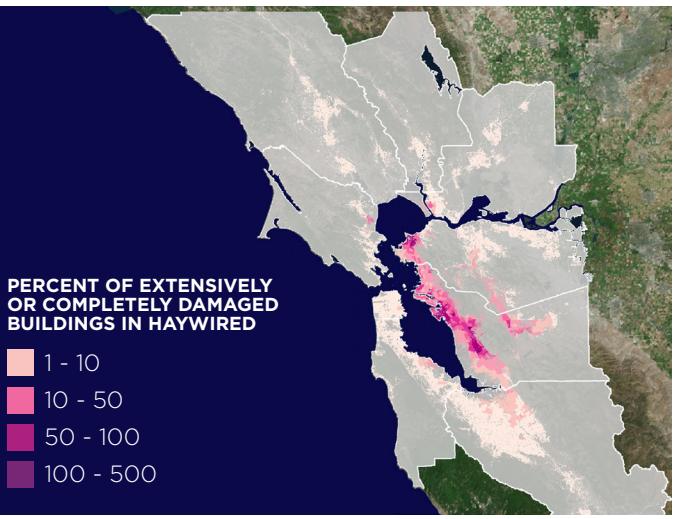
EARTHQUAKE – FRAGILE BUILDING INVENTORY

Many of our homes and apartments are unsafe. Hundreds of thousands of residents live in seismically unstable older buildings, leaving them seriously vulnerable in a major earthquake. These residents could lose their homes, their communities, their life savings, or even their lives.

But we have the tools to make meaningful improvements to the safety of where we live, starting with inventorying what's safe and what may not be.



BEST PRACTICES

City of Palo Alto – Following the 2014, magnitude 6.0 Napa earthquake, the Council directed staff to identify and prioritize buildings that pose a potential seismic hazard. One of the first steps of the study was to develop a digital inventory of buildings – a process that examined 2,632 buildings. Currently, Palo Alto is reviewing findings and crafting a mitigation strategy.

https://www.cityofpaloalto.org/gov/depts/ds/srmag.asp

City of Hayward – Following the update of the Local Hazard Mitigation Plan, Hayward worked with ABAG to use GIS and a sidewalk survey to inventory potential soft-story buildings in the city. Hayward is now exploring additional study and policy options.

City of Santa Monica – Santa Monica took a comprehensive approach to inventory fragile masonry, concrete, soft-story and steel buildings, made an open data map, and adopted retrofit policies for each.

https://www.smgov.net/Departments/PCD/Programs/Seismic-Retrofit/

ADDITIONAL RESOURCES

STRONGER HOUSING, SAFER COMMUNITIES (ABAG, 2015)

A regional study of where fragile buildings coincide with vulnerable communities in earthquake and flood hazard areas.

http://resilience.abag.ca.gov/projects/stronger_housing_safer_communities_2015/

SOFT STORY GUIDANCE DOCUMENT (ABAG, 2016)

A program development guide and model ordinance for soft-story buildings — one type of fragile buildings in the region.

http://resilience.abag.ca.gov/projects/soft_story_2016/

EXPECTED HOUSING LOSSES IN EARTHQUAKES – UPDATED HAZUS DATA (ABAG, 2018)

A robust data set of the residential building impacts of 16 Bay Area earthquake scenarios.

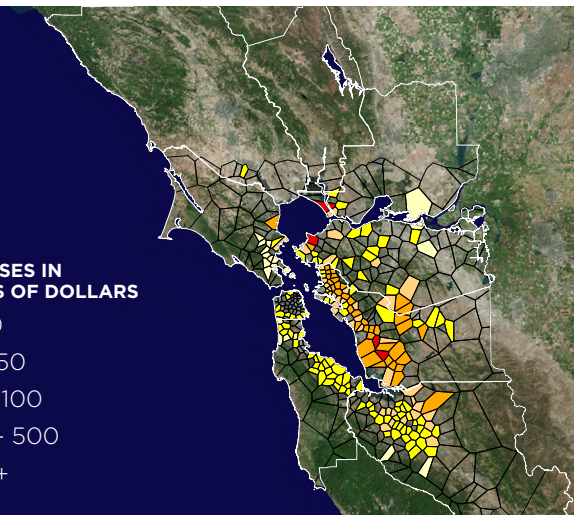
http://resilience.abag.ca.gov/housing/losses/

EARTHQUAKE – FIRE FOLLOWING SOLUTIONS

Devastating fires can compound damage after an earthquake. Broken gas and electric lines could cause widespread ignitions while pipes carrying the water to put out these fires may also break.

In the HayWired scenario, models predict over 400 ignitions, overwhelming fire services that will have limited or no water supply.

California cities have developed bold solutions. San Francisco got a head start after 1906, but Berkeley and Los Angeles have both developed creative solutions to the challenge.



BEST PRACTICES

City of San Francisco – Following the 1906 earthquake, San Francisco built an Auxiliary Water Supply System to enable greater firefighting capabilities after future earthquakes. In 2010 and 2014, voters passed $104M and $55M bonds to increase reliability and coverage.

https://sfwater.org/index.aspx?page=467

City of Berkeley – In 2000, voters approved Measure Q, a $9.6M bond to purchase a flexible, aboveground water supply system that would provide an auxiliary firefighting system following a future earthquake. When deployed, flexible hose can take water miles into the city from the Bay.

http://peer.berkeley.edu/events/annual_meeting/2011AM/wp-content/uploads/2011/10/Fire_Orth_David.pdf

Los Angeles Department of Water and Power – The LADWP developed a plan to improve water system resilience for firefighting - including the development of a very limited, but resilient network of pipes.

https://files.scec.org/s3fs-public/20150915_1530_Davis_Plenary.pdf

ADDITIONAL RESOURCES

RPC INFRASTRUCTURE SUBCOMMITTEE (ABAG, 2016)

In 2016, ABAG held a meeting to discuss fire following earthquake challenges.

https://abag.ca.gov/abag/events/agendas/R091416a-Agenda%20Packet.pdf

HAYWIRED SCENARIO (USGS, 2018)

The Scenario includes a chapter of technical study on fire following earthquake risk in a M7.0 Hayward fault earthquake.

https://outsmartdisaster.com/be-informed/the-haywired-reports/