

# CAPSS: Community Action Plan for Seismic Safety



## Community Action Plan for Seismic Safety (CAPSS) A Project of the San Francisco Department of Building Inspection

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[www.sfcapss.org](http://www.sfcapss.org)

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### **Repair Regulations: Guiding Repairs After the Next Quake**

Seismic retrofit guidelines require a balance between safety and cost effectiveness. When an earthquake occurs and damaged buildings are repaired to their original state, it is likely that the next earthquake will cause the same damage. However, when owners are required to seismically retrofit their buildings after an earthquake, in addition to repairing them, it costs more money and takes more time to achieve stronger and safer results.

The CAPSS project is studying ways to update and improve San Francisco's current post-earthquake repair guidelines.

After an earthquake, the City's current policy requires any building with more than a 20 percent loss in seismic capacity to be retrofitted, as well as repaired. Buildings with less damage can simply be repaired. This policy is problematic since there is not a consistent way to determine how damage translates into "loss of seismic capacity" and experts can interpret this quite differently. CAPSS will seek to define damage in ways that are easier for professionals to determine uniformly.



*Earthquake damaged structure*

The amount of ground shaking during an earthquake can vary significantly in different parts of the city. A brand new building exposed to very violent shaking could experience a lot of damage.

However, it would be hard to justify requiring brand new buildings to retrofit since they are already built to the latest seismic standards. Conversely, an older building that sustains damage when exposed to only minor shaking should raise red flags about its structural safety. CAPSS may recommend that the amount of shaking experienced at each location be considered when determining whether or not retrofit should be required.

CAPSS' proposed repair regulations are expected to be complete by March 2010. The updated requirements will address safety needs as well as help building owners to rebuild promptly following earthquake damage.

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## **Planning Ahead: Implications of Future Earthquakes in San Francisco**

San Francisco is located in an active seismic region, and will surely be struck by earthquakes in the future.

When the next earthquake strikes, how much housing will be lost, and for how long? How will building owners and tenants be affected? What will happen to jobs and businesses in the City? Will the City lose treasured historic buildings?

CAPSS is working to understand the possible economic, social, and cultural consequences of future earthquake damage to the City. Identifying San Francisco's strengths and vulnerabilities in the event of an earthquake is a critical step in formulating emergency response plans and policies to reduce that damage.

CAPSS is currently studying the likely consequences of future earthquakes to existing buildings in San Francisco. This research and analysis builds upon work that began in 2001 and is expected to be completed by January 2010.

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### **Did You Know?**

#### **Material Deterioration and its Impact on Seismic Risks**

The Loma Prieta earthquake caused damage that exposed previously hidden rotted wood. Concerned about the role that deteriorated structural materials play in seismic safety, the CAPSS Advisory Committee invited a panel of five experts to discuss this topic during the April 2009 meeting. Some notable points from this discussion include:

- Deterioration of structural materials is a significant problem in San Francisco and results in many buildings being less able to withstand earthquake shaking than when originally built.
- In San Francisco, wood rot appears to be the most common type of material deterioration. Wood rot is caused by moisture and accelerates when moisture gets trapped.



*Example of wood rot*

- The correlation between deteriorated materials and seismic safety has not been studied in detail, but the experts had all observed examples of buildings with weakened structural capacity due to material deterioration.
- A comprehensive study of this topic is outside the scope of the CAPSS project, but CAPSS may recommend that such a study be conducted in the future.
- Estimates vary about how common serious deterioration is in San Francisco's wood frame buildings. Unfortunately, even the lowest estimates make it clear that thousands of City residents likely live in buildings where wood deterioration has made the structural system weaker.

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## **Overview of the CAPSS Program - Getting Ahead of Future Earthquakes**

**San Francisco lies in one of the most seismically active regions in the United States, between two major faults, the San Andreas and the Hayward.**

The US Geological Survey estimates there is a 62% chance that a major earthquake will strike the Bay Area within the next thirty years. City leaders launched the Community Action Plan for Seismic Safety (CAPSS) in an effort to reduce earthquake risk *before* the next major earthquake strikes.

The CAPSS project will provide the San Francisco Department of Building Inspection (DBI) with an action plan and supporting policies to improve San Francisco's resiliency to earthquakes. These policies are intended to reduce earthquake damage and risks to existing buildings and expedite recovery after future earthquakes.

The CAPSS program is focused on:

- **Minimizing Damage:** The project will recommend city policies to reduce damage to buildings in future earthquakes and preserve the unique character that makes San Francisco a great city.
- **Rapid Rebuilding and Repair:** The project will develop an updated building repair policy so city residents and businesses can get back on their feet rapidly following a major earthquake.

CAPSS completed its first major milestone in February 2009 with the release of the report *Here Today-Here Tomorrow*, recommending policies to make multifamily soft-story buildings safer (available at [www.sfcapss.org](http://www.sfcapss.org)).

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## **Advisory Committee Meetings**

As a community effort, the CAPSS project is guided by a volunteer Advisory Committee, which includes representatives from a number of neighborhoods and other constituencies. **The CAPSS Advisory Committee meets the second Wednesday of every month from 11am to 1pm at the Department of Building Inspection, 1660 Mission Street, Room 2002. Advisory Committee meetings are open to the public. For more information about meeting times and locations, please visit the website at [www.sfcapss.org](http://www.sfcapss.org).**

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## **Contact Us**

**For further information on the CAPSS program, please visit our website at [www.sfcapss.org](http://www.sfcapss.org).  
If you have a question or would like to contact a CAPSS team member, please email [info@sfcapps.org](mailto:info@sfcapps.org)**

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