Los Angeles MAGAZINE

The Northridge Earthquake: "Like a Punch Delivered from Below"

It's been two decades since the magnitude 6.7 Northridge earthquake shook Los Angeles to its core. Richard Andrews presided over the Herculean effort to make the city whole again

Posted on 1/14/2014 9:20:00 AM by Ed Leibowitz

The damage from the 6.6 Sylmar earthquake in 1971 was substantial, but the Northridge temblor hit a larger area much harder.
Photograph courtesy of Henry Lehn/Visuals Unlimited

It was a beleaguered city that welcomed the Martin Luther King Jr. holiday weekend of 1994. Since the start of the decade, Los Angeles had been declared part of a federal disaster area five times because of floods, brushfires, and civil unrest. The death toll and devastation following the 1992

acquittal of the four LAPD officers accused of beating Rodney King had been worse than those of the riots that overtook Chicago after MLK's assassination. Only the tectonic plates beneath L.A.'s surface had remained calm. Or so it seemed.

At 4:30 a.m. on Monday, January 17, the Northridge earthquake struck. The up-to-30-second jolt killed 57 people, injured thousands more, destroyed houses and apartment buildings, and severed L.A.'s and the country's most crucial transportation artery, the Interstate 10. The temblor, which caused more than $40 billion in damage, became the costliest natural disaster in U.S. history, a designation it would hold until Hurricane Katrina hit in 2005.

As director of California's Office of Emergency Services, Richard Andrews led the state's relief and recovery efforts. He authorized the California National Guard to set up emergency tent cities, sent hundreds of engineers to survey tens of thousands of damaged structures, arranged the removal of hundreds of thousands of tons of rubble, secured $13 billion in federal funds, and oversaw the processing of more than 680,000 applications for relief. Within six weeks his office had delivered assistance to more disaster victims than the Federal Emergency Management Agency had served in the six months after Hurricane Andrew battered Florida and Louisiana in 1992. Because of decisions the emergency services director made the morning of the disaster, the section of the I-10 that was broken in two places along the Santa Monica Freeway was reopened in less than 90 days—two-and-a-half months ahead of schedule.

The response to the Northridge quake became a model for other states. California's government acquired a reputation for its focus and competence—an image that would fade too soon with the rolling blackouts, the recall election, and the budgetary fiascos of the ensuing years.

Andrews left the office in 1998. He has since acted as a consultant on disaster response and recovery for risk management companies and the World Bank. He also became a member of the U.S. Department of Homeland Security's Advisory Council and served as Governor Arnold Schwarzenegger's homeland security adviser.

As L.A. marks the 20th anniversary of the Northridge quake. we asked Andrews, now 72, to reflect on both the devastation and the shared sense of purpose that was so different from the recriminations that marked the aftermath of the 1992 riots. He also talked about a potentially troubling future in which California may prove vulnerable when the next big one comes.

My wife and five-year-old son were in Sacramento with me for the holiday weekend. I lived in the state capital because of my job. But we maintained our residence in Southern California, out in Redlands, because my wife was deputy superintendent of the Redlands Unified School District. We were asleep when the phone rang. Ironically it was my wife's boss. "Hey," he told me, "we're just having a big earthquake down here." It was a minute or two after the quake, and I had yet to receive notification from anybody at my office. I left for work, and I don't think I saw my family for the next two- and-a-half weeks.

Governor Pete Wilson (above, left) with Richard Andrews at the interchange of the I-5 and Highway 14

Arriving at OES headquarters, I realized I was among the first ones there. Maybe six months before, we had purchased a new earthquake alert system that was supposed to be the state's link to the seismic networks at Caltech and the U.S. Geological Survey in Menlo Park; we could then quickly get a readout estimating an earthquake's magnitude and location. But we had not had a large-magnitude earthquake since the warning system was installed. We didn't realize that when the magnitude reached something like 6.0 or above, it would trigger this piercing siren sound. It was deafening. We couldn't figure out how to turn it off. Finally I tried hitting the escape key, and the noise stopped. It was a rather traumatic start to the day.

In short order the cabinet secretary in Governor Pete Wilson's office patched me through to Wilson at his Sacramento residence. He was awake. The water in his swimming pool was sloshing out, so he knew something was going on. I then called James Lee Witt, who was the director of FEMA, and asked him to put all of the national search-and-rescue teams on alert for possible deployment. This was probably in the first hour or so. We really had no idea how extensive the damage was, and it was just starting to get light.

I took a turboprop plane with Wilson and the head of the California Highway Patrol from Sacramento to Los Angeles. We knew there had been damage to the freeway system, so on the flight down we were poring over maps of Southern California and trying to locate the places where we knew there would be freeway interruptions. We began talking about the strategy that we would eventually employ later that day of fast-tracking contracts to get the debris cleared and the repair work under way on the freeways. That proved to be one of the smartest things we did, because not only did it shorten dramatically the time to get the freeways back up and running, it also sent the public a signal that somebody was in charge and taking action quickly to address some of the major problems.

After we landed in L.A., we boarded an LAPD helicopter and took an aerial tour. We saw the damage to the Nordstrom out in Canoga Park, the freeway collapse at the 14/I-5 interchange and along the I-10 toward Santa Monica.

What was most surprising to us as we flew over was that you would have pockets of damage, and then you would go into another area and there was no apparent damage, and then farther along there would be another pocket of damage. There was a pretty strong correlation between the nature of the soils in a particular neighborhood and the damage. Where you had soft, sandy soil—in some cases old dry creek beds—that's where you tended to see the most destruction. And then maybe a few blocks away you had much harder soil, either rock or clay, and there was no apparent damage.

There was a considerable amount of uncertainty initially because the earthquake happened on something that seismologists call a blind-thrust fault, where there's nothing visible on the surface to let you know that a fault is present. My understanding was that the seismological community did not know this particular fault even existed until the Northridge earthquake.

I had pretty good contacts within the scientific community and within the engineering community. Right away we started to get reports from some of the scientists surveying the field that there was a lot more damage over a much larger area than what we had seen in the 6.6 Sylmar earthquake in 1971. A lot of that had to do with the nature of the fault itself. The San Andreas is a strike-slip fault, where you get much more horizontal movement and not as much vertical displacement. But the blind fault that caused Northridge had a strong vertical component. It was like a punch delivered from below the earth.

It took some time for us to fully understand how much damage there was in areas like Fillmore and parts of Ventura County. In Santa Monica there was some very serious damage, mostly to large buildings. None of them collapsed, but had that earthquake gone on for another five to ten seconds, there were several apartment buildings in Santa Monica that might have. They had been seriously stressed.

We flew back to the LAPD heliport and then over to City Hall to meet with Mayor Richard Riordan and his staff. The mayor's hair was standing straight up. When the earthquake happened, he must have just jumped out of bed, thrown on a sweatshirt and a pair of pants, and gone out the door. The mayor was clearly in charge. He was enthusiastic and energetic, and we were all impressed with him. Willie Williams, L.A.'s police chief at the time, was also there. He was immaculately dressed. He wore a pin-striped suit, cuff links, and highly polished shoes.

A hard-hit parking structure at Cal State Northridge. Photograph courtesy of Mark J. Terrill/AP Photo

I had been in L.A. leading OES's response to the 1992 riots. The tensions throughout the city then made it a difficult and dangerous time to be doing the kind of work that emergency services people do. Residents had been let down by the public safety officials, the unrest had been allowed to go on far too long, and people were looking for somebody to blame. Everybody was upset at somebody else for very good reasons. You don't have that with most natural disasters, and after the Northridge quake the mood was the polar opposite. With an earthquake, there's nobody to blame. I suppose you could blame your housing or the condition of your office building. But the way Northridge impacted the community, people naturally pulled together.

Still, the spirit of community you often see in the immediate aftermath of natural disasters—of neighbor helping neighbor—does tend to wane during the long recovery. The process is not fun for anybody. There are a lot of contentious issues, particularly with regard to an earthquake. If you're recovering from a flood or a fire, it's clear: Either your home or building flooded or it didn't; it burned

or it didn't. With earthquakes, it's all shades of gray. Often you won't know right away the full extent of the damage to homes and buildings because it's not obvious.

You've heard the phrase "lawyer up" when people get into litigation mode? Well, after an earthquake, you'll have people who "engineer up." Everybody's got their own engineer, and everybody's engineer has got their own opinion about what ought to be done, how badly the building is damaged, what repair strategy ought to be used. So things become protracted and difficult, and people often become frustrated at the slowness of the pace. You just can't put Humpty Dumpty back together that quickly.

We set up our recovery office in Pasadena. One of the things we had to do to secure a federal grant—after the federal disaster was declared—was to give the estimated dollar impact. I was aware of a couple of companies that were looking into the possibility of modeling earthquake losses by running computer simulations for the insurance industry. You take data about the soil conditions and the building inventory in a particular area and then apply algorithms that express what percentage of damage you can expect from certain kinds of catastrophic events.

We worked with one of those companies to do a quick run. To my knowledge, it was the first time anybody had ever attempted to use those tools to project the financial impact in a real-time way during actual emergency and recovery operations.

In our letter to President Bill Clinton, I believe we projected the damage could be in excess of $30 billion. People thought we were out of our minds. As it turned out, after months of evaluations and detailed assessments of individual buildings and the business interruption costs and everything else, the final estimate was around $40 billion.

Throughout the recovery process there was a lot of cooperation between the federal government and us, but there was also a lot of tension. In Washington the realization set in that this was going to be very expensive—beyond what FEMA was in a position to afford. California's building codes are some of the most stringent in the country. For certain buildings—schools, the UCLA Medical Center, fire stations, and communications facilities—our state codes preempted those of local government. Of course the stricter the codes, the more repairs are going to cost. Some people at FEMA thought our codes were too stringent, and they became skeptical about what the state was doing.

Rubble in an apartment bedroom at Northridge Meadows, where 16 people died. Photograph courtesy of Roger Ressmeyer/Corbis

On balance, though, Washington was remarkably responsive. They threw more at the Northridge response and recovery than they had thrown at any other disaster up to that time. Of course there was a presidential election coming. California was important to Clinton, who hoped to win reelection. But also Wilson was considered to be a serious contender for the Republican presidential nomination at the time. So there weren't a lot of the kind of Barack Obama-Chris Christie bear-hug moments like you had with Hurricane Sandy.

How I got into his field was by serendipity. I was a tenured history professor at the University of Redlands when a former student of mine was appointed director of a federal earthquake preparedness project after the eruption of Mount St. Helens in 1980. Around that time President Jimmy Carter's science adviser was concerned about the possibility of earthquakes in Southern California. This was an era of optimism within the scientific community, that earthquake predictions might soon become possible. I just happened to be on sabbatical when my former student asked if I would help out with the setup. I was brought in on a ten-day consultant contract. I enjoyed the work a lot and stayed with

it. About a year and a half later I had given up my university position and was appointed head of the California Seismic Safety Commission. From there I went to OES.

I was under consideration for heading FEMA at the beginning of President George W. Bush's administration in 2001, before Joe Allbaugh was selected. Allbaugh had been the head of Bush's presidential campaign and was appointed FEMA director with really no background in the field. In 2003, Allbaugh left and his deputy, Michael Brown, took over. When Brown resigned after Hurricane Katrina, I was offered the director's position, but I declined mainly because of personal considerations. My son was in his sophomore year of high school. I had missed a lot of his early years because of the work I was doing with the state, and I didn't want to relocate to Washington.

With the exception of some of the large fires in San Diego a few years ago, California hasn't had to deal with anything near the severity of a Northridge quake in the last decade. No major flooding or major earthquakes. No major terrorist attack. The systems that we have in place to share and process information, mobilize resources, and give guidance to the public in the event of a disaster are effective. But they also are fragile. With disuse, they have a tendency to atrophy over time.

The real difficulty in disaster response and recovery is maintaining the linkages and the connections between various agencies and jurisdictions—and the people in charge of them. It's almost a cliché in this field, but when disaster strikes, you don't want to be trading business cards with people on the tarmac in the middle of nowhere.

During Wilson's first administration, every year on average brought a new catastrophe and a new Presidential Disaster Declaration. We got very good at keeping those linkages and connections in the 1990s, not because we were uniquely talented or uniquely capable by any means, but we just had a lot of stuff to deal with. We were almost constantly in either an emergency response mode or in a recovery mode—not only at the state level but also for local jurisdictions.

I worry sometimes about the capacity of various agencies and jurisdictions today to communicate with one another during disasters—their ability to know what everyone is doing. Again, the people who are responsible for these functions at both the local and state levels are professional, they're well trained, but considering that they lack the shared experience that comes from real events happening, who knows?