

SCENARIO 2

San Francisco Bay Area Catastrophic Earthquake Scenario

Background Information: April 24, 2007 Report

On April 21, a 7.5 magnitude earthquake occurred along the San Andreas fault zone in the San Francisco Bay Area. Ninety minutes later, an 8.0 magnitude shock occurred along the adjacent Hayward Fault. The quakes severely impacted a region with a population of approximately 10 million people. Subsurface faulting occurred along 45 miles of the fault zone, extending along a large portion of highly populated local jurisdictions, creating a large swath of destruction. Ground shaking occurred for approximately 25 seconds during the first shock and 20 seconds during the large aftershock.

(Please see graphic on next page.)

Casualties & Medical Care (as of noon, April 24, 2007)

- Approximately 1,400 fatalities occurred as a direct result of the earthquake. More than 100,000 people have been injured and continue to overwhelm area hospitals and medical facilities, most of which have sustained considerable damage. Approximately 18,000 of the injured require hospitalization. Both fatality and injury estimates are expected to rise.
 - Of the 196 hospitals in the region, only 23 are reported to be operating with functionality greater than 50 percent, leaving approximately 8,800 hospital beds in the area available for earthquake casualties and patients already admitted to area hospitals. Backup generators are running out of fuel and hospital officials are searching for alternative locations for patients in need of care.
- As many as 20,000 people are missing and may be trapped under collapsed buildings, bridges, and underground commuter tunnels. The earthquake trapped workers in their offices and commuters on freeways. Children were in schools, some of which were damaged, and worried parents were unable to determine the status of their children for many hours. Specialized search and rescue teams are attempting to extricate trapped persons from collapsed structures and light rescue is performed to free people from loose rubble.
- Fire and Emergency Medical Services (EMS) stations are also damaged, with only 40 of the 241 stations operating at greater than 50-percent capacity. Dozens of the region's fire apparatus are damaged to the point that they are no longer functional.
- More than 300,000 households have been displaced because of structural damage to housing, and an additional 8,000 have been temporarily displaced because of utility disruptions. Approximately two-thirds of displaced persons are in need of short-term shelter. Half of the existing pre-designated shelters have been damaged and cannot be used until structural inspections can be performed.

Damage

- The area within 25 miles of the 2 faults was subjected to shaking strong enough to cause considerable damage to ordinary buildings and severe damage to poorly built structures.
 - Quicksand-like conditions in areas of liquefaction (e.g., the San Francisco Marina District) have contributed to the destabilization and collapse of numerous buildings, transportation structures, and utilities, including “earthquake resistant” structures.
 - More than 2,000 spot fires have occurred. Controlling these fires is hampered by a lack of water and disrupted roadways. Widespread debris has severely impeded access and heightened the risk of fire.
 - More than 1 million buildings were at least moderately damaged (40 percent of the buildings), and more than 150,000 buildings have been completely destroyed. Older buildings, notably those constructed prior to the adoption of seismic building codes, sustained major damages.
 - Aerial reconnaissance of the area shows the collapse of bridges and significant obstructions on major highways. Sections of one major highway have buckled and have been covered by landslide debris. Railways and airport runways have also sustained moderate to severe damage.
 - Ground shaking from the earthquake has generated massive amounts of debris from collapsed structures. FEMA’s “Hazards U.S.” (HAZUS) software models have preliminarily estimated the amount of debris to be more than 120 million tons. Damages to unreinforced masonry buildings extend over a wide area, contributing to the debris generated by the earthquake.

Utilities

- Utility companies are reporting widespread power outages. Power generation and distribution systems are out of commission. There are also numerous ruptures to underground fuel lines, oil lines, and natural gas lines. More than 1 million people are without water because of water main breaks and power outages. Up to one quarter of these outages could continue for 3 weeks or more because of damaged infrastructure.
- Wastewater primary interceptors were reported broken in the vicinity of the fault line, shutting down systems and causing raw sewage to leak into the streets. It will take weeks to repair all the damage.

State and Local Response

When State officials realized the catastrophic consequences of the earthquake and subsequent aftershocks, the Governor declared a State of Emergency and requested Federal assistance.

Federal Response

FEMA designates four counties as eligible for Federal Disaster Assistance (Stafford Act declarations by the President).

Within 24 hours of the quake, the PFO and FCO are temporarily located at the Operational Area EOC. The ERT-A is located at the State EOC and the full National ERT is en route to establish a JFO in the Bay Area. FIRST and DSAT teams are on-site assisting with the response.

A JFO is established within 72 hours in the Bay Area, and deployment of the resources listed in the NRP Catastrophic Incident Supplement for a natural disaster is underway. All assets should arrive within 120 hours.

SCENARIO 2—Unit 3 (Managing Public Education and Information)***ADDITIONAL SCENARIO INFORMATION FOR THIS UNIT***

Immediately after the first earthquake, all TV channels were reporting on the high number of people trapped in buildings, schools, and in cars on the freeway. With 173 hospitals not fully operational, a huge burden has been placed on the 23 hospitals that are operational. These hospitals are in urgent need of hundreds of volunteers. It wasn't until the Governor declared a State of Emergency that you realized the media had received no message about volunteers or donated goods. With the intense media coverage, it is expected that hundreds of truckloads of product will be donated. At this point in time you do not know what is needed, but a media message needs to be released as soon as possible. Different TV stations are saying different things about volunteer—some are encouraging people to try to get to the disaster area to help—others are encouraging people to stay away.

Questions/issues for this Unit to be addressed by the group:

- Develop a press release for the “response phase” of operation for this scenario. It should include your immediate “message” for donating goods vs. cash and your immediate need for volunteers.
- You have received calls from two other States asking if there is any message they should share with the people in their States about donating goods and volunteering for your disaster that would be helpful to the overall effort. Are there any major needs? What is the toll-free number people should call? Is there any other information you can share with them? What information would you provide the two States?
- Develop a press release for the “recovery phase” of operation for this scenario.