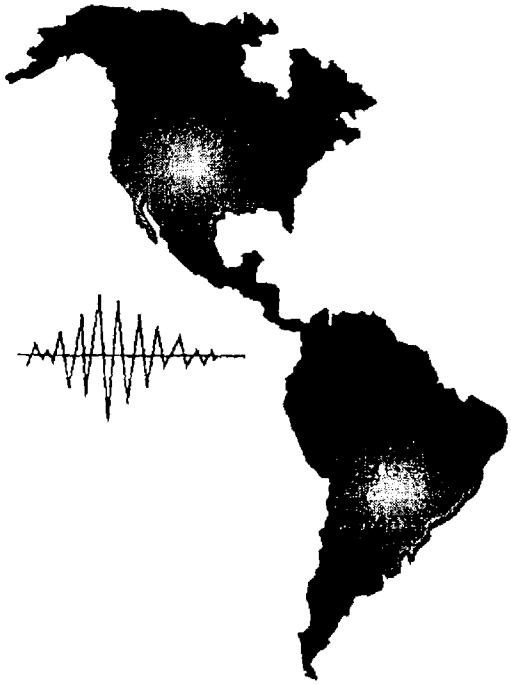
REHABILITATION AND RECONSTRUCTION FOLLOWING EARTHQUAKES:

A Guide for Local Officials



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U.S. - Latin American Partnership to Enhance Cooperation in Earthquake Hazard Reduction

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CHAPTER ONE

Introduction

After an earthquake strikes, local officials will be thrust into a world of unrelenting pressure, competing priorities, and endless decisions that have to be made - often without the benefit of adequate information Almost from the outset, there will be pressure from the populace to restore the community back to pre-disaster conditions. A collage of groups - professional, voluntary, community based, private sector, government - will forge new working relationships in the process of putting the community back together.

Earthquakes occur with regularity in the U.S. and Latin America, yet with few exceptions, not many communities have paid attention to disaster recovery planning. In most instances, however, the problems and issues are predictable - housing the displaced, restoring public facilities and services, stimulating business recovery, financing the rebuilding effort. Rehabilitation and reconstruction are, to a great extent, a generic process (even accounting for cultural, economic, and demographic differences)

Purpose

The premise of this Guide is that valuable lessons can be learned through a close examination of the experiences of U.S. and Latin American communities in pre-disaster planning and post-disaster rehabilitation and recovery

The purpose of this Guide is to translate the accumulated research and lessons into practical guidance for local officials who have a role and responsibility for managing earthquake rehabilitation and reconstruction efforts. These include: mayors, city managers, planners, engineers, public works officials, housing and redevelopment officials, geologists, and financial officers

Definitions

The term "rehabilitation" is used in the broadest sense, and refers to short term activities that are undertaken to restore basic services and repair damaged buildings following a disaster. The objective in this phase is to restore community life "back to normal" as much as possible. The Colombian model identifies four categories of rehabilitation functions: 1) Social - which includes services provided to disaster victims to meet basic human needs (medical, emergency shelter, basic sanitation, food, etc.); 2) Physical - which includes the restoration of utilities and other essential facilities and systems, 3) Economic - which includes the restoration of business activity, and the short-term revitalization of rural and urban production systems; and 4) Environmental - which includes short term restoration of damages to the environment and ecological systems.

Reconstruction refers to the medium and long term process of rebuilding the community. Central to reconstruction is the involvement of a broad spectrum of groups and organizations in the rebuilding process. Invariably there is tension and controversy, as groups seek to implement their vision of what the new community should be look like, and feel like. Urban form and design, housing, business recovery, and long term rebuilding of public infrastructure dominate the reconstruction phase.

The concept of "recovery" encompasses rehabilitation and reconstruction, and may be thought of as the long term process of community "healing " The recovery may last a decade or longer; in many instances, unprecedented opportunities exist to address some longstanding community problems through the redesign and rebuilding process.

Scope and Organization

The Guide has been prepared by practitioners, for practitioners, to assist local officials in preparing for the consequences of earthquakes. More specifically, the Guide is designed·

1) To enable local officials to anticipate the specific problems that will be encountered in each phase of disaster recovery

2) To provide local officials with an understanding of the range of pre-disaster measures that can be taken - from organizational and policy initiatives to specific actions, and

3) To provide local officials with recommendations on actions that can be taken after an earthquake to expedite rehabilitation and reconstruction.

The Guide has four chapters. Chapter 1 sets forth the purpose, scope and organization Chapter 2 examines the key organizational and planning issues that influence a community's ability to effectively manage the recovery process. Chapter 3 turns to Rehabilitation, and offers guidance to local officials on steps to take - before, during and after an earthquake - to facilitate this phase of the recovery process. Chapter 4 focuses on Reconstruction, and the lessons learned from previous earthquakes on housing reconstruction, agricultural recovery, and managing the reconstruction process.

C H A P T E R T W O

Organizing For Rehabilitation and Reconstruction

Responsibility for managing post-disaster rehabilitation and reconstruction rests with local government. This responsibility can be overwhelming and place a tremendous burden on local officials. In the aftermath of a major disaster, local officials are confronted with changing conditions, competing priorities, and unexpected demands. For communities that do not anticipate the problems and issues associated with recovery, the consequences are predictable. Confusion is magnified, lack of interagency coordination slows the pace of recovery, and most importantly, opportunities to rebuild more safely may be lost.

Organizational Considerations

A premise of this Guide is that the rehabilitation and reconstruction process is manageable provided that some prior planning and organizing is undertaken. Figure 1 outlines the key departments and organizations that need to be directly involved in pre-disaster recovery planning - and some of the major functions that need to be carried out. An examination of community recovery experiences in the U.S. and Latin America reveals the following lessons:

- A new organization may have to be formed (or a coalition formed of existing organizations) to guide the rehabilitation and reconstruction process.
- The organization should have the clear support from the jurisdiction's elected body for both the pre-disaster planning effort and post-disaster recovery operations.
- The organization should operate under streamlined procedures to ensure that decisions can be made quickly, and policies implemented to accelerate the recovery process.
- The organization should solicit legal counsel at the outset. Local officials should have a clear understanding of emergency authorities, and local ordinances (i.e. redevelopment, preservation, etc.) that affect available options.
- The organization should provide for public participation. Competing interests will surface almost immediately - business groups, preservationists, citizens groups, and others. Debates usually center on the need for change versus a return to the status quo.
- The organization should serve as a central coordinating body for the agencies and groups that have a role and responsibility for rehabilitation and reconstruction (before and after the earthquake). This means that before the disaster, a consensus needs to be reached on the roles, authorities, and responsibilities of each participating group.

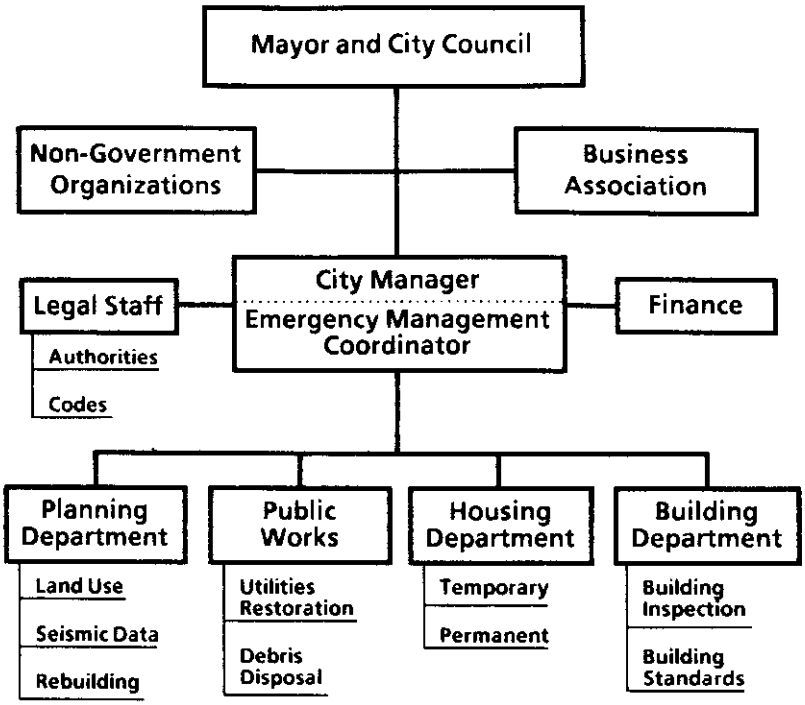
Foreword

This publication is the product of the working group on Recovery and Reconstruction, which convened in Indianapolis, Indiana, December 4-6, 1991, for the "United States - Latin American Partnership to Enhance Cooperation in Earthquake Hazard Reduction."

The conference, which was conducted by the Central U.S. Earthquake Consortium (CUSEC) in cooperation with nearly two dozen co-sponsors, brought together researchers and practitioners from throughout the U.S., Latin America and the Caribbean to share experiences and information on earthquake hazard reduction. The goal of the conference was to establish and foster ongoing working relationships that would be to the benefit of all. In the process, participants would gain a broader perspective of the problems, issue, and strategies associated with earthquake hazard reduction in the Americas.

Rehabilitation and Reconstruction Following Earthquakes: A Guide for Local Officials is intended for all practitioners who have a role in managing post-disaster recovery programs. The Guide draws on the lessons learned from recent earthquakes in the U.S. and Latin America, and the experiences of the working group members (see appendix). In preparing the publication, emphasis has been placed on providing "practical, usable guidance" for local officials. The contributions of the working group has made this possible.

Figure 1
ORGANIZATION FOR REHABILITATION AND RECONSTRUCTION
"Strong City Manager Model"



Planning for Rehabilitation and Reconstruction

A recurring theme of this Guide is that there is no substitute for pre-disaster planning and coordination. Working relationships can be established. Policies can be formulated and debated. Information gaps can be identified. Plans can be developed. Legislation can be drafted. These and other steps can be undertaken in an atmosphere that is free of the tension - and compressed timeframe - that is associated with disaster response and recovery. A six step planning process is provided below that will assist communities in preparing for rehabilitation and reconstruction.

Step 1: Obtain a policy directive

The starting point for a rehabilitation and reconstruction planning effort is a policy directive from the mayor or chief executive officer, directing that the planning effort be undertaken.

The commitment and endorsement of local elected leadership is critical to the success of the planning initiative, particularly in view of the range of local government agencies and departments that will become involved. One example of such commitment: in 1987, the Mayor of Los Angeles joined with local legislators to direct the City to undertake a series of studies that culminated in the preparation of a Recovery and Reconstruction Plan for the City of Los Angeles. The directive was important - it initially brought together the key agency heads to launch the planning process.

Step 2: Establish a planning task force

This task force or commission should be comprised of all departments or agencies that have responsibilities for rehabilitation and reconstruction. The organization may already exist; the task then becomes one of assigning responsibilities for recovery planning. Depending on the jurisdiction, the task force may be

a local, state, or national organization. In the U.S., for example, several states have multi-disciplinary emergency management councils that are well suited to coordinating predisaster and post-disaster rehabilitation and reconstruction activities. Costa Rica's Comision Nacional de Emergencias is just one example of a national organization that has responsibility for coordinating disaster mitigation, preparedness and recovery.

The nature and composition of the task forces or commissions will vary. The objectives, however, should be the same: to coordinate pre-disaster planning so that when the earthquake occurs, confusion is minimized and recovery is expedited.

Step 3: Conduct a vulnerability study

Planning needs to be based on accurate scenarios of the nature and magnitude of damages. The third step of the planning process is to conduct a vulnerability study of the key sectors that will be directly impacted by an earthquake, including: transportation (highways, rail, airports), communications, energy (electric and gas), health care, emergency services, and other facilities - such as shelters - that are essential to disaster response and recovery.

The community's population needs to be included in a vulnerability study. Disaster research and experience shows that the most vulnerable groups are the poor, the elderly, the disabled, and children. Information on these and other groups can be found with the city planning or community development department, organized by census district or other enumeration area. Armed with this information, the task force can pinpoint potential problems before the earthquake strikes.

Step 4: Identify major areas of concern

At this stage, the task force or commission should be in a position to identify major areas of concern that need to be addressed in a rehabilitation and reconstruction plan. These may include: debris removal and disposal, emergency shelter and long-range housing reconstruction, rehabilitation of water, power, and communications systems, rebuilding of public facilities and services, agricultural recovery, business recovery, and the identification of mechanisms for financing recovery.

Many of these issues or "areas of concern" have been addressed by Latin American nations in the process of implementing hazard vulnerability reduction programs for specific sectors. Costa Rica, for example, has undertaken a vulnerability reduction study for the energy sector. Ecuador has conducted a similar study of the agriculture sector. Jamaica has addressed the vulnerability of the tourism sector. In short, existing studies and data are available on high priority problems and issues; this information can be incorporated into a rehabilitation and reconstruction plan.

Step 5: Develop a rehabilitation and reconstruction plan

The product of the planning process should be a plan that includes: 1) The policy directive, organizational framework, and authorities for rehabilitation and reconstruction; 2) Vulnerability assessment of key sectors - housing, critical facilities, public facilities and services, business and industry; and 3) Outline of policies and actions to be carried out under each sector to expedite rehabilitation and reconstruction following an earthquake, or other major disaster.

Step 6: Test the plan

It is often said that planning process is as important, if not more important, than the plan itself. Without the active involvement and commitment of key players during each step of the process, the effort is doomed to fail

Testing the plan is a crucial step Policies, responsibilities and authorities need to be clearly understood Organizational capabilities - and limitations - need to be clarified. Gaps in the plan need to be identified These and other issues will surface during an exercise of the plan. At a minimum, it is recommended that key officials gather for a tabletop exercise that poses a series of "what if" questions. Based on the evaluation, the plan should be revised, finalized, and approved by the governing authority

Ten Important Lessons

This chapter will conclude with ten important lessons that have been gleaned from experiences around the world in the rehabilitation and reconstruction process.

1. The recovery process tends to accentuate social and political conflicts that existed prior to the disaster
2. Economic factors determine the nature and direction of reconstruction more than increased technical and engineering knowledge
3. Temporary housing may not be "temporary "
4. Planning for rebuilding is like a high-speed version of redevelopment planning.
5. Cities and towns are very seldom relocated after an earthquake
6. There will be tension between at least two camps - those who want to return as quickly as possible to the status quo, and those who want to use the rebuilding process to improve the safety standards and community quality of life.
7. Post-disaster coordination can be greatly facilitated by establishing beforehand a single organization representing all pertinent agencies
8. Coping with unsolicited goods and services can dominate the response and recovery process
9. The social process after an earthquake will direct the reconstruction along patterns already present prior to the earthquake.
10. Inadequate attention to the agricultural sector and rural populations can have serious repercussions.

The following chapter examines in more detail the elements of rehabilitation and reconstruction, with emphasis on those steps that can be taken prior to a disaster to expedite the recovery process.