

What's New and What's Coming

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[New Survey Explores Local Governments' Earthquake Mitigation](#) | [Get Your Home in Shape for Quakes! - FREE Workshop for Owners of Older Homes Scheduled for November](#) | [NEW ABAG MAPS and Safety Tips to Deal with Traffic After Disasters](#) | [New ABAG Report on 1999 Turkey Quakes](#)

NEW Survey Explores Local Governments' Earthquake Mitigation

October 16, 2002 - The 1989 Loma Prieta earthquake marked the escalation of city and county efforts to prepare for future earthquakes. Dozens of Bay Area city halls, police buildings, fire stations, libraries, theaters, and other public buildings have been abandoned and rebuilt or have undergone structural retrofits since that quake. The work has been escalating during the last five years. San Francisco has been a leader, with approximately 70 total public buildings strengthened, including its City Hall. A total of at least 175 buildings have been made safer, including those strengthened prior to the Loma Prieta earthquake.

This is just one of the findings of a comprehensive survey of the 109 cities and counties in the Bay Area conducted by the Association of Bay Area Governments (ABAG) returned by 80% of these local governments. The survey will be a benchmark to document measurable improvements in earthquake preparedness during the next five years.

Cities and counties have made extensive plans for recovery of operations. The most common elements of these plans include emergency communications and emergency power in their buildings, included by over 95% of local governments. Although no data were collected as part of this survey on recent improvements in these programs, separate information points to strong improvements as a result of planning for Y2K and the State's power crisis. Many (86%) indicated that they had a plan for protection of data and recovery of records. Only the other hand, the lowest percentage (69%) had plans for emergency power related to transportation, such as for traffic lights or fuel pumps for emergency vehicles.

The efforts of local governments have extended to privately-owned buildings, as well. Of those responding to the questionnaire, 40% had conducted an inventory of at least one other type of potentially hazardous private building in addition to the State-mandated inventory of privately-owned unreinforced masonry buildings. However, 67% of the local governments have adopted one or more retrofit standards. 31% even offer some type of financial incentive to private owners to retrofit. Thus, an inventory of hazardous private buildings is not necessary for adoption of voluntary retrofit standards or for provision of

financial incentives. Programs related to privately-owned buildings reflect the diversity of hazards and concerns of local governments. Reviews of these diverse programs should show opportunities for local governments to learn from each other in creating innovative and effective programs to manage earthquake risk in these buildings.

For example, many cities are concerned about "soft-story" buildings where apartments are built on top of a parking garage or commercial space that may collapse in a strong earthquake, a problem in San Francisco's Marina District in the 1989 quake, as well as in the 1994 Northridge earthquake. The cities in Santa Clara County have joined with the county to create maps showing the areas with high densities of these buildings for use by emergency response personnel. San Leandro has a preliminary inventory of suspected soft-story buildings and is working on a "validation form" for building owners that will discuss ways to get their buildings taken off the list. Fremont's efforts have focused on developing a model standard for retrofitting these buildings. Berkeley has been investigating ways to develop a package of financial, technical, and educational materials to encourage retrofitting. City staff are developing an outreach campaign intended to develop a team approach among building owners, tenants, and the technical structural engineering community to encourage retrofitting of these buildings and have placed a measure on the November 2002 ballot to provide funding for this new earthquake safety program.

The ABAG survey was jointly sponsored by ABAG's Earthquake Program, the ABAG PLAN Corporation, and the Earthquake Engineering Institute (EERI) Northern California Chapter's Quake 06 Project.

The entire report is available [ONLINE](#).

Get Your Home in Shape for Quakes! - FREE Workshop for Owners of Older Homes Scheduled for November

The next workshop will be held Saturday morning, November 2nd, from 9:30 - 11:30 a.m. at the Hayward City Hall (across the street from the Hayward BART station). Doors open at 9:15 a.m.

Do I need to attend? Should I be concerned about my single-family home being so badly damaged in a future earthquake that I will be unable to sleep in it following the next big earthquake in the Bay Area? TAKE THE QUIZ!

When was your home built? _____

- Before 1950 = 5 points
- 1950 - 1960 = 4 points
- 1961 - 1978 = 3 points
- 1979 - now = 1 point

How tall is it? _____

- 2 or more stories = 5 points
- Split level or on hill = 6 points
- 1 story, 3 or more steps to front door = 4 points
- 1 story, less than 3 steps to front door = 1 point

What intensity (color) does the shaking intensity map show for your neighborhood? _____

[If you have not already viewed the map for your neighborhood, [click here](#) to open the maps in a new window. After viewing, close the map window to return here.]

- MMI VIII, IX, or X (Red, dark red, or black) = 7 points
- MMI VII (Yellow) = 5 points
- MMI V or VI (Green or blue) = 3 points

TOTAL POINTS

If your home earned 13 or more points, it probably needs to be made stronger to keep you and your family safer, unless it has been strengthened in the last few years.

Scientists predict that a large quake in the Bay Area is about twice as likely to happen as not to happen during the next 30 years. Are you betting your home's value and your safety on those odds?

During the workshop, participants will hear the answers to the following strengthening questions:

- Can homes really be made stronger?

- Do I need a building permit from the city or county? How much do permits cost?
- How do I find an experienced contractor?
- Do I sometimes need an engineer?
- Can I do any of this strengthening work myself?
- How much will this cost me?
- How can I get the money to pay for this?

Call Michael Smith at 510-464-7948 or email him at michaels@abag.ca.gov for additional information on the workshop and to pre-register. Although pre-registration is not required, it is recommended.

The [BOOKLET](#) of general information being handed out at these workshops is now available, as is the [FLIER](#) announcing the workshop. (Download FREE [Adobe Acrobat](#) Software, if needed)

Additional workshops are planned for November or December in San Francisco and San Mateo County.

These FREE workshops are sponsored by the Association of Bay Area Governments and the American Red Cross through a grant from the Allstate Foundation.

NEW Maps Added to Tips to Deal with Traffic After Earthquakes and Other Disasters

April 30, 2002 - The threat is real. ABAG's earthquake models are predicting hundreds more [road closures](#) in the region than earlier projections. The major factor increasing the road closure numbers is that several earthquakes on longer faults (also known as multiple-segment earthquakes) have been modeled for the first time. These changes were precipitated in response to the aftermath and lessons learned from the 1999 Kocaeli, Turkey earthquake and other large recent earthquakes.

Traffic disruption similar to that following the attack on the World Trade Center is one particular ramification that we can expect to see and have seen in disasters like earthquakes and fires. ABAG, in conjunction with State of California Office of Traffic Safety through the Business, Transportation and Housing Agency, has been working on mitigating transportation issues during and after a disaster. As a result, ABAG has issued new preparedness tips for "riding out" these disasters. This disaster-preparedness information, directed towards parents, businesses, and the public in general, is found in a new [Traffic](#) section of the ABAG web site.

Why do we need to plan out how to get around during a disaster?

In addition to giving us the opportunity to take some control over our safety, it makes good sense to prepare for and think ahead to what each of us would need to do if a disaster struck, and we are in our cars or away from home. Thoughtful preparation and pre-planning will make us safer drivers and give us the necessary plan to help weather the unexpected.

The ABAG Transportation Disaster project focuses on having a personal disaster plan that includes such basic, but necessary, steps as pre-designating emergency contacts who are authorized to pick up your children at school when you can't reach them. Available on the ABAG website are thorough disaster preparedness checklists outlining specific preparedness steps we need to consider. These checklists address the pre-planning and preparation that public and private businesses should implement, as well as the issues individuals as employees, residents and family members should pre-plan and put in place.

One thing that everyone can do is plan ahead. We cannot always prevent a disaster, but we can determine better ways to minimize its impact. Implementing a disaster preparedness checklist is one way to take control and make a difference.

NEW ABAG Report on 1999 Turkey Quakes Now Available

Business was booming. Starting in 1970, the Kocaeli area, just east of Istanbul, grew to become the second largest industrial center in Turkey, accounting for 13% of the country's industrial output. Kocaeli has an educated work force, a central location, and a spectacular location surrounding the Sea of Marmara (roughly the size of San Francisco Bay). Extensive apartment blocks were constructed during the past 30 years to house an exploding population that relocated to serve the rapidly expanding economy. The business community, elected officials, and Chamber of Commerce and Industry are proud of recent awards for promoting "green" industry.

On August 17, 1999, roughly 10 years after our Loma Prieta earthquake, disaster struck. Over 75 miles of the North Anatolian fault ruptured, generating a magnitude 7.4 earthquake and 45 seconds of violent ground shaking at 3:02 a.m. In comparison, the magnitude 6.9 Loma Prieta earthquake in 1989 ruptured a fault 25 miles long, with approximately 20 seconds of violent shaking. Those 45 seconds of terror resulted in 17,480 deaths, largely in relatively new apartments, and 133,000 uninhabitable housing units (versus 62 deaths and 16,000 uninhabitable housing units after the Loma Prieta earthquake). The central and municipal governments in Turkey became overwhelmed.

Kizilay (the Turkish Red Crescent/Red Cross) struggled to meet the basic feeding needs of the displaced, having only planned for a disaster one-fifth as large.

Jeanne Perkins, ABAG's Earthquake Program manager, was part of a three-person team of researchers who visited Turkey in early June 2001 to collect data on housing damage, sheltering, feeding, and medical services provided following this earthquake. The visit was funded by the National Science Foundation. She plans to use the data collected in future projects to test and improve ABAG's models of shaking and liquefaction hazards. Dr. Jack Harrald from George Washington University, another member of the team, hopes to use these data to better predict shelter and feeding demand. His work forms the basis for both ABAG's and the Bay Area Red Cross's forecasts of disaster sheltering in the region. The compilation and assessment of data inconsistencies is being coordinated by Irmak Renda-Tanali, also of George Washington University, who, as a Turkish citizen, was the invaluable third member of the team.

"I am already amazed by how much we have learned from this visit," Perkins stated. "Local municipalities were on the front end of responding to this disaster. They were excited about sharing many lessons that they viewed as useful with cities and counties here in the Bay Area, both in areas related to housing damage, but also related to service delivery." For example, debris was pushed into the Sea of Marmara for two days until those responsible were stopped and fined. The remaining debris (about 90 - 95% of the total) was crushed and recycled using both local and international equipment.

Lifeline performance was quite good in the Izmit area, the largest heavily impacted city. The modern wastewater system was undamaged, while the water supply system in that area was fully functional 8 hours after the quake, even though over half of the deaths occurred in this city. Telephone communications were fully functional in 8 hours, while natural gas service was restored in 72 hours.

Although few roads were closed, traffic attempting to enter the impacted area disrupted search and rescue, as well as emergency response activities. In a later earthquake on November 12, 1999, the provincial governor ordered the closure of all roads into the area except for emergency vehicles. The governor viewed the need for rapid traffic control as one of the principal lessons from the Kocaeli quake. ABAG's Earthquake Program is currently working on a public information campaign for earthquake traffic information funded by a grant from the California Office of Traffic Safety through the Business, Transportation and Housing Agency.

[Reports](#) resulting from this project and data on human needs services delivered after the quakes are now available.

ABAG, the Association of Bay Area Governments, is the regional planning and services agency for the nine-county San Francisco Bay Area.

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