# GOVERNMENTS RESPONSE TO THE NORTHRIDGE EARTHQUAKE pdf

## 1: Southern California Earthquake Data Center at Caltech

*The government's response to the Northridge earthquake hearing before the Subcommittee on Government Management, Information, and Technology of the Committee on Government Reform and Oversight, House of Representatives, One Hundred Fourth Congress, second session, January 19,*

Although given the name "Northridge", the epicenter was located in the community of Reseda; it took several days to pinpoint the epicenter in detail both communities are neighborhoods of the City of Los Angeles. I skyway after earthquake. The collapsed section is near the supporter beam. The exact number of fatalities is unknown, with sources estimating it at 60 [1] or "over 60", [15] to 72, [16] where most estimates fall around The Northridge Fashion Center and California State University, Northridge also sustained very heavy damageâ€”most notably, the collapse of parking structures. The earthquake also gained worldwide attention because of damage to the vast freeway network, which serves millions of commuters every day. The most notable of this damage was to the Santa Monica Freeway, Interstate 10 , known as the busiest freeway in the United States, congesting nearby surface roads for three months while the freeway was repaired. Farther north, the Newhall Pass interchange of Interstate 5 the Golden State Freeway and State Route 14 the Antelope Valley Freeway collapsed as it had 23 years earlier in the Sylmar earthquake even though it had been rebuilt with minor improvements to the structural components. LAPD motorcycle officer Clarence Wayne Dean fell 40 feet from the damaged connector from southbound 14 to southbound I-5 along with his motorcycle. Because of the early morning darkness, he likely did not realize that the elevated roadway below him had collapsed, and was unable to stop in time to miss the fall and died instantly. When the interchange was rebuilt again one year later, it was renamed the Clarence Wayne Dean Memorial Interchange in his honor. The stadium was vacant at the time. Although several commercial buildings also collapsed, loss of life was minimized because of the early morning hour of the quake, and because it also occurred on a federal holiday Martin Luther King, Jr. Also, because of known seismic activity in California, area building codes dictate that buildings incorporate structural design intended to withstand earthquakes. However, the damage caused revealed that some structural specifications did not perform as intended. Because of these revelations, building codes were revised. Some structures were not red-tagged until months later, because damage was not immediately evident. The quake produced unusually strong ground accelerations in the range of 1. Damage was also caused by fire and landslides. The Northridge earthquake was notable for hitting almost the same exact area as the Mw 6. In particular, buildings with an unstable first floor such as those with parking areas on the bottom performed poorly. Numerous fires were also caused by broken gas lines from houses shifting off their foundations or unsecured water heaters tumbling. Damage to the system resulted in water pressure dropping to zero in some areas; this predictably affected success in fighting subsequent fires. Five days later, it was estimated that between 40, and 60, customers were still without public water service. However, school buildings K , which are required by California law to be reinforced, in general survived fairly well. Valley fever outbreak[ edit ] An unusual effect of the Northridge earthquake was an outbreak of coccidioidomycosis Valley fever in Ventura County. This respiratory disease is caused by inhaling airborne spores of fungus. The cases reported, of which three resulted in fatalities, constituted roughly 10 times the normal rate in the initial eight weeks. This was the first report of such an outbreak following an earthquake, and it is believed that the spores were carried in large clouds of dust created by seismically triggered landslides. Most of the cases occurred immediately downwind of the landslides. As a result, the state legislature passed a law requiring all hospitals in California to ensure that their acute care units and emergency rooms would be in earthquake-resistant buildings by January 1, Most were unable to meet this deadline and only managed to achieve compliance in or At the time of the quake, before dawn on Monday morning, the Warner Brothers film Murder in the First with Christian Slater , Kevin Bacon , and Gary Oldman was actually being filmed only four miles from the epicenter. Production, of course, came to a halt. The main courtroom set was in shambles. The building containing the set was later "red tagged" as unsafe due to the damage it sustained. The set, which is at ABC Television Center , suffered major damage, including partial structural collapse and water damage. All of the

earthquake sequences in the Wes Craven film New Nightmare were filmed a month prior to the Northridge quake. The real quake struck only weeks before filming was completed. Subsequently, a team was sent out to film footage of the quake-damaged areas of the city. The cast and crew had initially thought that the scenes that were filmed before the real quake struck were a bit overdone, but upon viewing the footage after the earthquake, they were reportedly startled by the realism of it. This article needs additional citations for verification. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed. Portions of a number of major roads and freeways, including Interstate 10 over La Cienega Boulevard , and the interchanges of Interstate 5 with California State Route 14 , , and Interstate , were closed because of structural failure or collapse. Roberts was chief bridge engineer with Caltrans and was placed in charge of the seismic retrofit program for Caltrans until his death in  Rail service was briefly interrupted, with full Amtrak and expanded Metrolink service resuming in stages in the days after the quake. Interruptions to road transport spurred Metrolink to experiment with service to Camarillo in February and Oxnard in April, [32] [33] which continues today as the Ventura County Line. Amtrak ceased service in the Pasadena Subdivision following structural damage to a rail bridge in Arcadia and halted all rail traffic. All MTA bus lines operated service with detours and delays on the day of the quake. Los Angeles International Airport and other airports in the area were also shut down as a 2-hour precaution, including Burbank-Glendale-Pasadena Airport now Bob Hope Airport and Van Nuys Airport , which is near the epicenter, where the control tower suffered from radar failure and panel collapse. The airport was reopened in stages after the quake. Universities, colleges, and schools affected[ edit ] This section does not cite any sources. Please help improve this section by adding citations to reliable sources. October Learn how and when to remove this template message California State University, Northridge , was the closest university to the epicenter. Thus, many campus buildings were heavily damaged and a parking structure collapsed ; as a result, many classes were moved to temporary structures. Los Angeles Unified School District closed local schools throughout the area, schools reopened one week later. University of California, Los Angeles and other universities were also shut down. The University of Southern California suffered some structural damage to several older campus buildings, but classes were conducted as scheduled. Entertainment and sports affected[ edit ] Universal Studios Hollywood shut down the Earthquake attraction, based on the motion picture blockbuster, Earthquake. It was closed for the second time since the Loma Prieta earthquake. Angel Stadium of Anaheim then known as Anaheim Stadium suffered some damage when the scoreboard fell into the seats. The major Hollywood film studios including Warner Bros. The recording venues Capitol Records and Warner Bros. Records were shut down at the time of the quake. Other buildings affected[ edit ] Numerous Los Angeles museums, including the Art Deco Building in Hollywood , were closed, as were numerous city shopping malls. The city of Santa Monica suffered significant damage. Many multifamily apartment buildings in Santa Monica were yellow-tagged and some red-tagged. The City of Santa Monica provided assistance to landlords dealing with repairs so tenants could return home as soon as possible. Radio and television affected[ edit ] This article needs additional citations for verification. NBC affiliate KNBC was the first television station to go on the air [35] while reporters and anchors Kent Shocknek , Colleen Williams and Chuck Henry were producing special reports[ clarification needed ] throughout the morning. The duo spoke to Los Angeles-area residents about their situation. Morgan , Rick Dees and Charlie Tuna were calling Los Angeles residents and others from their sister stations to bring their belongings to the stations and advising people not to drink water. Government and organization affected[ edit ] This section does not cite any sources. October Learn how and when to remove this template message The United States Postal Service suspended all mail service throughout the Los Angeles area for several days. The Los Angeles Public Library shut down most of its branches; books were knocked down during the quake. The Los Angeles City Hall suffered no damage. Vibiana suffered severe damage and canceled activities until a new cathedral was built in  The Church on the Way, which is near the epicenter, suffered some damage to the church campus building. The Martin Luther King Jr. Parade, scheduled to take place on January 17, was not held. Legislative changes[ edit ] The Northridge earthquake led to a number of legislative changes. Due to the large amount lost by insurance companies, most insurance companies either stopped offering or severely restricted earthquake insurance in

California. In response, the California Legislature created the California Earthquake Authority CEA , which is a publicly managed but privately funded organization that offers minimal coverage. Building code changes[ edit ] This section does not cite any sources. June Learn how and when to remove this template message With each major earthquake comes new understanding of the way in which buildings respond to them. Advances in the technology associated with testing systems, design and seismic modeling software, structural connections, structural forms, and seismic force resisting systems have accelerated dramatically since Northridge. There is an array of building forms and systems that are no longer legal to build. An example is the previously popular " soft-story " multifamily apartments. These buildings typically look like a three-story box on a narrow lot, where the upper two floors overhang the lower floor and are supported on pipe columns so cars can be parked underneath. Because the ground level is soft relative to the upper floors, the upper portion can sway and fall onto the carport below. This typically results in overhangs not exceeding three or four feet, compared to the 20 to 40 feet that were previously built. If an architect still wants this type of design, the structural engineer may specify that the previously used pipe column design be replaced with a laterally stiff steel "moment frame". This can also mitigate the problem of the soft-story structure by stiffening the soft ground floor.

# GOVERNMENTS RESPONSE TO THE NORTHRIDGE EARTHQUAKE pdf

## 2: The government's response to the Northridge earthquake ( edition) | Open Library

*The Northridge earthquake, though very different in cause and scope than the BP oil disaster, offers some lessons for an effective federal government response.*

Disasters often bring organizations together into recovery coalitions. Many people seem to behave differently during emergencies than they do under ordinary circumstances. When faced with a disaster, people become more cooperative and humane, rising above their conflicts and aloofness. But what happens among institutions? In particular, how do transportation institutions-from state highway departments to local transit authorities to private contractors-work together under crisis conditions? Do organizations enjoy a period of mutual respect as people do in personal interactions, or do they respond as rivals, weighed down by bureaucracy? If they can adapt to crises, can they also improve their day-to-day functioning afterward? In February , the Northridge earthquake in Los Angeles provided an opportunity to ask these questions. We at UCLA reviewed the memos, technical documents, contracts, and agreements executed during the earthquakes, plus media reports and transcripts of hearings held by various legislative bodies. Also important are preparedness measures, including emergency procedures, evacuation plans, search and rescue training, and effective telecommunications systems. For some types of disasters, it is feasible to work on prevention- for example, capital improvements aimed at flood control. The effectiveness of a response also depends on the specific circumstances surrounding the particular disaster-its magnitude, location, and time of occurrence. The Los Angeles quake struck at 4: Vertical integration is the degree of connection among local organizations and state and federal agencies. Vertical integration makes for open communication channels, resource exchange, common language of discourse, standard operating procedures, and agreed-upon ways of interacting. Effective response to disaster requires cooperation among all levels of government. Horizontal integration is the degree of connection among local agencies-the extent to which they are linked through communication, shared resources, and similarity of practice. Numerous local agencies affect transportation decisions. Cooperation among local agencies-those that are most directly involved with the affected community-is critical to successful response. The extent of vertical and horizontal integration must be considered both before the disaster and during the period of response and recovery. Actions taken in the first hours or days after the disaster-the period of emergency-include assessing priorities for immediate action, removing dead and injured people, shoring up precarious structures, and clearing roads. The period of emergency gradually gives way to the period of reconstruction, during which detours may be marked and roads repaired or rebuilt. Finally comes the period of recovery, when the transportation system may resume normal functioning and efforts focus on recovering economic losses and analyzing the experience with the aim of improving the predisaster phase of future disasters. Further, while most studies of the Loma Prieta earthquake found the response there quite successful as well, we found clear evidence that lessons gleaned from the earthquake effectively improved the response. Transportation officials from several state agencies collaborated to develop a quick response plan. That day, private contractors began demolition at four sites on damaged bridges. These companies worked on the basis of oral agreements with the California Department of Transportation Caltrans , backed by the Federal Highway Administration. Throughout the period of emergency local and state officials worked together to mark detours, which in some cases were changed several times daily to accommodate changing conditions. City sign shops painted paper signs, later replaced by more durable signs, for facilities both inside and outside their jurisdiction. Examples of vertical cooperation appeared at all governmental levels: The Governor declared a state of emergency; the President declared a national state of emergency; and the head of the Federal Emergency Management Agency, the Secretary of Transportation, and the Secretary of Housing and Urban Development flew to Los Angeles. These agencies followed preestablished procedures on emergency funding for transportation. In contrast, the degree of vertical cooperation during the Loma Prieta quake was lower, reflecting tension among local, state, and federal officials over which agencies should take charge of operations. In Los Angeles, officials decided early on to let local institutions lead the effort, with other agencies playing facilitative and supporting roles. They based their decision on revised federal law concerning

allocation of emergency funds, new operating procedures, and simple good judgment. However, local agencies have historically proved their capacity to cooperate under crisis conditions: While local agencies normally vie against one another for funds, influence, and prestige â€" or ignore one another entirely â€" they can become horizontally integrated and work together effectively when it really matters. After the Northridge quake, local agencies cooperatively reconstructed damaged highways. It should be noted that high levels of horizontal integration may have emerged in part because damage to the transportation system was localized. There was severe damage to a few bridges and high-capacity pavement sections, but no damage over an extensive portion of any roadway. Because damage was localized, officials agreed that the only reasonable course of action was to rebuild highways as they previously existed â€" as quickly as possible and without discussion, debate, environmental reviews, or public comment. By the time demolition was completed, Caltrans had detailed design plans, done mostly in-house but with some contracted out because of limited staff. The Loma Prieta quake had created a different situation. While only a small section of the Bay Bridge failed-causing instant consensus, similar to that in Los Angeles, that it should be repaired quickly â€" the Cypress Freeway, an older doubledeck freeway, failed over a considerable portion of its length, causing many fatalities. Rescue operations continued over several weeks before demolition started, and a study group began investigating the causes of failure. Soon, a viable opposition arose, influencing local politicians to demand an entirely new route. Today, the freeway has not yet been completed at the new location. In comparison, breaks in the Los Angeles system were repaired within a year. Similarly, the Embarcadero Freeway on the San Francisco waterfront, which was damaged in the Loma Prieta quake, was an extremely controversial structure that had never been finished. A ballot proposition to remove the Embarcadero Freeway was narrowly defeated in and communities remained deeply divided about its future. After the quake, it was torn down and a waterfront at-grade highway plan was adopted to replace the elevated freeway. Los Angeles further revealed its horizontal integration when local agencies provided transit alternatives to automobile transportation during the reconstruction period. A regional commuter rail system, Metrolink, uses existing rail rights-of-way, including lines near several failed freeway bridges two that stood in rugged terrain where few alternate highway routes existed. The county transportation commission, along with Metro link and many other organizations, arranged for speedy expansion of rail service, borrowing railcars from as far away as Washington state, and extending service beyond pre-earthquake limits. Several cities built simple new rail stations, often complemented by publicly provided van and bus shuttles that traveled between stations and employment centers. Local agencies augmented transit services in an amazingly short time â€" in just days or a couple weeks. Although increases in bus and rail patronage after the earthquake were rather small on some routes, or large but short-lived on others, the immediatechanges showed the potential for effective local response. Despite initial earthquake-related power failures, the city of Los Angeles ultimately used its Automated Traffic Signalization and Control ATSAC system to facilitate dramatic changes in traffic flows along arterial streets near some of the closed freeways. The ATSAC system monitors traffic flow through sensors buried in the pavement and alters traffic signal timing in response to changing traffic volumes. In selecting and forming the contracts for the engineering and construction of highway repairs, officials showed unusual flexibility. To spread the economic benefits of the reconstruction program widely, only one contract was permitted per contractor for each task. The city far exceeded its goal of hiring at least 20 percent minority or disadvantaged contractors. Subsequently, the contractor worked day and night, managing to rebuild the freeway in just 66 days, much faster than the days specified in the contract. Some frugal politicians complained that taxpayers had been taken to the cleaners. Should another major earthquake occur at a different time of day and at a different location, the resulting damage, injury, and disruption may be very different from the losses experienced in  It provides guidance, but the language is general and advisory, because a generic plan cannot precisely anticipate the best ways to deal with an earthquake of unknown magnitude, which may occur at any time and place. An effective response will depend on thousands of specific acts by people in different agencies at many levels of government and in the private sector. Like individuals in our communities, institutions tend to abandon their prior patterns of conflict over resources and indifference toward one another, quickly becoming cooperating partners. The Loma Prieta and Northridge experiences suggest that transportation organizations possess far

greater technical skill, organizational capability, and willingness to cooperate than are apparent in normal times. Bennett and David D. How a Prepared City Responded,  Peter May, Recovering From Catastrophies: Government Printing Office, March 2,

# GOVERNMENTS RESPONSE TO THE NORTHRIDGE EARTHQUAKE pdf

## 3: Six things we've learned since Northridge quake - CNN

*Epicenter. The earthquake struck in the San Fernando Valley about 20 miles (31 km) northwest of downtown Los Angeles. Although given the name "Northridge", the epicenter was located in the community of Reseda; it took several days to pinpoint the epicenter in detail (both communities are neighborhoods of the City of Los Angeles).*

Had the quake struck on a work day, the toll would have been greater. In fact, the Northridge quake occurred on a fault that no one knew existed. If a quake ever stirred there, it could evoke the disaster film "Earthquake. Scientists can now better map fault motions and the probability of future quakes. And researchers are better able to provide instantaneous information about quake locations and intensity. There has been a big leap in technology since the Northridge quake. Geological Survey and a visiting research associate at the Seismological Laboratory at Caltech. Out of the wreckage, a hero and love story The quake awakened Mike Kubeisy in his third-floor flat in the Northridge Meadows Apartments, which collapsed, killing 16 people, including six of his friends. As aftershocks roiled the land, Kubeisy began saving lives and pulled people out of the wreckage. He coaxed one shell-shocked woman named Trish in Apartment down a flimsy ladder, step by step. In all, he saved five lives. Then-President Bill Clinton later paid him a visit. I was just helping our neighbors out. He ended up marrying Trish in Apartment  Today, they have two sons, now teenagers. She was awake counting contractions. She was already eight days overdue. After the quake hit, she and her husband, Tom, maneuvered through the broken glass of their home and drove their car through an apocalyptic scene: At the hospital, they found shelter in a storage room rocking with aftershocks. Then a doctor told them they must evacuate: After an hour of searching for another medical center, they arrived at Northridge Hospital. But there were no more beds. She would deliver her baby on the floor. But her doctor found a gurney and a room. They named their son Ryan. But his nickname became Rocky. An hour after the birth, the new parents had to leave again: Eventually, they found refuge. The last big quake on the southern San Andreas occurred in  So, California, keep a survival kit at home. And do what experts taught us in school:

## 4: Northridge earthquake - Wikipedia

*Urban Search and Rescue Teams and Disaster Medical Assistance Teams were important elements in the response to the Northridge earthquake. The acute phase of the disaster ended within 48 to 72 hours and public health then became the predominant health-care issue.*

## 5: Los Angeles Times - We are currently unavailable in your region

*An incident command system for the field, hospitals, and government responders was necessary for an organized response to the disaster. CONCLUSION: Disaster preparedness, multiple forms of reliable communication, rapid mobilization of resources, and knowledge of available state and federal resources are necessary for a disaster response by a.*

## 6: Decision-Making After Disasters: Responding to the Northridge Earthquake â€“ ACCESS Magazine

*the governm ent's response to the northridge earthquake y 74/71n the gover nment s res po nse to the 1 e dmin g b e for e t he subcommittee on g overnment management information an dtechnology of t he.*

## 7: The government's response to the Northridge earthquake | Open Library

*The Northridge earthquake that struck at a.m. on Monday, January 17, affected an area of 2, square miles in the San Fernando Valley, a densely populated residential area of northern Los Angeles, California. 1 Three counties, Los Angeles, Ventura and Orange were affected by the.*

# GOVERNMENTS RESPONSE TO THE NORTHRIDGE EARTHQUAKE pdf

## 8: Northridge earthquake - HISTORY

*life, the Northridge earthquake deserves attention. sections-will include: lifelines/infrastructure, immediate public response, level of citizen preparedness, the recovery, and conclusions.*

## 9: Northridge earthquake

*In February , the Northridge earthquake in Los Angeles provided an opportunity to ask these questions. Further, it was possible to compare that experience with reactions to the October Loma Prieta earthquake in the San Francisco Bay Area, which was studied at UC-Berkeley.*

# GOVERNMENTS RESPONSE TO THE NORTHRIDGE EARTHQUAKE pdf

*Mostly Amusing, Always Amazingly True Memories The family circus Condoleezza Rice (Blue Banner Biographies) Urban air quality management strategy in Asia V. 1. Indonesia, Andaman Islands, and Madagascar. The king by skye warren Lets Read the Arabic Newspapers Rocks and Minerals (Spotters Guides Sticker Books) Conclusion : the multicultural complex and the incoherence of literary multiculturalism. Arabism and identity Trigun, Vol. 1 (Trigun) Reel 339. Rock Island County (contd: ED 101 Daily 5 student tracking sheet How trade became an affair of state : the politics of industry, 1381-1640 Accounting volume 1 ninth canadian edition Performance of pefc formed by using pt-loaded activated carbon with cf3so3h in cathode J. Maruyama . [et Customized Botany Diet Dilemma Explained Music therapy trauma bridging theory and clinical practice College funding made easy Notes of css in Esthers Children Discovery World Complete Trb An update on the emigration laws and policies of Albania Transition assistance Gof design patterns c Developmental Language Skills: Guided Practice Grammar, Usage, Mechanics The Reign of Elizabeth I (Questions and Analysis in History) Icai student journal july 2017 Domestic offenses : Judias Buenoano and Betty Lou Beets Greek Papyri from Kellis I (Dakhleh Oasis Project Monographs; Oxbow Monographs in Archaeology; Nos. 3 54) Precious Love (Black Satin) Misty Memories of Guard Island, Alaska The weight of peace Invitation to Sin (Black Lace) Maine j courtney sullivan Inheritance of historiography, 350-900 Away with waste! : reduce, reuse, recycle Constitution and by-laws of the Native Village of Perryville, Alaska The International Monetary Fund*