

# Top 10 Action Steps to Take Against Earthquakes

On the hundredth anniversary of the great earthquake of 1906, thousands of scientists, engineers and emergency management experts gathered in San Francisco for a conference. From that meeting came 10 recommended "action steps" for the region to take against future earthquakes.

These 10 action steps apply to society at all levels, individuals, businesses and governments—which means that all of us who work for businesses and participate in government activities have ways to help beyond taking care of ourselves at home. This is not a checklist; rather, it is the outline of a permanent program. Not everyone can take all 10 steps. But everyone should do as many of them as possible.

People elsewhere take part in a culture of preparedness for their regional hazard, whether they live in hurricane country or tornado country or blizzard country or fire country.

It's different in earthquake country, because the big events are rare and they occur without warning. Things on this list that may seem obvious in other places have yet to be learned in earthquake country—or they were learned and forgotten, as in the San Francisco region after 1906.

The action steps are crucial elements of a disaster-resilient civilization. The 10 steps serve three distinct purposes: making preparedness part of the regional culture, investing to reduce losses, and planning for recovery.

## Preparedness

- 1. Know your risks.** Study your buildings you live in, work in or own: On what kind of ground are they sited? How might the transportation systems serving them be threatened? What seismic risks affect their lifelines? And how can they be made safer for you?
- 2. Prepare to be self-sufficient.** Not just your home, but your workplace too should be ready for three days without water, power or food. After the Hurricane Katrina disaster, some experts changed this recommendation to a week's supplies.
- 3. Care for the most vulnerable.** Individuals may be able to help their families and immediate neighbors, but people with special needs will need special preparations. And ensuring a decent response for vulnerable populations and neighborhoods will take concerted, sustained action by governments.
- 4. Collaborate for a regional response.** Emergency responders already do this, but the effort should extend farther: government agencies and major industries must work together to help their regions prepare for major earthquakes. This includes regional plans, training and exercises as well as continuous public education.

## Loss Reduction

**5. Focus on dangerous buildings.** Fixing buildings that are likely to collapse will save the most lives. Mitigation measures for these buildings include retrofitting, rebuilding and controlling occupancy to reduce exposure to risk. Governments and building owners, working with earthquake professionals, bear the most responsibility here.

**6. Ensure essential facilities function.** Every facility needed for emergency response must be capable of not just surviving a large quake, but remaining functional afterward. These include fire and police stations, hospitals, schools and shelters, and emergency command posts. Much of this task is a legal requirement in many states.

**7. Invest in critical infrastructure.** Energy supplies, sewage and water, roads and bridges, rail lines and airports, dams and levees, cellular communications—the list is long of functions that must be ready for survival and quick recovery. Governments need to prioritize these and invest in retrofitting or rebuilding as much as they can, keeping a long-term perspective.

## Recovery

**8. Plan for regional housing.** In the midst of disrupted infrastructure, uninhabitable buildings and widespread fires, displaced people will need relocation housing for both the short and the long term. Governments and major industries must plan for this in collaboration.

**9. Protect your financial recovery.** Everyone—individuals, agencies and businesses—must estimate what their repair and recovery costs are likely to be after a major earthquake, then arrange a plan to cover those costs.

**10. Plan for regional economic recovery.** Governments at all levels must collaborate with the insurance industry and major regional industries to ensure the provision of relief money for individuals and for communities. Timely funds are crucial for recovery. The better the plans, the fewer mistakes will be made.