

HUMBOLDT EARTHQUAKE EXECUTIVE SUMMARY

Description of Event

The Humboldt Earthquake struck at 1627 hours, on January 9, 2010. The earthquake registered a magnitude of 6.5 and occurred in Humboldt County, 27 miles west of Ferndale at a depth of 13.5 miles under the Pacific Ocean floor. The most impacted areas were Ferndale, Eureka, Rio Dell, Arcata, and most of Humboldt County. Minor shaking was felt as far away as the San Francisco Bay Area, the southern section of Oregon and areas of Lake Tahoe in Nevada.

The initial quake was followed by 59 aftershocks within the first week. The largest aftershock was a magnitude 4.4 that occurred about an hour and a half after the main shock.

Incident Period

January 9, 2010 to January 16, 2010

Injuries and Damages

There were 30 minor injuries and one major injury reported. All injured were provided medical treatment at hospitals within the region. Many of the injuries sustained occurred at the Bayshore Mall in Eureka and were a result of falls people took as they were evacuating the building and not because of falling debris.

Property damage was concentrated along the coast from Ferndale to Eureka. Eureka was most heavily impacted, with over 600 structures affected including nine with major damage. The majority of damaged structures were single-family homes. Bayshore Mall, Humboldt County's largest commercial property, was damaged and closed for four days. It is notable that the buildings that were retrofitted after Eureka's 1989 Unreinforced Masonry (URM) Building ordinance suffered only cosmetic damage.

Estimated losses for the county (effective January 14, 2010) were over \$28 million.

Highways and bridges had minimal damage, with initial losses to county roads estimated to be \$2.5 million.

Infrastructure

Initially, more than 36,000 people were without power. Pacific Gas and Electric (PG&E) crews responded to and checked 75 residential gas lines. Power was restored to everyone shortly after 0600 hours on Sunday, January 10, 2010. According to the California Department of Public Health's (CDPH), Division of Drinking Water and Environmental Management (DWEM), no drinking water systems were affected. PG&E reported no damage to its gas-powered Humboldt Bay Power Plant, where spent nuclear fuel rods are stored in underground casks.

Evacuations and Shelter

Humboldt County Red Cross supported shelter for approximately 14 displaced persons.

Declarations and Proclamations

Local Proclamation: On January 12, 2010, the City of Eureka and the County of Humboldt proclaimed a local emergency.

Governor's Proclamation: On January 12, 2010, Governor Arnold Schwarzenegger proclaimed a State of Emergency in Humboldt County due to the earthquake.

Summary of Successes

Successful operations were highlighted in the following areas: proactive regional response; coordination between the State and Tribal Nations; and the use of technical specialist to make informed damage assessments.

- Proactive response by Cal EMA representatives was exemplary.
- The Cal EMA response/recovery team's expeditious response had a positive impact on the local recovery process.
- Cal EMA conducted outreach to the eight tribes in Humboldt County and tribes were encouraged to report damage to their local jurisdiction(s).
- California Department of Public Health's Licensing and Certification Unit and Disaster Services Unit drafted an information flow chart to guide communication between the two units during a disaster in which the Department Operations Center (DOC) was not activated.
- The inaugural use of the Center for Engineering Strong Motion Data (CESMD) appeared to have improved the ability to make informed damage assessments. The data compiled indicated where areas were that experienced a higher degree of damage. This information gave recovery personnel a much better picture of where to deploy damage assessment teams.

Summary of Areas Needing Improvement

Overall, the management of this disaster was very effective and the needs of the citizens of Humboldt County were met in a timely manner. However, it is important to take advantage of the opportunity to identify areas needing improvement to enhance California's response to future disasters.

Below are recommended areas of improvement which can be applicable to all five SEMS levels (Field, Local, Operational Area, Regional, and State).

- Optimal staffing of the Emergency Operations Center (EOC) at the local and Operational Area (OA) levels was delayed due to a lack of awareness by key personnel of an established automatic EOC response for significant incidents.
- There was a lack of trained personnel for use as Section Chiefs in the OA EOC.
- There was a lack of communication between Coastal Region, OA and Recovery staff in the coordination of initial damage estimates (IDE) and preliminary damage assessments (PDA).
- The collaboration between Cal EMA and Department of Conservation/California Geological Survey (CGS) was insufficient in part because the CGS was not represented in the State Operations Center (SOC) to offer technical evaluation and enhance collaborative communications.

Summary of Corrective Action Recommendations

- Establish or re-emphasize an automatic response requirement for EOC staff for immediate significant events.
- Identify and train additional personnel for use as Section Chiefs.
- Standardize and pre-identify regional response/recovery teams and make ready for dispatch to any OA affected by future significant incidents.
- Coordinate the Preliminary Damage Assessment (PDA) process with a county point of contact, not via individual cities.
- Provide CGS a seat in the State Operations Center (SOC) as a technical specialist when needed to offer technical evaluation and enhance collaborative communications. It is also recommended that CGS be included in the SOC notification SOP to request CGS personnel for all damaging earthquakes.

ORGANIZATIONS CONTRIBUTING TO THIS REPORT

State Agencies and Departments:

California Emergency Management Agency/
Recovery Branch and Coastal Region REOC
California Department of Transportation (Cal Trans)
California Department of Mental Health (DMH)
California Department of Conservation/
California Geological Survey (CGS)
California Highway Patrol (CHP)
California Department of Water Resources (DWR)

Local Government/Operational Areas/Private:

Humboldt County Sheriff's Department
Humboldt County Tribes
City of Eureka
California Utilities Emergency Association (CUEA)
American Red Cross