

**Kobe and Northridge Reconstruction
A Look at Outcomes of Varying Public and Private Housing Reconstruction Financing
Models**

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Abstract

The close timing of the Northridge and Kobe earthquakes offer a unique opportunity to compare and contrast reconstruction following two, devastating urban earthquakes. Regional conditions at the time of the earthquakes, general reconstruction strategies and neighborhood conditions all significantly influenced the housing reconstruction policies, programs and outcomes of these disasters.

Information presented in this paper is based on a study of factors facilitating or impeding post-earthquake redevelopment following the Northridge earthquake of January 17, 1994 and the Hanshin-Awaji earthquake of January 17, 1995. In this case, "redevelopment" means reconstruction that adds economic, functional, cultural, and/or safety value beyond pre-disaster circumstances. Data come mainly from six case study areas in severely-damaged urban districts of Los Angeles and Kobe.

Introduction

In rebuilding after a devastating earthquake, a community has the opportunity to improve on what was there before. This study considers the physical, financial, and institutional factors that can facilitate or impede such improvement. Specifically, neighborhood-level investigation is focused on quantifying the effects of: 1) property ownership patterns, 2) nature and availability of financing, 3) existence and impact of previous plans, 4) institutional framework (e.g. local government, planning agencies, community organizations), and 5) existing regulatory framework and government land use and redevelopment policies.

This work is significant for three reasons. First, it seeks recovery lessons for future catastrophic earthquakes by studying the two largest earthquakes to strike cities in advanced, industrialized nations in modern times. Second, it focuses on post-disaster redevelopment, by which we mean reconstruction that adds value beyond what existed before the earthquake. Third, it complements

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previous studies by examining a fine-scale of decision-making and physical change in selected districts within these metropolitan areas. In short, this project takes advantage of the unprecedented opportunity to study a variety of severely-damaged urban districts in two modern industrialized societies, in order to gain insights into the potential for post-earthquake redevelopment.

This paper first considers the overall policies, conditions and themes influencing reconstruction outcomes in both the Northridge and Kobe earthquake. Next, a closer examination is made of how these issues played out in six urban districts. Each urban district selected for this study met the following criteria:

- Experienced significant earthquake damage extending across the district, and beyond individual structures
- Has definable boundaries, and is an identifiable activity center within the city and includes sub-areas such as retail districts, residential areas, defined mixed-use areas, or land subdivisions.
- Designated by the city for some program of action
- Preferably located in a single planning district, council district, or ward, but this could be overruled by other considerations.

Groups of defined parcels within each urban district were identified for special study zones. These zones generally had heavy damage and allowed for more detailed study and data collection about physical and economic characteristics of a set of contiguous parcels. Study sites within each district were also selected to conduct more detailed case histories of individual land parcels, their owners, and tenants.

Housing Reconstruction following the Northridge Earthquake

The Mw6.7 Northridge earthquakes struck the Los Angeles region shortly before dawn on January 17, 1994. Fifty-seven people were killed, 20,000 left homeless, and 330,000 housing units were damaged and in need of repair (State of California, 1995). The total economic loss from this earthquake is estimated to be \$40 billion, with more than \$25 billion in property damages and about \$14 billion in insured losses (RMS, 1999). Residential structures account for half of the property damage costs and more than 65% of the insured losses (Comerio, 1998).

Critical Conditions at the Time of the Northridge Earthquake

The 1994 Northridge earthquake hit Southern California in the midst of an economic recession. Real estate prices were low and vacancy rates were high, creating a mix of challenges and opportunities for post-disaster redevelopment. Many residential homeowners and apartment building owners had lost equity in the downturn, and their loans were valued higher than the properties.

Ninety percent of the earthquake's damage was concentrated in the San Fernando Valley region, north of downtown Los Angeles (State of California, 1995). In the valley, 60% of all homeowners had earthquake insurance, but renters and owners of rental housing and small businesses generally lacked recovery finance resources. Vacancy rates in rental housing were

high. The renter profile included young professionals without ties to the neighborhoods, older people living on fixed incomes, and immigrant populations, often living in severely overcrowded conditions.

General Reconstruction Strategies following the Northridge Earthquake

The Northridge Earthquake caused widespread damage to roads and freeways across the region, threatening business resumption in an already slow economic time. Consequently, transportation restoration was a high priority with local, state, and federal agencies. With insurance covering a high proportion of the recovery finance need, housing and commercial reconstruction policy from public agencies evolved on a mostly ad hoc basis. The Los Angeles Mayor's office and the City Council's earthquake recovery committee were key leaders in defining reconstruction policy for the city.

Housing-related programs in the City of Los Angeles tended to react to post-disaster conditions and the US Housing and Urban Development (HUD) was an instrumental funding source. Some of the city's key recovery programs and tools include:

- Designation of "ghost towns" in areas with high residential damage concentrations and housing recovery programs
- Adoption of a housing recovery loan program (administered by the city's Housing Department) and focused on residential rehabilitation, particularly multi-family rental housing rehabilitation
- Formation of post-earthquake redevelopment districts for targeted neighborhood recovery efforts
- Adoption of a commercial loan program (administered by the city's Community Redevelopment Agency) focused on business rehabilitation.

Study Districts in Los Angeles

The three urban districts selected for the Los Angeles portion of this study are: Sherman Oaks, Hollywood, and Canoga Park.

Sherman Oaks located in the San Fernando Valley had the highest concentration of damages of the three study districts. It is also of interest because it had no area-specific city planning policies applied to its recovery. In fact, most citizens in the community rejected an earthquake redevelopment area designation. It did, however, have two significant "ghost towns" designated by the City Housing Department. Sherman Oaks is a relatively high-income area, and it relied heavily on private resources for recovery.

Hollywood is the best example of an area with a pre-existing planning effort in place at the time of the earthquake and there are pockets where significant post-earthquake redevelopment has taken place. Like Sherman Oaks, Hollywood also had heavy damage; but, in contrast to Sherman Oaks, it has a significant low-income area with a large immigrant population. Hollywood has utilized significant government intervention in its recovery.

Canoga Park represents a middle ground, an area of moderate damage and moderate incomes. The city designated part of Canoga Park as an earthquake redevelopment area, and the area also contains a ghost town. Even so, this was not an area that received much public attention and recovery progress has been mixed. Prior to the earthquake, Canoga Park's neighborhood serving commercial district was undergoing change in response to neighborhood demographic trends of increasing Latino and Asian populations. This area provides an important opportunity to assess how pre-existing economic conditions influence recovery.

A Closer Look at the Causes and Outcomes of L.A.'s Key Housing Strategies, Programs and Outcomes

In the months following the earthquake, the LA Housing Department (LAHD) estimated that there were over 19,000 vacated housing units, and an additional 10,000 units "at risk" for abandonment (City of Los Angeles, 1995). Most of these units were located in low-rise, wood-framed apartment buildings, built in the 1950's to the 1970's. Many of these buildings suffered from "soft story" failures, and many were repairable. Apartment building owners generally lacked insurance or discovered that their high deductibles were prohibiting repairs. Deflated property values, declining rental income and high debts limited owners abilities to get loans and make repairs. These clusters of damaged and abandoned buildings became good hideouts for gangs and incidents of crime and prostitution soon erupted.

The city of Los Angeles identified 17 "Ghost Towns" which met its criteria of residing in one or more of the 38 Census tracts that had more than 100 vacated units and more than 60% of the housing units were either heavily damaged or destroyed (City of Los Angeles, 1995). It was feared that these pockets of damaged and abandoned apartments and condominiums risked additional property foreclosures and the spread of vacancies and blighted conditions. All total, LA's Ghost Towns contained about 1,000 properties and 17,000 residential units, of which 7,400 units were in vacant buildings (City of Los Angeles, 1995).

LAHD formed a special division to monitor Ghost Town progress. LAHD and other city departments prepared a security plan for the neighborhoods and got special funding from the U.S. Federal Emergency Management Agency (FEMA). Property owners were surveyed about repair plans and LAHD found that most did not have insurance, did not qualify for the U.S. Small Business Administration (SBA) loans, and were unable to get private loans or alternative forms of commercial financing. The SBA's disaster loan program treated apartment owners as businesses, and under guidelines at the time, businesses could receive a maximum loan of \$1.5 million, with a 3.65% interest rate, and applicants faced significant financial disclosure and credit requirements.

LAHD obtained \$320 million from the U.S. Department of Housing and Urban Development (HUD) to provide loans to residential property owners that were declined by the SBA. A large portion of this funding (\$240 million) came in the form of in community development block grant, which gave LAHD more flexibility in how it was used, and many documentation requirements were waived to speed recovery. Property owners were allowed to take out loans of up to \$35,000 per unit, with a 0% interest rate and payments could be deferred for 5 years. Funds had to be used to repair damage and the repairs had to meet the latest building code standards.

Also, LAHD required that 20% of all rental units in buildings repaired with these loans must be “affordable” (i.e. available at below market rental rates).

By December 1995, most of city funds had been loaned, and by January 1996, more than 65% of the Ghost Town units had loans and repairs were underway (City of Los Angeles, 1998). By January 1999, nearly all units were repaired and loan payments were beginning.

LA’s Ghost Town loan program successfully rebuilt damaged housing and stabilized neighborhoods. The loan program focused on repairs, and matched the damage need. Only 500 units were demolished, which reduced the recovery time involved in demolition and full reconstruction. The loan program was not initially well suited for the ownership block at the time of the earthquake, and many pre-existing owners lost investment. The affordability inclusion was a redevelopment betterment in Ghost Town neighborhoods.

LA’s public and private financing programs did not match well with the needs of damaged condominium owners.

Housing Reconstruction following the Kobe Earthquake

The Mw6.9 Kobe earthquakes struck the Kansai region of central Honshu, Japan, shortly before dawn on January 17, 1995. More than 6,400 people were killed and 15,000 injured, 400,000 were left homeless and 240,000 needed shelter. Greater than 200,000 buildings were damaged or destroyed. Fires consumed 82 hectares of urban land, and there was widespread road, water, gas, and sewer system damage ((Lee, 1998). The total economic loss from this earthquake is estimated to be \$150 billion, with more than \$100 billion in property damages and less than \$10 billion in insured losses (RMS, 1999). The majority of the insured losses were to commercial structures and uses.

Critical Conditions at the Time of the Kobe Earthquake

At the time of the earthquake, Japan and the Kansai region were in the midst of an economic recession that had lowered land prices and raised commercial vacancy rates. Kobe’s economy was in transition, away from heavy industry and toward office, service, and retail sectors; unemployment rates rose quickly following the quake. Kobe’s heavily damaged, central core was losing affluent population to new suburbs prior to the quake, and now the conditions were accelerated. Key victim groups, including the elderly and immigrants, had limited personal resources to finance recovery. National policies and market conditions limited private insurance availability and coverage. Therefore, insurance companies directly financed less than 10% of Kobe’s total loss.

General Reconstruction Strategies following the Kobe Earthquake

The lack of private recovery resources in Kobe necessitated a top-down, government-led, reconstruction planning and implementation process unlike any experienced in any other post-World War II industrialized society. The national government implemented a two-month moratorium on reconstruction, which may have forced planning and policy development, but it was also performed so early on that it lacked full knowledge of damage and impacts.

Hyogo Prefecture and Kobe city adopted complementary restoration plans, prioritizing projects to stabilize the economy and attract new businesses. Plans also included large, pre-earthquake urban redevelopment projects. Government funding went first for public facilities and infrastructure rehabilitation, and later came a suite of residential and commercial grants and loans. Government-funded planners worked with neighborhood groups to build consensus and negotiate complex agreements needed to implement the plans.

Some of the city's key recovery programs and tools include:

- Land readjustment projects, which involve the modification of property boundaries for future road widening projects, open spaces and other public facilities; no actual construction occurs with these projects.
- Urban redevelopment projects, which involve the land readjustment process and subsequent construction projects, such as road widening, open space development, public facilities and mixed-use commercial and residential development; usually done under total purchase schemes
- Projects for residential areas, which apply to either scattered site development of residential buildings, or development of new neighborhoods that not only includes new residential buildings, but city-wide development goals; both varieties can have land readjustment and urban development components (Takahashi, 1999).

Study Districts in Kobe

The four urban districts selected for the Kobe portion of this study are: Shin-Nagata, Misuga, and Shin-Zaike. A portion of the city of Ashiya is also included in the study.

Shin-Nagata is similar to Hollywood with a pre-existing planning effort in place at the time of the earthquake. Shin-Nagata South is an urban redevelopment area, and Shin-Nagata North is a land readjustment area.

Misuga is a low- to moderate-income area that was severely damaged by fire. It contains a mix of residential and commercial land uses. The study area was designated as a land readjustment area.

Shin-Zaike was designated as a “gray zone” area where several unique recovery strategies have been applied, particularly in rebuilding the multifamily residential housing stock. The area contains a mix of residential and industrial land uses. It is also known as a historic district with many of Kobe's old sake factories located there.

Ashiya is a fourth study area that was added in order to have an upper income perspective on recovery. The study area is the whole city, which is primarily a residential area. Residents relied heavily upon private recovery funding mechanisms.

A Closer Look at the Causes and Outcomes of Kobe's Key Housing Strategies, Programs and Outcomes

The City of Kobe's Housing Restoration Plan, issued only months after the earthquake, was developed as a 3-year plan to construct 82,000 units as follows:

- Public housing: 16,000
- Rental housing: 6,900
- Redevelopment-related housing: 4,000
- Semi-Public Housing: 13,500
- Private housing: 31,600 (4,600 by public subsidy) (City of Kobe, 2000).

When the plan was issued, it was estimated that construction of 10,000 units had already started. Rent reduction measures were established for both public housing residents and private housing tenants. As of June 2000, the city of Kobe reports that 14,877 municipal housing (public and redevelopment-related) units have been constructed. Other city departments report that there were 61,442 building confirmations filed by November, 1999, and 149,042 housing starts by December, 1999 (City of Kobe, 2000). It now seems likely that the actual numbers of housing starts will be nearly twice the planned number.

There are several potential reasons for the residential density increase, post-disaster. First of all, Kobe's catastrophic scale and lack of private financing resources instigated policy to quickly move ahead large-scale, pre-existing housing and redevelopment projects. Complex ownership patterns, compounded by land readjustment processes and lack of private resources, fueled an on-going, reactive, housing policy (particularly for cooperative housing and condominium projects). Density bonuses were used to compensate for land condemnation but there was no accounting for overall increases in neighborhood densities. The government's policies and programs for private housing reconstruction tended to favor full reconstruction and there was a more limited amount of funds for repairs, which encouraged demolitions and full-scale reconstructions. Government-funded planners and the neighborhood-level planning processes have been critical in maintaining neighborhood continuity throughout the reconstruction period.

Observations and Conclusions

Both countries lacked a comprehensive approach to disaster recovery planning and financing (vision and timelines). National governments gave highest priority to rapid rebuilding of infrastructure. Existing programs did not match the damage needs of each event, and the actual damage and impacts took time to discover and quantify. Hardest hit districts were targeted for special attention in both earthquakes, but there was also a substantial need for coordinated, public and private financial assistance.

Kobe with its lack of private funding sources for housing recovery (particularly insurance) suggests that US strategies, relying strongly on market forces and focused government intervention, may not sufficiently address urban catastrophe demands. In California since the Northridge earthquake, residential earthquake insurance has become less available, more expensive, generally includes higher deductibles, and has less coverages (e.g. contents, additional living expenses). Residential earthquake insurance coverage will not be an equivalent source of housing reconstruction financing for future California earthquakes.

The LA experience demonstrates local governments' capacity for designing and implementing disaster recovery plans/financing. The U.S.' form of post-disaster block grant funding and the national trust of local staff helped speed both the funding and the recovery in LA.

The processes of post-earthquake planning in both cities reflect typical problems of local planning (e.g. multiple interests, conflicting goals, tension between local and societal needs). However, in a post-disaster setting, these processes are sped up within condensed time frames created by the need to restore normalcy as quickly as possible. Guided community participation in reconstruction efforts has many process-related and social benefits.

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