

Bay Area Emergency Management Overview

The San Francisco Bay, with its 9 counties touching the shore, is home to over 7 million living in hundreds of communities, all connected by a series of bridges, freeways, trains and ferries. From the beginning the area has served as a major port, a gateway to the Pacific, a center of innovation and the heartbeat of change. The area is largely free from most natural threats that beleaguer the rest of the country; it doesn't snow, we're protected from cyclones, temperatures are mild, and even things like flooding pale by comparison to other areas. Our threats are far less visible, yet just as devastating when they occur – earthquake, wild fire, tsunami and a host of human caused threats ranging from environmental contamination and industrial accidents to terrorism.

In this brochure we highlight some of the vulnerabilities and disasters the area has survived in the past decades. Some are large, some are not, but all left their mark on how we live, how we prepare, and how we think.

1 | Bay Bridge – Seismic Upgrade

A 6.9 earthquake occurred along the Loma Prieta fault on October 17, 1989 at 17:04 just as the World Series was starting. The trembler, centered in Santa Cruz county, lasted for 10 -15 seconds. The Bay Bridge sustained significant damage, most notably, one section of the bridge deck fell from the upper roadway onto the lower roadway.

- 1.2-mile Skyway being erected
- \$6.416 billion paid for by an Assembly Bill (AB)
- Self-Anchored Suspension span with a 525-foot tower supporting a bridge deck connecting the Skyway to the Yerba Buena Island.
- Oakland Touchdown to the toll plaza
- 7 other bay area bridges undergoing retrofit (Golden Gate, San Mateo-Hayward, Richmond-San Rafael, Carquinez, Benicia-Martinez, Antioch, Dumbarton)

2 | Port of Oakland

Established in 1927, Oakland was among the first ports globally to specialize in the intermodal container operations which have revolutionized international trade and created the global economy.

- 1210 acres of marine terminals
- 20 deepwater berths
- 35 container cranes
- 10 container terminals
- Union Pacific and BNSF railroad facilities
- 99 % of the containerized goods moving through Nor Cal
- 58.9 % of trade is with Asia
- 4th busiest container port in the U.S.
- 3 principal Pacific Coast gateways:
Oakland/San Pedro Bay/Puget Sound
- Carry approximately 50 % on the nation's total container cargo volume

3 | Oakland Hills Fire

On October 19, 1991 a fire started from an incompletely extinguished grass fire. Winds of over 70 mile per hour fanned the flames as it consumed over 1500 acres. By 11:00 on Oct 20 it had reignited and would not be extinguished until Oct 23.

- 107 alarm fire covering Oregon, Nevada, Southern California
- 25 people killed, 150 injured
- 3354 single family dwellings, 437 apartment and condo units
- \$1.5 billion in economic loss
- CDF air tankers at Alameda

Key issues

- Power lines out to pumping stations
- Incompatible outlets for hoses
- Interoperable communications
- Narrow winding roads blocked by cars
- Ran out of water

Mitigation

- Forum for consensus on fire safety standards and codes (ICS system) multijurisdictional training etc.
- Hydrants now have industry standard 4 ½ and 2 ½ inch outlets in Oakland.
- Water cisterns added
- New fire station in the Hills
- Radio communications improved

4 | Richmond Refinery

On October 6, 2012 a weakened pipe lead to an explosion that exposed residents of the surrounding community to a large plume. The Chevron Richmond refinery was founded more than a century ago and is Northern California's largest, capable of processing more than 242,000 barrels of oil each day. It is the third-largest refinery in the state.

- Explosions in two of the refinery's towers
- All employees evacuated, no fatalities
- Shelter in place was ordered for surrounding communities
- Contra Costa Hazmat teams took air samples – no real hazard was detected
- Panic and health scare

5 | Angel Island

A large fire started from a camp fire that was not completely extinguished on October 12, 2008. The fire was active for two days and burned over half of the island. The Angel Island State Park is the largest island in the bay. A Historical landmark, it has been used as a US Public Health Service Quarantine Station, US Immigration inspection and detention facility.

- USCG transported fire fighters from SF and Marin
- Fire apparatus had to be taken over empty because of weight restrictions.
- Extra time was needed to refill the engines
- Purchased new equipment that could transport more equipment and personnel

6 Golden Gate Bridge

The GGB Spans GG Strait linking CCSF and North counties. 40 million vehicles a year. Operated by the GGB Highway and Transit District, a special district of the State of California formed in 1928.

- 75th anniversary celebration
- Retrofit of Marin side complete
- Retrofit of SF side complete
- Main suspension bridge estimated at 125 million. Planned for 2013/14 completion.
- Marin Anchorage Housing planned for 2013/14.

7 Marina District

Home to the worst destruction in San Francisco following the Loma Prieta earthquake. This area is also the site of the America's Cup racing scheduled to take place from July – September 2013.

- 63 deaths, 3757 injuries throughout the Bay Area
- 4 deaths and 4 buildings destroyed, 7 collapsed, 63 red tagged in Marina District
- Area is built on landfill; some from 1906 quake, most from 1915 Pan Pacific Exposition construction
- Gas main rupture ignited a significant fire that consumed almost an entire city block
- Water pumped from the Phoenix to engines on shore
- Soft story structures were particularly vulnerable in liquefaction zones

8 Financial District / Waterfront

The bay coast line used to be further south. Originally called Clarke's Point under Telegraph Hill and continued around to Rincon Cove. The Embarcadero Freeway separated the city from the waterfront but it was removed in 1991 as a result of structural instability following Loma Preita. The revitalization has transformed the city's waterfront.

- Hundreds of ships abandoned in gold rush
- Early San Francisco was a wharf city of planks and sheds and subject to devastating fires. Half the early city was built on trembling wharves.
- Seawall built in 1853
- Rock and fill brought in to fill the mudflats
- Ferry Building built upon thousands of Douglas Fir piles up to 135 feet deep.
- Barbary Coast Tour – Red Light District

9 Bay Bridge – Cosco Busan

The Cosco Busan struck the Delta Tower of the Bay Bridge on November 7, 2007 at 8:30 in thick fog. It subsequently released 53,569 gal of heavy fuel oil into the bay.

- 200 miles of coastline were impacted which resulted in 50 public beaches being closed
- 6,849 birds died and 14 to 29% of the herring spawn in winter 2007-8 were lost
- Several Bay Area fisheries were affected and the crab/sport fishing seasons were postponed
- Ad-hoc volunteers were discouraged from cleaning beaches
- Responsible party paid \$32.2M for natural resource damages and \$1.25M in state penalties.
- \$10.9M for unpaid government response and assessment costs
- \$1.5M for the bridge's fender

Big Cities Emergency Managers – Winter 2013

