

PRE-DISASTER PLANNING: THE RESPONSE OF
RESIDENTIAL REAL ESTATE DEVELOPERS
TO SPECIAL STUDIES ZONES

Risa Palm
Office of Academic Affairs
University of Colorado, Boulder

Following the major urban earthquake occurring in the San Fernando Valley in 1971, the California State legislature took action to affect land use along active surface fault traces. The "Geologic Hazards Zones Act," sponsored by Senator Alquist and Representative Priolo was added to the California Code in 1972. This act has subsequently been amended several times, and its name changed from the original "Geologic Hazards Zones Act" to the current "Special Studies Zones Act." Among the modifications that have been made is a provision requiring real estate agents to disclose to prospective buyers the fact that property lies within the designated "special studies zone," an area about 1/8 mile on either side of an active surface fault trace.

The primary purpose of the legislation was to "prohibit the location of developments and structures for human occupancy across the trace of active faults" (Chapter 7.5, Section 2621.5). Cities and counties are charged to "require prior to the approval of a project, a geologic report defining and delineating any hazard of surface fault rupture" if the project is intended for human occupancy (Chapter 7.5, Section 2623). Exempted from such requirements were "single-family wood frame dwellings not exceeding two stories when such dwelling is not part of a

Funding for this research was provided by the National Science Foundation through grant CEE-8304664. Any opinions, findings, conclusions or recommendations expressed in this paper are those of the author and do not necessarily reflect the views of the National Science Foundation. Research assistant for this portion of the study was Jonathan Burbank.

development of four or more dwellings." In other words, the legislation was aimed at developers of four or more units and was intended to prevent further housing development directly astride active, known surface fault traces.

More than a decade has now passed since that legislation was enacted. Several previous studies (Brookshire and Schulze 1980 and 1982; Palm 1981; Palm et al. 1983) have addressed various impacts of the legislation. In general, one may conclude that there has been very little impact of the disclosure legislation on the resale of existing housing: (1) buyer behavior is not affected by the awareness of the fact that a given house is located in a special studies zone; (2) real estate agents seem to routinely disclose the special studies zone location when applicable, but the disclosure itself does not usually interfere with the sales process or the likelihood of the sale; (3) real estate appraisers do not usually note special studies zone locations in their appraisal reports and do not consider such location to have an impact on value; and (4) most home mortgage lending institutions do not make any special requirements or loan conditions (such as the purchase of earthquake insurance) on for properties located within a special studies zone.

But these were not the stated intentions of the Act. Instead, it was to affect the construction of new housing, and its impacts should be measured in this arena. Has new housing construction been halted within the special studies zones? If one travels along any given special studies zone in California, one is certain to answer "no." Instead, in recent years there have been large numbers of new housing developments within the zones, in areas where geologic reports have been required by the Alquist-Priolo legislation, and where development astride the surface fault trace has been proscribed. Indeed, as of July 1, 1984, a total of 79 geologic reports had been filed, one for each new large-scale development, along the San Andreas fault in the San Bernardino North and Harrison Mountain quadrangles near the city of San Bernardino alone. Similarly, more than 130 such reports had been filed for the special studies zone surrounding the Hayward fault in the San Jose East and Calaveras Reservoir quadrangles in Santa Clara County (Wong 1984). Obviously, large numbers of residential projects have continued to burgeon in the zones.

The legislation has not HALTED development, nor was it intended to do so. The question is: has it changed the nature of development? That is the topic which this preliminary study was to address.

CITY, COUNTY AND STATE OFFICIALS

In order to assess the impacts of the legislation on housing development within the special studies zones, two rounds of interviews were conducted during the spring and summer of 1985. The first was a set of interviews with a small number (8) of key officials responsible for reviewing the reports filed in accordance with the Alquist-Priolo requirements at the state, county or city levels of government. The purpose of these interviews was to assess the opinions of key individuals in the regulation process, to determine whether these individuals were aware of any influence the legislation has had on site selection for housing projects--an outcome explicitly intended by the authors of the legislation.

Survey Results

The state and county officials charged with reviewing the geologic reports were, in every case, experienced geologists. Many had worked in California for twenty years or more and had participated in the evolution of the land-use regulations at the state and county basis.

When asked whether the legislation had "affected building growth and development," most answered that development had not been prevented, but had been slightly modified. Developers rarely made major changes in their plans. One official said that generally there had been an improvement in the quality of construction and that the legislation had "resulted in a more thorough investigation of potential building sites." He continued by saying:

There has been some "dreambusting" on the smaller sites, where re-design is not feasible. Larger developers shift buildings around, or may align roads with the faults.

Most, however, indicated that there had been no major impact on development. What changed was the design of the development and the layout of buildings on the site.

Only on very small projects would there be any major adjustment.

When asked to comment on the quality of the reports received, most commented that the quality is uneven:

At first, geologists didn't know exactly what to do, how far to go in their investigations. Some reports were submitted four and five times until they got it right.

The quality of the reports range from terrible to excellent. Most are mediocre to barely acceptable. Some sites are difficult to evaluate--they may be graded before the investigation, or landsliding may obscure evidence of faults. Some geologists are poorly trained, and developers limit the amount of money spent on site investigation.

Halfway between great and lousy. Most geologists don't conceptualize the investigation far enough. They do have an incentive for a favorable report.

Another official underlined the effect of the legislation to transfer localized risk from the private to the public sector: When planning a site to conform to a special studies zone study, developers will put streets and utilities on or near the fault, complying with the mandated setbacks for the houses, but in effect transferring the risk and potential damage from themselves or the homeowner to the city and the taxpayers at large.

The other major impact observed by the government officials is that the requirement of a report has sometimes resulted in a delay in the development process, a delay that might be costly to the developer working on a tight schedule and with borrowed capital.

The major problem, from the point of view of city, county and state officials, is the quality of the reports submitted. One county official estimated that:

Seventy percent of the reports are inadequate and need work. Much of this is due to geologists who "grandfathered" into the registry of geologists and aren't up to par, or to geologists who do the reports even though this is outside their field of specialty within geology.

None of the officials was aware of any impact of the regulations on the price of housing. The geologic reports themselves would make up an infinitesimal proportion of the cost of an individual house, and most changes required as a

result of the report could be easily accommodated by slight changes in the configuration of the development at virtually no cost to the developer.

The officials gave several instances of *threatened* lawsuits over the geologic reports, although none that had actually gone to court. Litigation concerning the legislation had been undertaken concerning the disclosure portion of the law, but not over the actual geologic report requirement. However, some officials reported that there have been flagrant violations of the law. A senior member of the state regulating agency reported attending a conference at a center directly on the San Andreas fault in which a hotel, many single family homes and a 200-unit condominium had been constructed, but no report had been filed.

Despite problems, all of the officials were in agreement that the law has at least had the effect of providing direction and guidelines for local jurisdictions to evaluate the underlying geology and increased awareness of earthquake hazards at least to these jurisdictions. They felt the law was useful since there is no other way to prevent construction on active fault traces.

SURVEY OF MAJOR DEVELOPERS WITH PROJECTS IN THE ALQUIST-PRIOLO ZONES

Twenty of the major residential real estate developers who had developed large-scale single-family projects in the special studies zones since 1975 were interviewed in the second part of this study. The purpose of this set of interviews was to get information from those directly impacted by the legislation as to whether they felt it had affected their location decisions or development strategies.

Developers to be interviewed were selected on the basis of two criteria: first, each had filed the requisite geologic report for at least one project with the State of California, and second, each was still currently operating under the same firm name and in the business of residential property development.

In order to get perspective from a variety of metropolitan settings in both northern and southern California, interviews were conducted with developers with projects in Contra Costa County (the suburban area just to the east of

Oakland), Santa Clara County (which includes San Jose), San Bernardino County, Riverside County, and Orange County.

Survey Results

Most of the developers interviewed had been involved in real estate development in California for a substantial period of time: none less than five years, and one as long as 30 years. Most of them felt there is a moderate probability of a major, damaging earthquake--one as damaging as the 1906 San Francisco earthquake--within the next 20 years, and that there would be major damage to structures that were sited closer to the fault trace itself.

Developers stated that they usually do not make significant modifications to their plans because of special studies zones requirements, although at times, on the recommendations of consulting engineers, specifications on projects within the zones may exceed the requirements of the building codes in these areas.

Almost all felt that developers are not sufficiently discouraged by the special studies zones requirements to abandon their projects. On this issue, several did mention the costs of seeking a geologic report as a significant negative factor. It should be noted that even a fee of several thousand dollars to the consulting geologists would have but a minimal effect on total costs in a major project.

Most were not aware of litigation involving developers related to the special studies zones regulations, although several mentioned the problem of landslide-related litigation against developers in Morgan Hill.

Developers were divided as to the issue of whether the seismic elements of the Uniform Building Code make houses resistant to damage from a major earthquake. Most feel that the majority of developers adhere to the code, although a few do not.

Most claimed that they had never had problems in the filing of special studies zones reports--although two claimed that jurisdictions are sometimes unclear in the way they define the term "fault."

Most also anticipate a spate of lawsuits against developers in the event of a major damaging earthquake, and some feel that developers will end up as financially

responsible for rebuilding and recovery after a major damaging earthquake. On this point, others were equally divided in attributing financial responsibility to the federal government or to insurance companies.

Virtually all of the developers said that they felt the legislation was necessary, and that it is important to control development in an active earthquake fault zone.

In short, the developers indicated that they do comply with the legislation in hiring a consulting geologist to do the required report. From the point of view of the urban administrators, problems come from the quality of these reports and the types of modifications that the developers adopt to comply with the legislation.

DISCUSSION

The very large numbers of new large-scale developments that have taken place within the special studies zones corroborates the testimony of city and county administrators as well as of developers: large-scale and seemingly unabated development has continued to take place in the special studies zones. Indeed, development within the zones has proceeded in accordance with general growth of the metropolitan area and in response to economic opportunities; it has not been slowed by the existence of surface fault trace zones.

The conclusion of this study is not surprising, given previous findings on the response of home buyers, real estate agents, financial institutions, and real property appraisers to the special studies zones legislation (Palm 1981; Palm et al. 1983). Despite the fact the legislation was aimed at new development, and has imposed new requirements on residential property developers in filing geologic reports and requiring setbacks from the fault traces, there have been only minor and nonsignificant effects of development. Indeed, it could well be argued that the decision to locate utility and road rights-of-way along the fault traces may be even less in the public interest than the location of single-family homes here because of the much greater danger to which an even larger number of people are exposed if, for example, an underground gas main located on a fault trace breaks.

We are faced with a situation wherein fairly mild attempts at regulating the development of property in areas known to be susceptible to serious damage from natural hazards have been either ignored or turned to the benefit of entrepreneurs involved in the development or sale of property. If we are looking to legislation or the courts to provide some measure of protection to a general public many of whom are new to the region and unaware of the serious hazards they are purchasing along with their homesites, we will need to press for far more stringent measures and more consistent and strict enforcement.

REFERENCES CITED

- Brookshire, David and William Schulze. 1980. *Methods Development for Valuing Hazards Information*. Laramie: University of Wyoming, Institute for Policy Research.
- _____. 1982. *Methods Development for Benefit-Cost Analysis of Natural Hazards Information*. Laramie: University of Wyoming, Institute for Policy Research.
- Palm, Risa. 1981. *Real Estate Agents and Special Studies Zones Disclosure: The Response of California Home Buyers to Earthquake Hazards Information*. Boulder: University of Colorado, Institute of Behavioral Science, Program on Environment and Behavior, Monograph #32.
- Palm, Risa, Sallie Marson, Patricia Kellner, David Smith, and Maureen Budetti. 1983. *Home Mortgage Lenders, Real Property Appraisers and Earthquake Hazards*. Boulder: University of Colorado, Institute of Behavioral Science, Program on Environment and Behavior, Monograph #38.
- Wong, Perry. 1984. "Index to Geological Reports for Sites within Special Studies Zones." Sacramento: State of California, The Resources Agency, Department of Conservation.