Moderate
- Severe
- Total Collapse



EERI Next Steps for Napa & beyond

- Maintain Virtual Clearinghouse as post-event archive of engineering & scientific findings
- Add photo gallery, search, and other non-map data visualization features
- Finalize After Action Report with partners
- Improve operations based upon lessons
- Help prepare Disaster Service Worker requirements
- Reconnaissance and Tool Training for EERI members & other subject matter experts

More South Napa Data & Findings

South Napa Clearinghouse website:

<http://www.eqclearinghouse.org/2014-08-24-south-napa/>

- EERI Reconnaissance Summary Report
- Reconnaissance Summary Briefing (EERI - PEER)
- ArcGIS Online Map: <http://bit.ly/1smi6so>
- Long Term Data Archive

Information about the California Earthquake

Clearinghouse: <http://www.californiaeqclearinghouse.org/>



Future Southern CA Earthquake

- 446 EERI members in Southern CA

EERI Regional Professional Chapters:

- Southern CA
- San Diego

EERI Regional Student Chapters:

- Cal Poly Pomona
- CSU Fullerton
- CSU Long Beach
- CSU Los Angeles
- Cal Poly SLO
- San Diego State
- UC San Diego
- USC
- UCLA
- UC Irvine
- Caltech

EERI Actions for Future SoCal Eq

- Activate Virtual Clearinghouse website
- Ensure data visualization map and tools are operational & prepopulated
- Reach out to EERI members & chapters to encourage response to Clearinghouse
- Coordinate with other technical recon groups:
i.e. GEER, ASCE TCLEE, SEAOC, PEER, etc.
- Activate disciplinary leads to organize field activities & monitor field data being uploaded
- Contribute to nightly briefings and synthesis reports to share outcomes