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PRELIMINARY PAPER
#244

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THE NEED FOR A PROCESS*

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1996

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*Paper presented at the U.S.-Japan Earthquake Policy Symposium, Washington, DC, September 16-18, 1996.

POLICY ISSUES FOR POST-DISASTER MITIGATION: THE NEED FOR A PROCESS

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I. Topic Description and Policy Issues

When we think about the immediate consequences of a disaster, vivid images usually come to mind. In the case of earthquakes, the images are of twisted metal that were bridges or train tracks, blocks of crushed concrete and broken glass filling city streets, heaps of brick and mortar rubble that were once homes, and pancaked or collapsed structures that had been places of employment or schools.

When we visualize ominous earthquake scenarios with catastrophic physical damage and social disruption, we also envision the need to return that community to functionality quickly. We describe this process of recovery as "reconstruction," "restoration," "rehabilitation," and "redevelopment," terms that are often used interchangeably (cf, Haas et al. 1977; Kreimer 1978; Geipel 1982; Bates 1982; Oliver-Smith 1993; Bates and Peacock 1993). Certainly, in order to return the impacted community to some semblance of normal social functioning, the built environment must be replaced or repaired. People must have houses to shelter them, stores in which to shop, businesses to employ them, and offices to administer services of both local and national governments.

This paper takes the perspective that recovery from a major earthquake disaster should not be concerned merely with the reestablishment of the physical or built environment; that is, community recovery should not be conceptualized solely in terms of outcomes, but rather, it should be thought of as a *social process* that begins before a disaster occurs and encompasses decision making concerning emergency response, restoration, and reconstruction activities following the disaster. Put another way, reconstruction in the post-earthquake setting is less a technical problem than it is a social one.

In order for successful post-disaster decisions to be made, there must be an understanding that pre-disaster conditions and policies create situations of social and structural vulnerability, putting some segments of the society at greater risk in the event of an earthquake than others. From this perspective, what becomes important is the decision-making process itself. The questions that must be answered concerning this process include: how and when are recovery decisions made; who is involved in the decision making; what consequences do those decisions have on the social groups within the disaster-stricken community; and who benefits from these decisions and who does not.

The answers to these questions become especially important if our concern is to return the community to a less vulnerable state than before the earthquake; that is, to develop policies and organizational capacity to enact and enforce mitigation measures that will allow communities to resist damage and disruption from future high intensity, large magnitude earthquakes, not just return it to its former level

of risk.

The primary policy issues that need to be addressed, then, are:

1. How to establish this decision making process **before** the next damaging earthquake occurs; and
2. How to envision and enact the changes that can be made in a post-disaster environment to decrease the community's vulnerability to future damaging earthquake events.

Both of these policy issues must be addressed in the pre-event period rather than waiting until the earthquake occurs to consider how recovery should proceed. *Post hoc* solutions will not have the advantage of weighing alternatives with the maximum amount of both technical knowledge and information on organizational capability without pressure from the public to take immediate actions to remedy their problems. It must be understood that there is a definite tendency for people who have just experienced a devastating disaster to attempt to return to normalcy as soon as possible, not just for their material comfort and financial stability, but for their psychological well-being. People often become emotionally attached to their homes, neighborhoods, and communities which give a sense of stability and familiarity to their lives in a modern, rapidly changing world. Extremely damaging events shake the foundations of their taken-for-granted world when they see their city hall abandoned because of seismic damage, historic churches closed because they are unsafe to use, and popular landmarks disappear due to their collapse. They want the community to be as it was before the earthquake. Similarly, people do not want to change the traditional look of their community or of their homes; they want them rebuilt in a familiar style. Unless these concerns are addressed **before** an earthquake occurs, local officials will be under extreme pressure--not just from citizens but from the construction industry and the media--to allow rebuilding to take place quickly, without the time necessary to consider and implement new mitigation strategies.

II. Background

As we know from past experiences with extremely damaging and disruptive earthquake events, the post-disaster period is often characterized by inter-governmental confusion, both hierarchically and vertically. The need to assess damages and losses accurately as well as the need to dispatch resources effectively and efficiently led the Federal government in the United States to develop the Federal Response Plan following Hurricane Hugo, and the State of California to mandate that all communities utilize the Standardized Emergency Management System (SEMS) following the Loma Prieta earthquake. Both of these planning programs, however, refer only to the emergency response and relief periods. While these are extremely worthwhile efforts that improve organizational response during chaotic periods to ease human suffering and social disruption, they do not address issues of mitigation during the recovery period.

Pre-disaster recovery planning--that is, plans to return the community to some level of functional normalcy following a major earthquake--is only beginning in the United States. Such plans have three components: (1) recognizing issues and problems that will arise in the recovery period (e.g., the overwhelming demand on the local Building Department to provide demolition, rehabilitation, and reconstruction permits); (2) suggesting long- and short-term organizational strategies to handle these problems; and (3) identifying broader mitigation measures that can be implemented to lessen community vulnerability in the future. The few recovery plans that have been developed by communities to date have concentrated on the first two components, that is, on handling the immediate problems generated by the event. While this emphasis can have beneficial effects for speeding up governmental decision making during the recovery period and for facilitating private sector repair and reconstruction efforts, its major contribution may be to build organizational capacity and interorganizational cooperation within the local governmental system during non-disaster periods. Unless the third function is incorporated in recovery planning--envisioning a safer, less vulnerable community and what needs to be done to implement this concept--mitigation will be restricted to "tinkering" with current policies.

Even in a post-disaster period, it should not be assumed that a "window of opportunity" will allow for the easy adoption of mitigation measures, even if they are part of a recovery plan. A recent paper from the National Research Council (forthcoming) identified five factors that are associated with local governmental failures to adopt seismic hazard mitigation policies (e.g., seismic elements in the building code and land use plans that acknowledge seismic risks in development decisions). Those factors include: (1) perceptions among various stakeholder groups (e.g., property owners; developers) that enactment of the policy would devalue their property or reduce the desirability of its use; (2) a lack of technical knowledge among local public and private sector professionals; (3) a shortage of local financial resources to support the policies and procedures; (4) community decision makers' concerns that enactment of the policy could undermine the local economy, both by forcing relocation of businesses and households and by making the community less attractive for future economic development; and (5) generally low salience of the earthquake threat in the community, coupled with a belief among community decision makers that the public is less concerned about mitigating seismic hazards than about other local issues.

In a post-earthquake environment, the first four of these factors would still be present in an impacted community; and, despite their recent earthquake experience, many people would believe that a similar damaging event in the future is very unlikely (the "we've-already-had-our-earthquake" phenomenon). Although the earthquake experience is still fresh in their minds, the salience of a future damaging event declines quickly. Therefore, unless these barriers to seismic mitigation policy adoption are addressed in the recovery plan, the post-earthquake period will still provide few opportunities to implement new mitigation measures.

The recovery planning process can be divided into the three components listed above, each requiring different types of information and activities. However, for such a process to be successful, the integration of different governmental levels and different professional groups needs to take place at crucial points during the plan's development. While a plan and the policies it includes are the intended outcomes of this effort, it must be recognized that the planning process--the interaction of professionals, administrators, and decision makers--is itself fundamental to improving seismic hazard

reduction. It is from the development of a consensus about important problems, useful approaches and solutions, and intended benefits that the success of post-earthquake mitigation will result.

III. Proposal

Given recent experiences in both the United States and Japan with earthquakes that have resulted in excessive damage and social disruption, it is proposed that collaborative efforts be undertaken to address the issue of pre-earthquake recovery planning. It is suggested that four activities be undertaken:

1. Forum on Loss Estimation Techniques and Issues. In the Office of Technology Assessment's (1995) review of the National Earthquake Hazard Reduction Program, it was concluded that analytic techniques to predict the likely losses from a future earthquake would be extremely beneficial in determining what types of mitigation measures would be advantageous to individual communities. Certainly, in order to develop recovery strategies, communities must have some indication about the magnitude of the types of losses, damage, and disruption that a future earthquake could have. This information allows communities to develop recovery priorities and to identify a set of locally-appropriate post-event mitigation measures.
2. Workshop on Post-Earthquake Policy Problems and Solutions. This workshop would bring together administrative and elected officials to discuss the types of problems that occurred during post-impact periods (from early relief through long-term recovery) that have consequences for the reconstruction of the community. One focus of this workshop would be on legal issues that had to be dealt with in order for recovery to take place. For example, due to environmental regulations in the United States, community decision makers must make plans for how and where to dispose of debris that may contain hazardous materials (e.g., either toxic chemicals or asbestos), since the landfills that generally take this type of material may become overwhelmed by debris generated by a major urban earthquake. Of concern here would be the identification of existing laws and policies that impede the recovery process and that make the implementation of mitigation efforts. The purpose would be to change these laws and policies that would allow mitigation measures to go forward quickly in a post-earthquake environment.
3. Workshop to Evaluate Programs Needed to Assist in Community Recovery. This workshop would bring together both the public and private sectors to address issues of both household and business recovery needs. The focus of the workshop would be to look at both governmental and non-governmental programs that exist to support recovery and mitigation following an earthquake, to identify any gaps or unmet needs in these programs, and to identify any programmatic efforts that would not support mitigation objectives. For example, for homeowners with earthquake insurance, would insurance cover only "build-back" costs without covering costs to meet building codes with improved seismic design elements in them.

4. Community-Specific Symposia on Vulnerability Reduction. Selected communities would each sponsor a symposium that brings together representatives from major sectors and social groups in that community to identify vulnerability-reduction goals that could be addressed during the recovery period. This would, in effect, produce a broad outline for recovery and redevelopment planning, especially if the goals were generated for different areas/neighborhoods within the city.

IV. Cooperative Mechanisms

While each of these activities requires a slightly different mix of participants, it will be important to ensure that the groups include local community and government officials who will be required to make and implement post-earthquake mitigation and recovery decisions. This requires participation from local, state or prefectural, and national governmental representatives within each of the activities. Potential mechanisms for leading each of the proposed activities are identified below.

1. Forum on Loss Estimation Techniques and Issues. This forum could be organized as an International Scientific, Technical, and Professional Activity. Following from a successful multi-year collaboration that has produced four workshops on earthquake hazard reduction activities, it is suggested that the Earthquake Engineering Research Institute (EERI) and the Japan Institute of Social Safety Science (ISSS) have the lead responsibility for organizing this activity. Both organizations have access to both academic researchers and local decision makers who would have expertise in these techniques and have a sense of the practicability of different approaches.
2. Workshop on Post-Earthquake Policy Problems and Solutions. Using the Sister Cities program as an organizing vehicle, this workshop could be convened to bring together those community and governmental decision makers that were involved in post-earthquake recovery (including the early relief period where emergency sheltering was an issue) in Los Angeles and Kobe, along with their counterparts in Tokyo and Seattle. In this way, lessons, strategies, and programs that worked in both of the cities with earthquake experience could be shared with those cities that have not had recent experiences. Also, the Sister City concept could be broadened slightly to include local decision makers that dealt with earthquake recovery problems from the Hokkaido and Loma Prieta earthquakes.
3. Workshop on Programs Needed to Assist in Community Recovery. This workshop clearly falls within the framework of the Common Agenda for a U.S.-Japan Joint Workshop to identify program needs. While it would not be the purpose of this workshop to develop policy options, it could begin to identify policy and program areas that need further investigation in order for more informed policy options to be considered by the appropriate governmental or private sector entities.
4. Community-Specific Symposia on Vulnerability Reduction. A combination of the Sister Cities program and professional associations that deal with seismic vulnerability

(such as the American Planning Association, EERI, the International City Managers Association and their counterpart organizations in Japan) should jointly sponsor these symposia. By bringing together key decision makers in a community as well as professionals who are concerned with the adoption of mitigation measures, the principles of community vulnerability reduction could be explored. This activity would be unique; it has no precedent with respect to recovery planning.

V. Related Issues

One feature of these suggested activities must be kept in mind: they must be seen as an integrated set of efforts rather than discrete functions of different groups of people. If our post-earthquake recovery planning is to be successful, participation in these types of efforts will result in not just plans on paper, but in strengthened organizational relationships that will facilitate any type of post-disaster action must be carried out. While these activities should develop models for future recovery planning activities in both countries, they can also have the added benefit of making the communities that participate in them better prepared to deal with future events.

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