

A Katrina of Our Very Own?

By James Macpherson

A new study by the Scripps Institution of Oceanography released in late June confirms: The San Andreas could rupture at any moment

There's never warning. Suddenly the earth pitches violently. There is instant terror. You're knocked off balance; your heart starts pounding. Loud crashes and shattering glass are almost deafening. Is this it? Is this the Big One?

"It is absolutely certain we will experience a huge earthquake in Pasadena," says Dr. Lucy Jones, Scientist-in-charge for the Southern California Earthquake Hazards Team of the U.S. Geological Survey.

What no one knows is when.

Unlike Hurricane Katrina, we won't get warning. Unlike Katrina, the danger faces all Pasadenans – regardless of race or economics. It is the aftermath, with its potential for destruction and death and chaos, which justifies the Katrina comparison.

An event that didn't happen in California, caused by a natural disaster that never would happen in California, Hurricane Katrina has many Pasadenans wondering: How well prepared is Pasadena for our Big One? What can we realistically expect — and what can we do to prepare now?

THE BIG ONE

No method can accurately predict when the next major temblor will occur. Our clock is ticking and time is running out.

Most likely, the culprit responsible for Pasadena's Big One will be the southern segment of the San Andreas fault near the Salton Sea. It seems not to have ruptured since about 1680 – making it long "overdue," and capable of packing quite a punch.

Hurting northward at two miles per second, the earthquake will throw out shock waves that grow stronger as it travels in our direction.

"If that happens," says Dr. Kate Hutton, Staff Seismologist of Caltech's Seismological Laboratory, "San Gabriel Valley could be in for some serious shaking."

The continuous shaking could be severe for up to 130 seconds – over two full minutes — before the rupture finally reaches the closest gap between Pasadena and the San Andreas. (By contrast, the 1994 Northridge earthquake lasted merely seven seconds.) Then the waves will continue but lessen in intensity as it begins to move away from us.

Pasadena's geology is not helpful. The city is situated largely on an alluvial plane of loosely-compacted soils runoff from mountain erosion. In general, solid rock shakes less and soft sediment shakes more.

"When I talk to kids' classes, I call this the Jello effect," writes Dr. Hutton. "If you shake a bowl of Jello, the bowl moves a little bit, but the Jello moves a lot. This is because it is soft and the seismic waves have to slow way down and get much bigger. Waves get trapped in the bowl. If you were to look at our history of 'felt reports' from small earthquakes, you would find that people in the San Rafael Hills, which are

granite, often don't even feel quakes that other Pasadenans do."

Compounding risk, Pasadena has other faults: the Sierra Madre fault, the Eagle Rock fault, and the Raymond fault. Each of these has the potential to produce extremely powerful earthquakes; each might possibly react to a San Andreas fault earthquake.

WHAT COULD HAPPEN

Geologists don't mince words. On KCET's *Life and Times* program, Dr. Jones told Val Zavala that "Anywhere within ten or twenty miles of the [San Andreas] fault from Fort Tejon all the way down to the Salton Sea is going to be as badly damaged as the worst part of the San Fernando Valley in the 1994 [Northridge] earthquake."

Local first responders and structural engineers say they simply don't know what to expect.

"When the bell goes off and we get these earthquakes, then my adrenaline goes nuts because that's where we see what we did. It's my test from God," says Structural Engineers Association of Southern California President Daniel J. Novak, himself an East Pasadenan.

"Our science is ever evolving. Designs change, and we learn from earthquakes. I would expect single-family homes will be fine."

But when it comes to office buildings, it's hard to predict, he says.

Pasadena Building Official Sarkis Nazerian points out that a program to retrofit 750 dangerous unreinforced masonry buildings in Pasadena is almost complete – only thirty-four buildings remain. Every building in Old Pasadena has been retrofitted.

Retrofitting is for "life safety" — for giving occupants time to ride out the earthquake and evacuate safely. (Whether people will have a home or a work place to return to after the quake is an entirely different matter.)

"Personally," says Mr. Novak, "I have a travel trailer [whose tanks are — Ed.] full of water and full of propane all the time, because if an earthquake comes, that's going to be my lifeboat." And that's a structural engineer talking.

THE CITY'S EMERGENCY RESPONSE

Southern California authorities seem light-years ahead of southern Louisiana's when it comes to emergency preparedness. However, if geologists are correct, the Big One will present incredible problems.

According to the Pasadena Fire Department's Lisa Derderian, who is the city's Emergency Management Coordinator, Pasadena has very detailed emergency response plans (the draft Plan, now in conformance with new FEMA requirements and measuring almost two inches thick, was presented to City Council in early June).

City officials say that Pasadena's Emergency Operations Center will be activated practically before the earthquake has stopped shaking — a tactic designed to coordinate the Fire, Police, Transportation, Public Health, and Water and Power departments and the local chapter of the American Red Cross under a "unified command."

Individually and separately, each department will begin to assess damage to its operations, run through safety checklists, call back personnel, and check community priorities.

"What we are concerned with as a police department immediately after an earthquake is to be self sustaining. The police department is standing, our vehicles are able to respond, personnel are being called back . . ." says Commander John Perez of the Pasadena Police. "We're able to fly the area and really evaluate the system . . . see from the air

Earthquake Preparedness Important Websites and Telephone Numbers

Pasadena Emergency Response Team (PERT) Training

Contact Lisa Derderian at (626) 744-7276 or

lderderian@cityofpasadena.net

www.ci.pasadena.ca.us/fire/earthquake.asp

Pasadena Police Dept. Neighborhood Watch (626) 744-4550

Pasadena Water & Power Department (626) 744-4409

www.pwpweb.com/yourhome/emergency_preparedness

American Red Cross (626) 799-0841 www.sgvarc.org

United States Geologic Survey

www.earthquake.usgs.gov/learning/preparedness.php

What Pasadenans need to know about the coming quake

which parts of the city have been damaged more so than other parts. Which ones are in need of immediate attention.”

Each of Pasadena's eight fire stations will begin working down a similar shortlist, checking schools and hospitals, working on uncontrolled fires, and beginning search and rescue operations.

Fire Chief Downs: “When it comes to a significant event like that, Pasadena, as a fire department, as well as surrounding departments, are going to be absolutely tapped out.”

“It is real critical to understand, as we work through this, that we are not drawing in additional resources from Glendale, or from Burbank, or from Arcadia,” Chief Down cautions. “We’re talking about bringing in resources from Northern California, and it’s not just Pasadena that is calling for them — Glendale, Arcadia, they’re all calling for them, too.”

“We’ve got an absolutely outstanding fire department — but the reality is that when you’re looking at a significant incident that’s beyond our ability to manage as a day-to-day operation — it’s going to be awhile before we get there.”

A sobering consideration: According to Homeland Security, “uniformed emergency responders make up less than one percent of the total U.S. population.” Locally, Pasadena’s population of 146,166 (California Finance Department’s 2005 estimate) is served by 250 sworn police and 160 fire personnel.

BASIC RESOURCES: POWER AND WATER

Three fundamental resources most Pasadenans seem to take for granted will almost certainly be compromised during or immediately after the Big One: running water, electricity, and gas. Pasadena Water and Power (PWP) actively plans earthquake disaster scenarios. A key element of current rate hikes in effect July 1 is the Department’s decision to increase emergency financial reserves to around \$10 million per year — enough to operate the utility for 60 days in the event of a disaster. The Department also plans bond issues to generate \$200 million over the next two decades for replacing about 500 miles of seismically-sensitive, corroded water piping built before World War II.

Addressing needed water system improvements, PWP Assistant Manager Eric Klinkner told the *Pasadena Star News* in June that “first priority will go to providing sufficient flow for fire hydrants, getting water mains in good shape and creating seismic upgrades to wells in case of a substantial earthquake.”

Pasadena’s water supply itself is stored in reservoirs and “could be relied upon by PWP to serve the community for three to four days after a disaster,” PWP reported in a recent edition of the City’s *In Focus* newsletter.

In case Pasadena’s electrical power plant is damaged or the natural gas supply is cut off, PWP has established agreements to import power from the statewide grid and the L.A. Department of Water and Power system.

“But during a catastrophic event, even our local partners could be overwhelmed,” PWP Marketing Manager Scott Ushijima noted in the Department’s June issue of *The Conduit* newsletter. To address

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Are you ready?

The time to prepare for an emergency is before it strikes. Here are six simple but important tips from the City of Pasadena. For more, go to www.PasadenaNow.com and click on “Earthquake Safety Guide.”

- Pick “safe places” in each room of your home. A safe place could be under a sturdy table or desk or against an interior wall away from windows, bookcases and tall furniture that could fall on you. The shorter the distance to move to safety, the less likely you will be injured. (Injury statistics show that people moving as little as 10 feet during an earthquake are most likely to be injured.) Pick safe places in your office, school and other buildings that you frequent.
- Practice “drop, cover and hold on” in each safe place. Drop under a sturdy desk or table and hold on to one leg of the table or desk. Protect your eyes by keeping your head down. Frequent practice will help reinforce safe behavior during an earthquake.
- Build a kit. What you have on hand when an earthquake strikes can make a big difference. Plan to store enough supplies for everyone in your household for at least three days.
- Make a plan. Planning ahead is the first step to a calmer and more assured disaster response. Develop your earthquake preparedness plan and evacuation plan with your family. Inform guests, babysitters and caregivers of your plan. Everyone in your home should know what to do if an earthquake occurs. Assure yourself that others will respond properly even if you are not at home during an earthquake.
- Get training. Arrange for your neighborhood, business or institution to receive Pasadena Emergency Response Team (PERT) training offered by the Pasadena Fire Department. You’ll learn disaster preparedness, first aid, fire suppression and light search and rescue, all of which will be vitally important during and after a major earthquake or other disaster. Call (626) 744-7276 to arrange for training.
- Discuss earthquakes with your family. Everyone should know what to do in case all family members are not together. Discussing earthquakes ahead of time helps reduce fear and anxiety and lets everyone know how to respond.

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response in case of a wide damage scenario, PWP recently joined California's Water/Wastewater Agency Response Network (WARN). This voluntary group, affiliated with the State Office of Emergency Services, offers best practices in emergency preparedness, disaster response, and mutual aid assistance.

WAITING FOR HELP

The American Red Cross, though not a government agency, fills a significant rôle in emergency preparedness and disaster response and works closely with City of Pasadena officials. The San Gabriel Valley Pomona Chapter is actually headquartered in Pasadena and drills frequently with Pasadena's emergency responders.

After the Big One strikes Pasadena, the Red Cross will focus on immediate emergency disaster-caused needs: shelter, food, and clothing.

Dr. Rick Hinrichs served as Programs and Services Director for the local Red Cross chapter prior to his June appointment by President Bush and FEMA Director Chief Paulison to FEMA as coordinator for all federal response in the western United States.

Speaking on his last day working in Pasadena, he noted that the local chapter has identified and certified a number of evacuation centers throughout Pasadena — "shelter capacity is well over 10,000, and that does not include using places like the Rose Bowl."

Although it has taken criticism for its policy, the Red Cross does not publicize the location of these evacuation centers.

Ready to eat meals and other supplies are not pre-positioned, rather are stocked in Emergency Response Vehicles (ERV). This tactic allows the Red Cross to direct supplies to locations that are both high priority and deemed to be safe for mass care.

AT THE NEIGHBORHOOD LEVEL

Long considered only a tool for crime fighting, the Neighborhood Watch program is now augmented with emergency preparedness and disaster planning.

It only makes sense, says Fire Chief Downs, that if you've got neighborhoods coming together already that you incorporate emergency training. "So now not only are [neighbors] looking out for each other for criminal activity, but they're looking out for each other in the event of a significant earthquake," he says.



PHOTO BY CANDICE MERRILL FOR PASADENA NOW

Key players representing Pasadena disaster preparedness and response: (Front row) Cynthia Kurtz, City Manager; Lisa Derderian, Pasadena's Emergency Management Coordinator; Cathy Sproule, local Red Cross Coordinator of Disaster Volunteers; and Gloria Acevedo, Events Coordinator, Pasadena Water and Power Department. (Back row) Pasadena Fire Chief Dennis Downs; Pasadena Police Commander John Perez; and Jack French, Interim CEO of the San Gabriel Pomona Valley Chapter of the Red Cross.

Pasadena Emergency Response Team Training (PERT) is available for neighborhood associations, non-profit organizations and businesses. The full course, taught by firefighters, takes approximately twelve hours and the four modules include Disaster Preparedness, Fire Suppression, Medical and Light Search and Rescue.

The city is also benefiting from an innovation developed by a Leadership Pasadena team which worked to bridge local faith-based communities to the city's resources. Sue Clark recounts that her eight-member team learned from Katrina that at times of disaster people draw upon their faith for resources "that go beyond even the physical." Her team organized a summit held last April at which Pasadena city officials met with members of local faith-based organizations.

"It was really wonderful," says Ms. Clark, "that the city of Pasadena acknowledges that faith-based communities play a rôle, a very significant rôle, before, during, and after disasters."

She says that as one result of the summit, Harvest Rock Church, Church of the Angels, and number of other groups sent members through emergency preparedness training.

WHAT YOU SHOULD DO — TODAY — TO PREPARE

Allan G. Lindh, Chief Seismologist at the U.S. Geological Survey in Menlo Park, is quoted as saying (about the Big One) that "It's time to act as if the damn thing will happen tomorrow."

The only reasoned approach, it seems, is to take action now.

To quote Pasadena Police Commander Perez: "Whenever there is an emergency is not the time to start thinking about the emergency.

Fortunately, there are meaningful steps you can (and should) take today to prepare for the inevitable.

What should you do? Take time to log onto *Pasadena Now's* Reference Guide to "Surviving the Big One," online at www.PasadenaNow.com. You'll find links to some of the most useful City, Red Cross, and United States Geological Survey websites.

Equally important, experts suggest, is that you consider your personal rôle in your neighborhood. Become aware of the elderly and the infirmed, those who must depend upon others for their survival. Consider joining the Neighborhood Watch Program not only for crime prevention but as a way to organize your neighborhood to face emergencies.

Consider investing time in Red Cross or Pasadena Emergency Response Team (PERT) training. All Red Cross classes are free to those who wish to volunteer. Pasadena Emergency Response Team Training (PERT) is taught by firefighters. PERT may be taken over weekends.

THE BOTTOM LINE

Civil authorities and the Red Cross may be simply overwhelmed after the Big One strikes. Experts agree: you will probably be on your own — for days.

For Pasadenans, the real lesson of Katrina should not be that Louisianans were woefully unprepared for their Big One — which they knew would come one day — but that most of us are personally unprepared for our Big One, which we too know will come one day.

"Fingers are always pointed after a disaster," concludes Lisa Derderian, "but what it comes down to is your family being prepared."

Reprints are available. E-mail Editor@PasadenaNow.com
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