

Chapter 2. RECONSTRUCTION ISSUES IN PERSPECTIVE

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The emergency, restoration, and reconstruction periods overlap somewhat in time, but the principal activities of each period are relatively distinct.

We turn now to a more detailed consideration of the reconstruction period with its issues and decisions, and the consequences thereof. Reconstruction issues can be better understood when viewed within two relevant perspectives. At the macro, or community, level it is important to examine reconstruction issues and decisions in the context of ongoing urban growth and development. At the micro, or family, level understanding of how reconstruction issues relate to family recovery problems will provide a complementary perspective. These two perspectives are utilized in the analysis and interpretation of the findings about reconstruction in the four cities we examined.

In this chapter we present these perspectives, without trying to document in detail their usefulness. We do this in order to put the discussion of reconstruction issues and decisions in the latter part of this chapter into a meaningful and realistic context. This is the focus of the book: what are typical issues and how are they likely to be handled?

Long-Term Trends Influence Reconstruction

While disasters produce death, injury, heart-breaking economic loss, and widespread disruption, recovery from disaster should not be seen as a set of issues, decisions and events occurring in isolation from long-term trends in the community. The drama of the emergency and restoration periods fades, and the ongoing forces that produced the characteristics of the predisaster city reemerge as the primary determinants of the city of the future.

Reconstruction following disaster compresses in time, exaggerates

in process, but does not basically change the growth and evolution of cities. Most western metropolitan areas are growing and changing all the time. Three principle evolutionary processes of urban growth have been identified:

1. gradual spatial separation or segregation of increasingly specialized business and governmental functions and socioeconomic residential groupings;
2. ongoing simultaneous trends toward centralization and decentralization with respect to the core area of the city; and
3. continual areal expansion by type of activity both within and on the periphery of the city.

The forces behind these evolutionary processes of urban growth and development may seem to be suspended for a few weeks after disaster impact. There is often a feeling that suddenly the stability of the predisaster days is gone and now everything is up for grabs. Dozens of questions about relocation, open space, new shopping centers, and apartment buildings are seriously discussed. Business leaders, government planners, and family heads all carefully plan how best to get their cherished activities going again and where to locate them for the indefinite future.

Our analysis of reconstruction patterns following large-scale disaster, however, shows rather clearly that the normal evolutionary forces are still at work. When we examined in detail the sequence of return (who got back to "normal" in which locations in what time sequence) among the various types of businesses in the central business district of San Francisco following the 1906 earthquake, it certainly did not show any random pattern. In fact, for the central business district one can spot a kind of domino effect in the sequence of decisions about locations. First the financial segment of the district made relocation decisions and started to rebuild. Then the department stores, women's apparel, and jewelry firms followed suit. They, in turn, were followed by the decisions to relocate, rebuild and reopen the hotel and theater districts. (See Figures 2-1

and 3-2 for details of the sequence of return.)

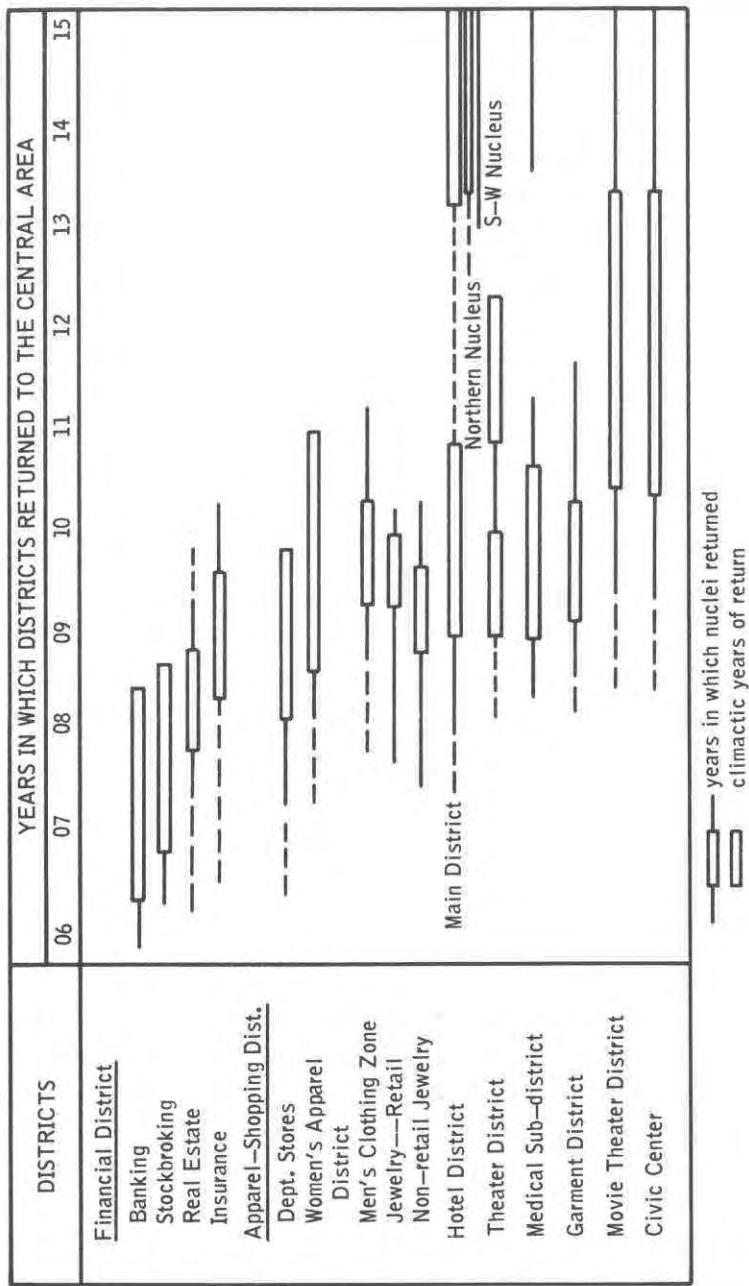
Comparable trends were noted in the reconstruction of Anchorage after 1964, even though the central business district there wasn't "wiped clean" nearly to the extent that it was in San Francisco. In Managua, one or more banks, by early decisions and acts, were critical in reestablishing the business community's confidence in the city and in inaugurating the reconstruction process.

Despite increased governmental provision of financial aid following large-scale disaster and related governmental constraints, the sectors of the economy that normally are dominant continue to be so during reconstruction. The wheels of government grind slowly; critical locational decisions are often made by businessmen backed by insurance settlements and local capital long before the government acts (as in Anchorage and Managua). Furthermore, governmental attentions, restrictions, and guides are invariably focused on the heavily destroyed area, while much of the significant urban growth and changes take place in undamaged but heavily impacted areas.

It is precisely in such a setting that the usual evolutionary forces can operate in pure form, beginning with decisions and acts of those with easiest access to local capital sources and those most likely to have been insured comprehensively before the disaster: upper- and middle-class homeowners in the residential sector; and the largest long-established businesses in the commercial-industrial sector.

In the disaster-stricken city the main objective, especially among private decision-makers, is to return to normal as quickly as possible. This is usually paired with a desire on the part of the business community to take advantage of the disaster to improve its own position and the city's economic efficiency. The result of both in the capitalist city is to give free rein to the market mechanisms, and to initiate the predictable succession of locational changes and areal extensions of districts. This pattern of change is the charac-

FIGURE 2-1
THE SEQUENCE OF RETURN IN THE CENTRAL AREA, 1906-15, SAN FRANCISCO



teristic form of growth for cities undergoing rapid increase in size, and it is the pattern for spatial evolution of cities in the process of reconstruction.

The normal consequences of the market mechanism may be seen beyond the central business district. Beyond the periphery of the central city are usually areas of housing. Between the pure housing and commercial areas is a mixed and fluctuating zone. Once the more powerful commercial interests were reestablished in San Francisco's central business district and the areas immediately surrounding it, the mixed or fluctuating "gray" zone was open to establishments low in the ranking of both commercial-industrial and residential hierarchies. These were the wholesaling and industrial firms, transient residential operations, and tenements for unskilled workers, and low-ranked ethnic minorities. In addition, many firms, at least in San Francisco and Managua, were forced to leave the area permanently when they lost out in the relocation game of musical chairs.

As with commerce and industry, there is a clear sequence of return in the residential sector, according to socioeconomic class, and a less clearly defined sequence according to ethnic groupings (see Chapter Three, pp. 87-91).

We believe this general model or reconstruction trend, as described at length in Chapter Three, is applicable to all cities in market or mixed economies. With the market mechanism operating to determine most reconstruction decisions, the city is rebuilt as fast, or perhaps faster, than is the case in planned situations. Growth and evolution toward the "Western" sample of the modern, efficient city is accelerated.

It should be recognized that these forces place least stress, during the trying reconstruction period, on the socioeconomic classes and types of business operations that have the greatest reserves and resiliency. They are the first to be successfully reestablished.

Conversely, the lower the socioeconomic rank of the individual, the more frequent postdisaster moves will be, the longer the period of deferral of residential stability will be, the fewer the housing alternatives (including the suburbanization alternative) will be, and the greater the chance that the family will be forced to leave the city permanently. Furthermore, the lower the socioeconomic class, the greater the chance that individuals will be employed in activities low in rank (manufacturing, distribution), and will be dependent (in locational decisions) on the acts of many other activities with prior claims on the land. Not only residences, but also jobs, will be dislocated for increasingly long periods according to socioeconomic class.

In the economic sector, activities low in rank and late in the sequence of return are subjected to so much stress and delay (in relocation), that many fail or are forced to leave the city. The city loses some of its industrial diversification as a consequence.

Coping Modes of Victim Families

Families caught in a disaster may have many new problems. Once the emergency period has passed, life must still go on. At the end of the emergency period comes a decline in the typical "altruistic outburst", wherein those who survived relatively unscathed provide all manner of support, assistance and comfort to the disaster victims without expecting anything in turn. As the restoration period passes, many family problems may remain. A heavily damaged or destroyed house, the death of an adult wage-earner, the loss of a job due to damage of the employer's business, and the relocation of a nearby close friend or relative are problems which are seldom solved easily or quickly, even by a self-reliant family. The city has been sharply altered by the disaster and so have the daily living conditions for many of its families.

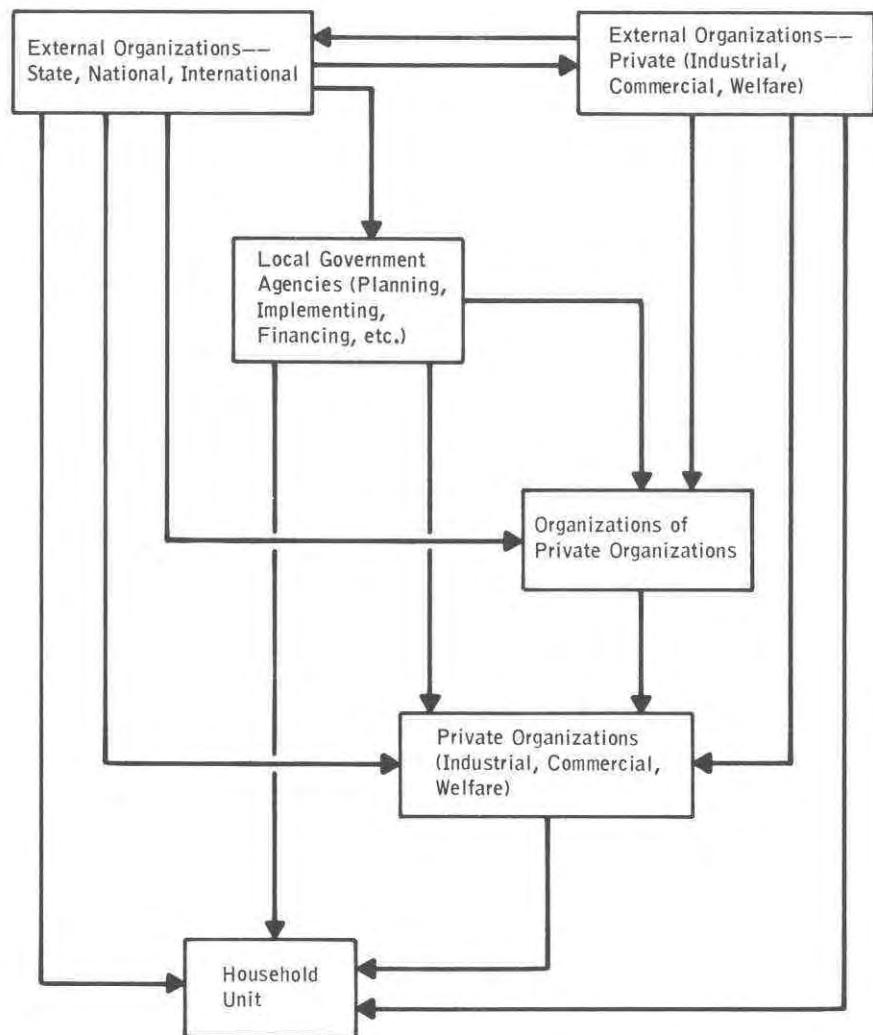
However, even during the reconstruction period, few families are

totally alone and isolated. After all, each family is surrounded by, and tied in with, at least some parts of the community. In our research described in subsequent sections of this volume, we provide information on the variety of strategies or modes which different families use to cope with their problems. One major mode of coping with problems we call the "institutional" mode; it refers to families who concentrate on using available support, guidance and information from public and private organizations to cope with their disaster-produced problems. While many of these organizations were present before the disaster, others became available or took on new significance after the catastrophe. Figure 2-2 outlines the range of organizations whose policies and activities have a potential impact upon victim families. While specialized disaster relief organizations may be very important to families with disaster-related problems, even well into the reconstruction period, there is a host of public and private, local and nonlocal organizations whose actions will have some impact on the problems faced by almost any family in the postdisaster period. The policies of these organizations guide their own and community-wide activities. The policies influence the speed of recovery of commercial and industrial organizations as well as the long-term needs of disaster-impacted families.

Policy decisions are made at a number of different levels, some of which are completely outside of the local community. Some, such as temporary housing provided by an outside agency, *directly* affect families. Others have a more indirect effect. For example, a policy decision regarding extra rapid approval of building permit applications may speed up construction activities, which, in turn provides more jobs and increases local business activity generally. Specific families will be affected by this to the extent that family income is dependent on the construction industry or on the presence of more cash in the local economy.

Figure 2-2 implies that policy decisions are made at various

FIGURE 2-2
ORGANIZATIONS WHOSE POLICIES AND ACTIVITIES IMPACT VICTIM FAMILIES



levels with consequent impact on the household unit. There is, of course, the potential for a reverse flow of influence and impact. Family decisions may have an impact on and influence organizational policies. A single family seldom has much impact on organizational policies, but in the aggregate, family decisions, if relatively uniform, may have considerable influence. For example, families whose homes are in the most devastated area of the city may protest successfully against local government plans to alter the land use in their neighborhoods, as in Darwin, Australia, after the 1974 Cyclone Tracy disaster (Haas, Cochrane and Eddy, 1976). Similarly, although it is a rare event, victim families may even be polled regarding their views on housing, school, or transportation issues, and the resulting information may be used in the initial formulation of certain reconstruction policies. In practice, however, the primary pattern is one in which decisions are made at the organizational level and result in impacts on families.

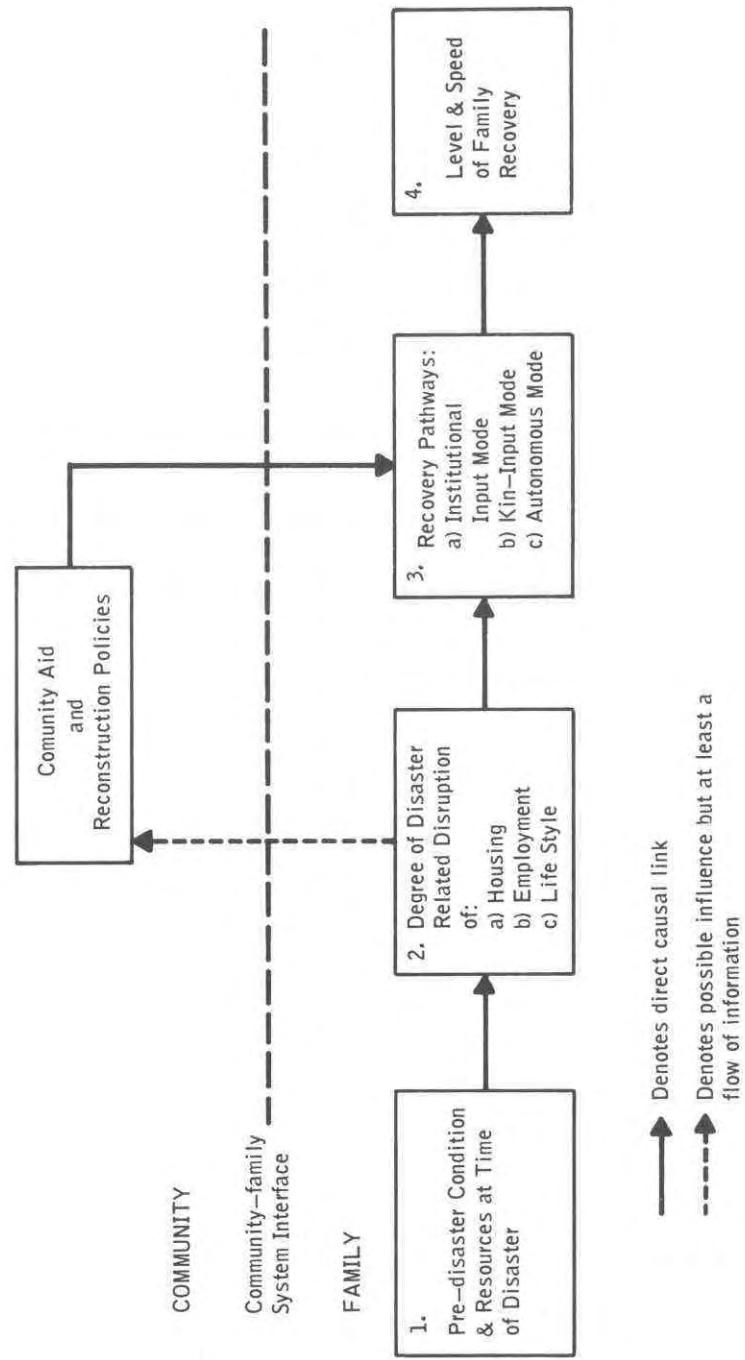
Conceptual Model of Family Recovery

The character and speed of family recovery are not just simple reflections of the policies and actions of large organizations. In Figure 2-3 we outline the major sets of variables which determine the level and speed of recovery for disaster-stricken families.

First, some families are better equipped to rebound from tragedy and loss than others. If the principal wage-earner has been unemployed for some months, if there has been long-term illness or disability in the home, if there are few close bonds with neighbors or relatives in the area, or if the family has few financial reserves when the disaster comes, the family will be at a distinct disadvantage in the recovery process. The predisaster conditions and resources do make a difference.

Second, recovery is influenced by direct disaster impact on the family. It is easy to recognize how death and serious injury within

FIGURE 2-3
SETS OF FACTORS RELATED TO FAMILY RECOVERY



the immediate family will make recovery difficult. Having the family residence damaged to the point that it is uninhabitable produces major disruption for most families. If income stops for an extended time because the employer of a family wage-earner is closed down or the job is abolished due to destruction of the work place, this can cause internal problems for even a healthy family whose home is intact. Even a situation where the employer moves some distance from the predisaster location, thus changing the trip to work, can be disruptive. There is even disruption to the family if the stores normally used for frequent shopping, or the local school or church are moved as a result of the disaster. Even the moving away of close friends or relatives can be a disturbing experience, especially for certain kinds of families, e.g., the elderly or those with several very young children needing constant attention. Finally, the emotional well-being of family members may be altered by one or more of the disruptive events noted above. When one member suffers from significant emotional disturbance, family interaction patterns may change also. That change is more likely than not to impede recovery.

Third, there are three identifiable orientations to recovery which a family may take. These approaches are sufficiently different that we have labeled them the "institutional input" mode, the "kin input" mode, and the "autonomous" mode. The particular mode selected will, of course, be strongly influenced by available choices. If there are few or no sympathetic kin in the vicinity, the kin input mode is less likely to be the primary orientation of the recovering family. If, as in Rapid City, there is a wide variety of organizations and agencies prepared to offer information and assistance to victim families, the institutional mode is quite likely to become the major pathway for coping with disaster-generated problems for a family. As an example of a situation where the institutional mode dominated, see Table 2-1 which outlines coping efforts of Rapid City victim families. This is one way that community-wide, reconstruction-

related policies come to have a direct bearing on family recovery.

TABLE 2-1

SELECTED POSTDISASTER CIRCUMSTANCES AND COPING EFFORTS: RAPID CITY

- I. Housing
 - A. Immediate Housing
 - 1. Went to live with relatives/friends
 - 2. Used commercial shelter (motels)
 - 3. Public emergency shelter used by few
 - B. Extended Problems
 - 1. Indeterminacy of floodway acquisition boundaries--didn't know whether to rebuild or move
 - 2. Delays in U.R.A. purchasing of damaged homes--tied up resources
 - 3. Low assessment of some properties--limited future possibilities for investment in housing
 - C. Finding Housing: Sources of Information
 - 1. Realtors
 - 2. Housing and Urban Development (HUD) office
 - 3. Friends or relatives
 - 4. Moving into rentals already owned by victim family
 - D. Temporary Housing
 - 1. Sharing friends' house--created crowding
 - 2. HUD trailers--some tenants satisfied, others not
 - 3. Poor condition of HUD trailer parks; inadequate time to design or construct properly
 - E. Sharing
 - 1. Limited to emergency period housing (less than one month) for most families
 - 2. Some older people moved in with their children permanently
 - 3. No real sharing of resources beyond clean-up activity and small loans in recovery period (more money was available from government than from relatives)
 - F. Duration of Inhabitance
 - 1. Long if home outside the defined floodway
 - 2. Short if in HUD housing, unless poor--then near-permanent (option to buy trailers after one year rent-free occupancy)
 - 3. Very short if with relatives/friends
- II. Employment
 - A. (Little disruption of respondents' employers)
 - B. Help from employer

TABLE 2-1 CONTINUED

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- 1. Victims given paid time off (up to one month) to clean up houses
 - III. Increase in Prices
 - A. Strategies
 - 1. Get food stamps
 - 2. Reduce levels of consumption
 - 3. Housing prices skyrocketed making some replace housing with lower quality housing
 - 4. Citizens' move to push rent controls failed
 - IV. Locational Aspects
 - A. Access to Activities
 - 1. Minor inconveniences from bridges out
 - 2. Some effect on visitation--especially among aged
 - V. Friendship
 - A. Relocation caused little change
 - B. Some use of aid source--primarily in clean-up
 - C. Loss of friends from death in disaster
-

The other recovery modes are less subject to organizational policies. The kin-input mode is probably used, at least to a limited extent, by a majority of families who have relatives within the region. It is a widely used pathway in traditional societies and in rural and small town areas of modern societies. The assistance and support coming from kin tends to decline rapidly after the emergency and restoration periods have ended, while institutional or organizational support tends to continue further into the reconstruction period. In developing and other poor countries where an organizational infrastructure has not yet proliferated, the kin-input mode becomes the dominant one, primarily because victim families having great needs have nowhere else to turn for assistance (Kates, *et al.*, 1973). In most of these same countries the extended family structure is a dominant force in normal circumstances as well.

The autonomous mode is a "do it yourself" approach. It is used more by families at either extreme of the income scale than by those

in the middle range. This mode is most likely to be adopted by the very well-to-do, especially if they have less than severe loss and disruption. If there are adequate financial reserves a family can almost always find a suitable house or apartment to live in while their damaged residence is repaired or a new one built. The very well-to-do in both Rapid City and Managua illustrate the mode nicely. On the other hand, the poor, illiterate family which has no kin or is isolated from them, often has little alternative but to use the autonomous pathway. Many, perhaps most, of the victim adults in Managua could not read. Under these circumstances most organizational assistance programs were, in essence, not available to them. If you can't read signs and can't fill out application forms, the program simply doesn't exist for you. The same problem exists in the United States, but to a lesser degree. The functionally illiterate and those having a non-English language as their native tongue are in a similarly helpless position unless special efforts succeed in bridging the "language-knowledge--self-confidence" chasm.

To recover from disaster, families use all three modes to some extent. But various modes are favored in different cities. Details of the complexities of family recovery, and explanations of differing rates of family recovery are offered in Chapter Four. Table 2-2 presents examples of coping efforts of victim families in Managua where kinship and autonomous modes dominated.

In terms of reestablishing a daily routine and carrying out activities similar to those before the disaster, families seem to "recover" faster than cities "reconstruct". However, to the extent that a city still displays a housing shortage greater than the pre-disaster shortage, or has not reestablished medical facilities, schools, or places of recreation, not all families can be said to have the same quality or style of life as they had before the disaster. Complete recovery is dependent, to some degree, on what is taking place in the physical and functional reconstruction of the city.

TABLE 2-2

SELECTED POSTDISASTER CIRCUMSTANCES AND COPING EFFORTS: MANAGUA

- I. Housing
 - A. Immediate Housing
 - 1. Move in with relative or friend who had less destruction or lived outside of Managua
 - 2. Poorest--live in or near ruins of former house; maybe to a refugee camp for a short time
 - 3. Richest--move to other property such as farm or beach house.
 - B. Extended Problems
 - 1. Indeterminacy of reconstruction plans
 - a. No access to former property in restricted area
 - b. Uncertainty as to where ought to build or where will be allowed
 - c. Delay of new housing projects prolonged housing shortage for middle classes
 - 2. Legal aspects of repair or rebuilding
 - a. Build legally--takes time, may be safer
 - b. Build illegally--quick, cheaper, but with legal and seismic risk
 - c. Build semi-legally--build clandestinely and then get permit, or use influential friends
 - d. Permit delays lead to clandestine repair and construction
 - C. Finding a House: Sources of Information
 - 1. Social network--relatives or friends
 - 2. Moving tenants out of alternative property already owned
 - 3. Just looking neighborhood-by-neighborhood
 - a. Newspaper not applicable to needs of lower income
 - b. Much rent gouging, as rent controls unenforced
 - D. Temporary Housing--Formal Projects
 - 1. Large temporary housing project too expensive for some, too primitive for others
 - 2. Housing found to be unpleasant or inconvenient
 - a. Inadequate infrastructure provided
 - b. Outlying location and difficult transportation
 - E. Sharing of Housing
 - 1. Mainly with relatives
 - 2. Often created problems; independence sought when economically possible
 - 3. Was important strategy for pooling of limited resources--seems to have worked best when consisted

TABLE 2-2 CONTINUED

- of two dislocated families (related) coming together rather than one victim family and nondislocated family
- F. Duration of Inhabitance
1. If a homeowner, short term until got back to own house
 2. Usually considered "temporary" when living with relatives
 3. Low-income housing "temporary" when lower quality than dweller used to
 4. Desire to move if too far from work place
- II. Employment
- A. Modes for Stabilizing Employment
1. Return to former job if possible; easiest for those who worked for large company and who weren't too long away from Managua
 2. Reestablish own business if possible, or take up some type of self-employment and if can't find other job; food selling common
 3. Looking for a job
 - a. Ask friends, acquaintances, relatives
 - b. Need for recommendations or for social security card indicating former employment with large firm
- B. Help from Employer
1. Possible from large enterprises--meals while working; sleeping space for some; use of company vehicles for moving; salary for time closed; loans or other types of financial aid
 2. Smaller employers usually struggling just to survive--major help would be to assure job to former employees as soon as enough work for them
- III. Increase in Prices
- A. Inflation not solely earthquake related, and rate quite high
1. Critical factor affecting family recovery
- B. Coping Strategies
1. Have another job on side or have others in family work at small jobs
 2. Reduce or omit meat in diet, and reduce intake of staples
 3. Reduce levels of other consumer buying, and of entertainment
- IV. Locational Aspects
- A. Loss of Centralization of Activities

TABLE 2-2 CONTINUED

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- 1. Affected businesses because can't be found, or inaccessible for many of former clients
 - 2. Consumers unable to do as much comparison shopping
 - B. Existence of only one open market means it is inconveniently located for at least half the population, the majority of which shops in the open market
 - C. Decentralization and dispersion of activities
 - 1. Social networks and visitation affected
 - 2. Entertainment; time and economic costs of travel prohibitive
 - 3. Relocation of families when possible to improve access to work place
 - V. Friendship
 - A. Affected by long distances within town, and by so many living out of town
 - B. Losses through death of friends in disaster
 - C. Could have been source of aid; others preferred not to reveal to friends their plight
 - D. Economic circumstances reduced possibility of some for participating in former social circles
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Policy Issues

We have seen that the city is an ongoing, living, changing system. Typically, it is not dominated by its physical surroundings, but it is partially shaped by them. Similarly, any family within the city is a continuing, living, changing, small-scale social system. It is somewhat influenced by its natural physical surroundings, but, to a much larger degree, the well-being of the family is determined by the man-made forces of the community, state and nation.

The decisions made by an individual family, e.g., where they will live or where they will shop, do have an effect on the community, but it is like a very tiny ripple in a large lake. If a single family suffers catastrophic loss, e.g., a family dwelling burns and the principal wage-earner is killed, some of the economic, social and

psychological resources of the community are likely to be used to help restore the damaged family. However, the city as an ongoing social system will scarcely be changed at all by that sad event.

Typically we speak of a "natural disaster" only when there has been widespread damage to man-made structures and systems, e.g., water supply systems, which has, in turn, produced large-scale social disruption. (Exceptions to this notion are widespread epidemics and great illness and death produced by poisonous fumes or liquids.) Reconstruction following disaster deals with efforts to put the community system back into some kind of acceptable "operational condition"--both physically and socially, since the two are intimately intertwined.

Why do issues arise?--Most reconstruction issues arise because some elements of the community want to avoid a similar community disaster in the future. That perspective is especially strong during the first few weeks after disaster impact. There is a kind of collective embarrassment or chagrin that the city should have been caught so unprepared. In addition, those who suffered significant direct loss to their homes, business properties, or incomes are greatly interested in avoiding a repeat performance. Those who had friends or relatives killed, disabled or injured, are among those who feel strongest about developing a safer city.

In turn this may conflict with the widely held desire to get back to normal as quickly as possible. Even those persons who suffered no losses want to see the city made physically whole again--rubble cleared, streets and bridges repaired or replaced, shops and government offices opened and operating normally, school and churches meeting again under normal conditions. The excitement, if indeed there was any, of seeing the city physically altered and some activity patterns shifted fades quickly and an overwhelming desire for normalcy replaces it. It is this desire for a rapid return to normalcy which is the bane of planners and others who would rebuild the com-

munity only after careful study of the feasible alternatives and the likely long-range consequences of each.

Perhaps the strongest pressure of all for a prompt return to normalcy comes from the existence of displaced families and businesses. Decent housing and jobs are high on almost everyone's list of priorities. Families living in temporary quarters and businesses operating in patched-up or temporary locations are daily reminders to many in the community that the situation is still unsatisfactory, still not back to normal.

As we have seen in the discussion of urban evolution and growth, there is also a third, broad force operating in the city. The constant scramble for desired locations within the city and easy access to urban amenities does not cease during the restoration and reconstruction periods. Business executives and investors are likely to operate opportunistically during these periods. There may be an increased number of opportunities to improve on past conditions by backing certain changes that are being proposed. On the other hand, some businesses may see a competitive advantage in getting back to normal quickly if their losses were minimal and those of competitors substantial. The usual competitive struggle is intensified because more options are open following disaster, but the struggle per se does not necessarily produce a greater tendency toward slow, carefully planned reconstruction than it does toward a rapid return to normalcy which may involve little planning.

Thus reconstruction issues arise when there has been significant damage and social disruption to a city. Priorities change and new possibilities for the future come to mind. The widely held desire to return quickly to normal, insofar as possible, runs head on into the desire to insure, if possible, that the catastrophe will never be repeated locally.

What are the basic issues?--Based on our studies seven basic issues arise after large-scale disaster. We have interviewed dozens of

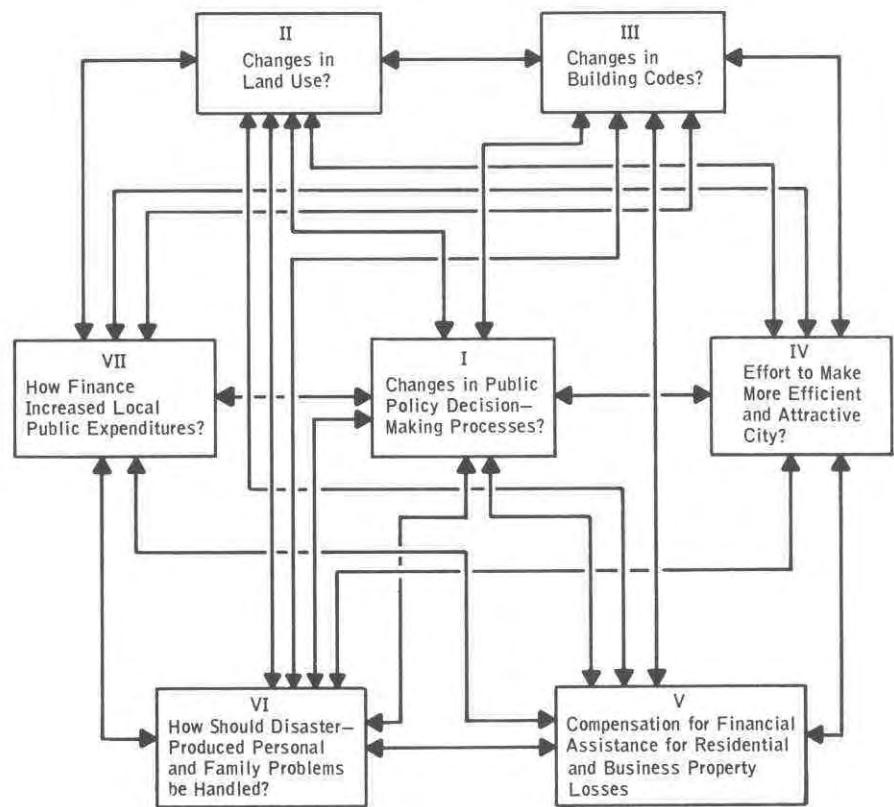
important decision-makers, and have had several hundred interviews and informal discussions with residents of all types about recovery from disaster. Newspaper coverage of restoration and reconstruction matters have been examined. A wide range of concerns has been expressed and issues mentioned. Our analysis shows that almost all of the issues can be subsumed logically under one or more of the seven basic issues described below.

As might be expected when considering a social system such as a city, the basic issues are linked. If one issue is considered and alternative ways of resolving that issue are examined, it becomes apparent that it is tied in with all of the other issues. One of the more obvious links is financial in character. Arriving at decisions costs money; implementing decisions costs even more money. Monies spent in one way cannot be used in other ways in the reconstruction process. Further, it takes time to arrive at generally acceptable solutions to problems; some proposed solutions are time-dependent on others. For example, logically, land use decisions should be made prior to decisions on the final formulation of changed building codes. If all buildings are to be prohibited in the major part of a flood plain, the building code as a total package can be quite different from what would otherwise be the case. Further, if there are going to be new or special community decision-making mechanisms put into operation, the resolution of many other issues will, in fact, be delayed until the new mechanisms are functioning.

Figure 2-4 shows the seven basic issues and their links in abbreviated form. The figure is complicated. The social reality it tries to portray is even more complex.

The first issue is fundamental: *should normal, as contrasted to extraordinary, decision-making mechanisms be used in deciding how, when, and where to rebuild the heavily damaged city?* At a very minimum, the question will be raised as to whether there are an adequate number of experts of the various types needed within the

FIGURE 2-4
LINKS AMONG SEVEN BASIC RECONSTRUCTION ISSUES



regular units of government. If not, shall there be one or more special task forces composed of experts, administrators, and citizens? Shall large, experienced consulting firms be retained? Using new or different specialists may sound like a technical matter, but it can, and often does, change the normal decision-making process.

In democratically oriented societies, there is very likely to be strong sentiment that the property owners of the damaged areas be given a "special voice" of some kind in determining how, if at all, the area will be rebuilt. How will that extraordinary involvement be arranged?

The basic issue arises when many persons and interest groups recognize, during the restoration and early reconstruction periods, that the up-coming decisions on public policy are quite extraordinary in number and, above all, in scope. The decisions made will have far-reaching and long-range impacts. New interest groups or altered coalitions of such groups want a large opportunity to influence what they consider to be key decisions. Persons who long ago had concluded that "you can't fight city hall" now see a more fluid, less closed set of circumstances, and therefore insist on the right to try to have some significant influence.

Decision-making in the same old way will almost certainly be challenged. The more radical the reconstruction plans being bandied about, the more insistent will be the demands for changes in decision-making mechanisms. The resolution of that issue will have an impact on most substantive decisions made for the community during reconstruction.

Figure 2-5 lists a number of issues subsidiary to the basic issue of public policy decision-making processes. Only the most obvious ones are listed for the readers' consideration.

Should there be changes in land use? is a second basic issue (See Figure 2-6). This issue is most likely to arise following a flood or earthquake disaster, somewhat less likely following a hurricane

FIGURE 2-5
SUBSIDIARY ISSUES TO BASIC ISSUE I:
CHANGES IN DECISION-MAKING PROCESSES?

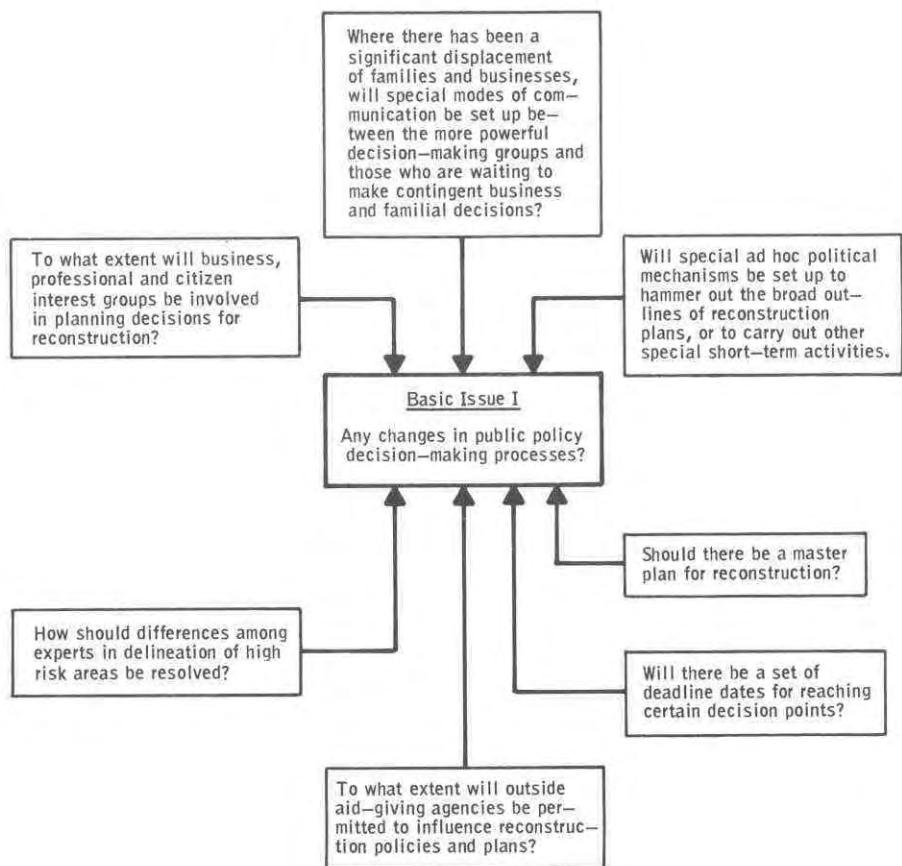
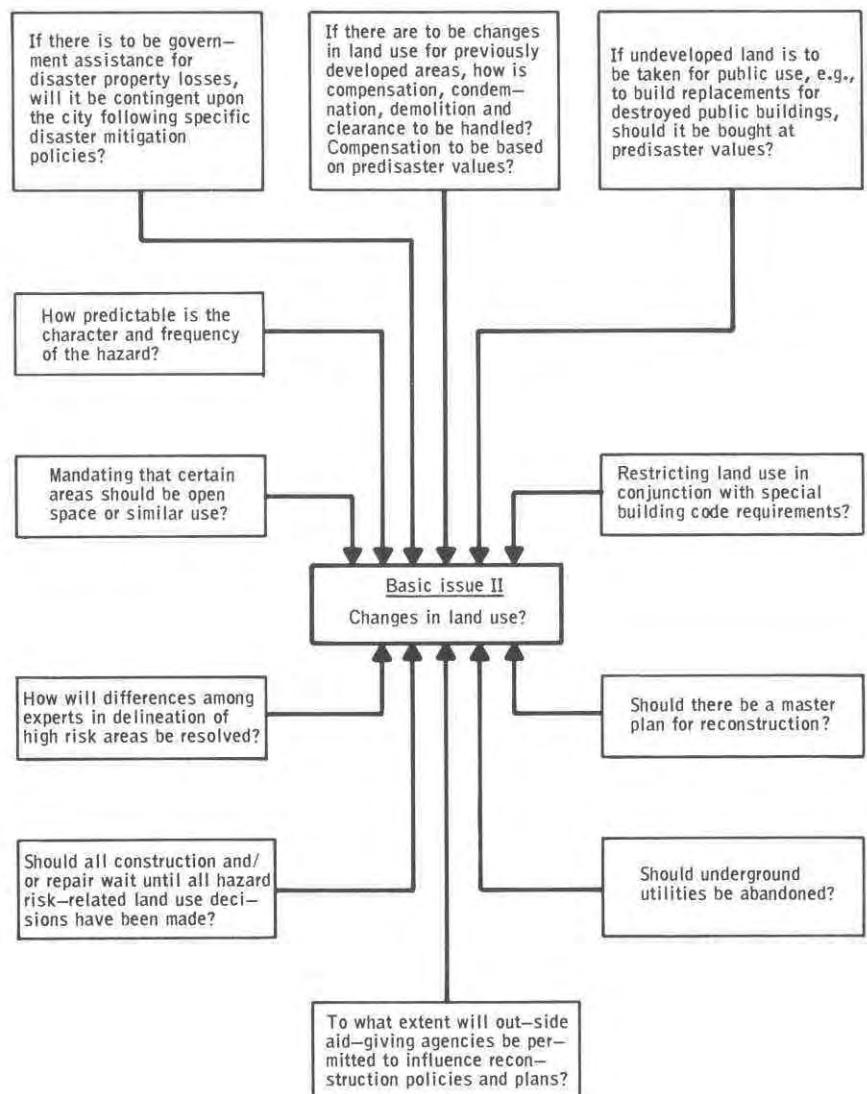


FIGURE 2-6
SUBSIDIARY ISSUES TO BASIC ISSUE II :
CHANGES IN LAND USE ?



strike, and most unlikely following a tornado disaster.

Any significant change in land use regulations is likely to have a domino effect. Unless there is a significant permanent reduction of population in the area, any new restriction on land use for one section of the city will produce a musical chairs effect in the use of the remainder of the land and buildings. In addition, the rate of urban sprawl is likely to increase.

Suggested changes in land use flow primarily from a desire to build a safer city. However, the physical destruction of a part of the city is seen by some persons, especially planners, as a unique opportunity to improve the livability of the city. Still others may see it as an ideal chance for "instant urban renewal"--an opportunity to replace a deteriorating area with new, modern land and building packages. But for many persons the new is unfamiliar, and that unfamiliarity creates personal discomfort; there will almost always be resistance to proposed changes in land use. Those who stand to lose economically from proposed land use changes will be among opposition leaders.

Land use decisions are the most central and far-reaching substantive decisions to be made following any disaster. The repercussions of those decisions can't be overestimated. Delay in reaching land use decisions plays havoc with a host of other important decisions that need to be made. Until land use matters are clarified, reconstruction will be stymied. And the longer the delay, the greater the number of private investors who will "go it alone". They will make investment decisions which are little influenced by a master (comprehensive) plan or general public policy. The result tends to be increased urban sprawl.

Land use policy itself is dependent in some measure on the delineation of hazard zones. Experts with different views complicate that issue further, but even when there is consensus among experts in the delineation of hazard zones, there is still the

fundamental question, how much risk is acceptable? When the estimated probability of a disaster event is extremely remote, should that risk be a major consideration, or a consideration at all, in postdisaster land use policy?

This basic issue and subsidiary ones are so important to the pace of reconstruction and the future character of the rebuilt city that they merit serious attention well in advance of any disaster.

A third basic issue is closely related to land use policy: *Should there be changes in the building code?*

Certain high-risk parcels of land can still be used intensively if the structures on them are appropriately designed, constructed and maintained. The Golden Triangle area of Pittsburgh is no stranger to floods, but even though it is intensively developed, significant flood damage is rare because flood-proofing technology has been widely adopted (White and Haas, 1975; Corps of Engineers, 1972a).

Generally speaking, within any specific city, earthquake hazard zones provide less certain guidance for developing special hazard considerations in the building codes than flood hazard zones. With the exception of land on or near known, active earthquake faults, most structures of a given type within a city face the same generalized risk from earthquake shaking for similar soil types. It is not necessary to require special flood-proofing of buildings located well above the flood plain, but the same cannot be said for requiring earthquake resistance of buildings located several miles from an earthquake fault. Nevertheless, the concept of designating certain areas of the city as "high risk", "moderate risk", and "low risk" makes good sense for many geophysical hazards, and, in most instances differential building code requirements for each area make equally good sense.

Timing is obviously a serious consideration. It takes months, often years, to get a change in the local community version of the Uniform Building Code. Should repair of damaged buildings wait for

the code revision? Should all new construction be held up? How about for the construction of "temporary" buildings? These and other subsidiary issues are listed in Figure 2-7.

The fourth basic issue, *Should a concerted effort be made to make the city more efficient and more attractive?*, will be discussed mostly by planners, architects, planning commission members, a few city fathers, and relatively few other persons. The small amount of attention which the issue gets, however, should not be taken as an indicator of its relative significance for the future of the city.

Some of the subsidiary issues, however (Figure 2-8), may receive attention from a broader audience. If there are proposed changes in transportation routes within the city, for example, the attention received may be substantial. Or, if a major employer is considering relocating nearby or in a middle- or upper-income residential area, concerns over efficiency and attractiveness will be voiced.

Normally, changes in the attractiveness or efficiency of a city come in small increments. On the heels of major physical destruction giant steps may be possible--forward or backward!

Should there be compensation or special financial assistance for private property losses? is the fifth issue. Recent history in the United States indicates that the answer to the question is "yes", if the total scope of the disaster is sufficiently large (White and Haas, 1975; Mileti, 1975). In 1974, Federal legislation changed somewhat the pattern for Federal-state responsibility for disaster aid. Each state also has wide latitude regarding the character of the relief program. As a result, programs are not uniform throughout the states. Furthermore, considerable assistance and outright grants are provided by private relief agencies such as the American National Red Cross. The Mennonite Disaster Service specializes in providing skilled carpenters and building materials to help repair and build homes and small business structures for those of modest means. The basic issue is still a significant one.

FIGURE 2-7
SUBSIDIARY ISSUES TO BASIC ISSUE III :
CHANGES IN BUILDING CODES ?

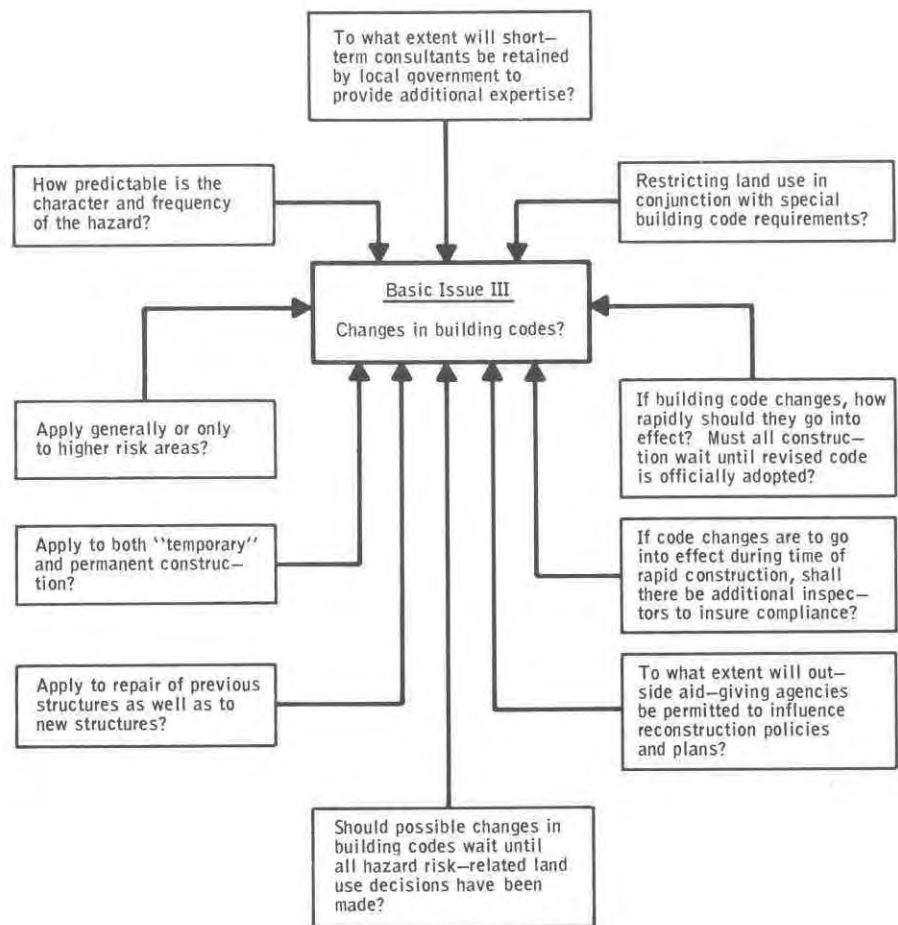
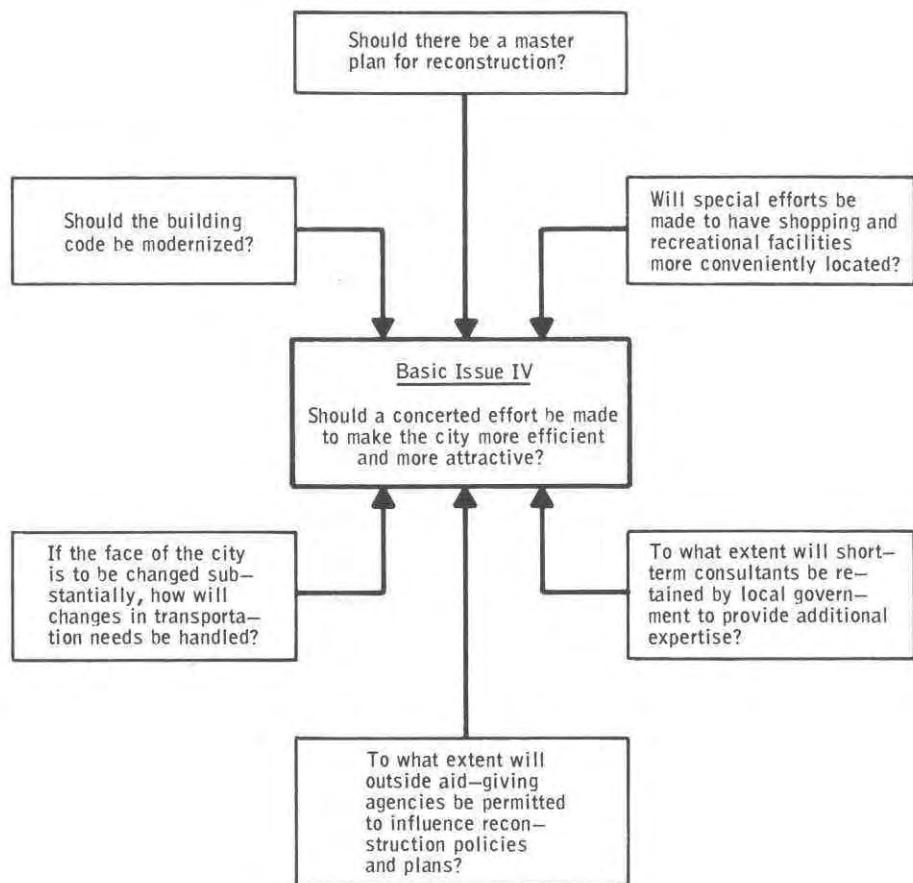


FIGURE 2-8

SUBSIDIARY ISSUES TO BASIC ISSUE IV :
AIM TO BE MORE EFFICIENT AND MORE ATTRACTIVE ?



As noted in Figure 2-9, a number of the subsidiary issues deal with considerations of equity. They may sound academic in a nondisaster context, but they are very real and often receive considerable attention in the mass media following a disaster. These are policy decisions which seldom leave easily documented impacts on the community. The decisions do, however, make a great difference to the speed and level of recovery of individual families.

If Federal government assistance for those who have lost property is contingent upon the enactment and enforcement of hazard mitigation policies by local government, e.g., changes in land use policies or upgrading of building codes, those policy determinations must be approved at several levels of government before the victim property owners can proceed with specific recovery plans. At times the victims may seem to be pawns in the political struggle. Whatever the specific policies turn out to be, they do leave a long-term imprint on the community.

How should disaster-produced personal and family problems be handled? This sixth basic issue encompasses a broad range of subsidiary issues (Figure 2-10). A number of these issues deal with fundamental matters of family survival--the availability or cost of housing, employment, health and emotional problems, compatibility among "temporary" neighbors. Others deal with problems of integration, communication and decision-making in the community. If victim families happened to be evenly distributed among the undamaged areas of the city, most of them would, in time, be absorbed into their respective new neighborhoods. That seldom happens; rather, there tend to be one or a few clusters of victims in temporary housing. Their plight is thereby more visible to the community as a whole.

These clusters of victim families are, in one sense, new and artificial neighborhoods. The families did not freely choose to live there, and, in most instances, they pine for a return to their

FIGURE 2-9
SUBSIDIARY ISSUES TO BASIC ISSUE V :
FINANCIAL AID FOR PRIVATE PROPERTY LOSS ?

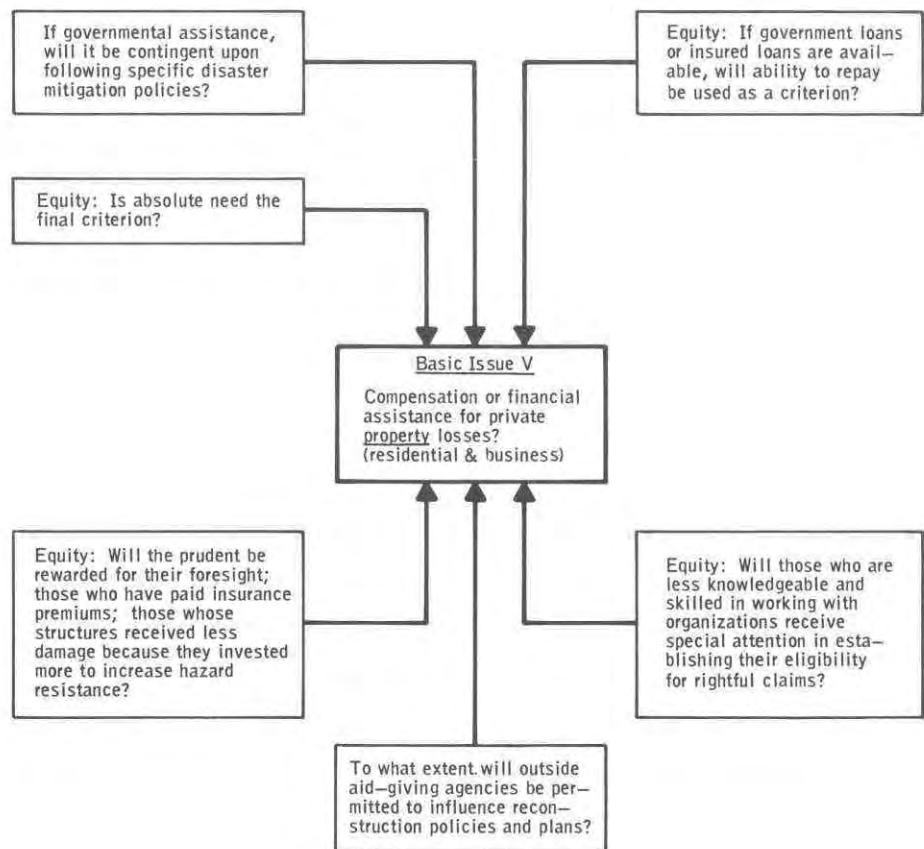
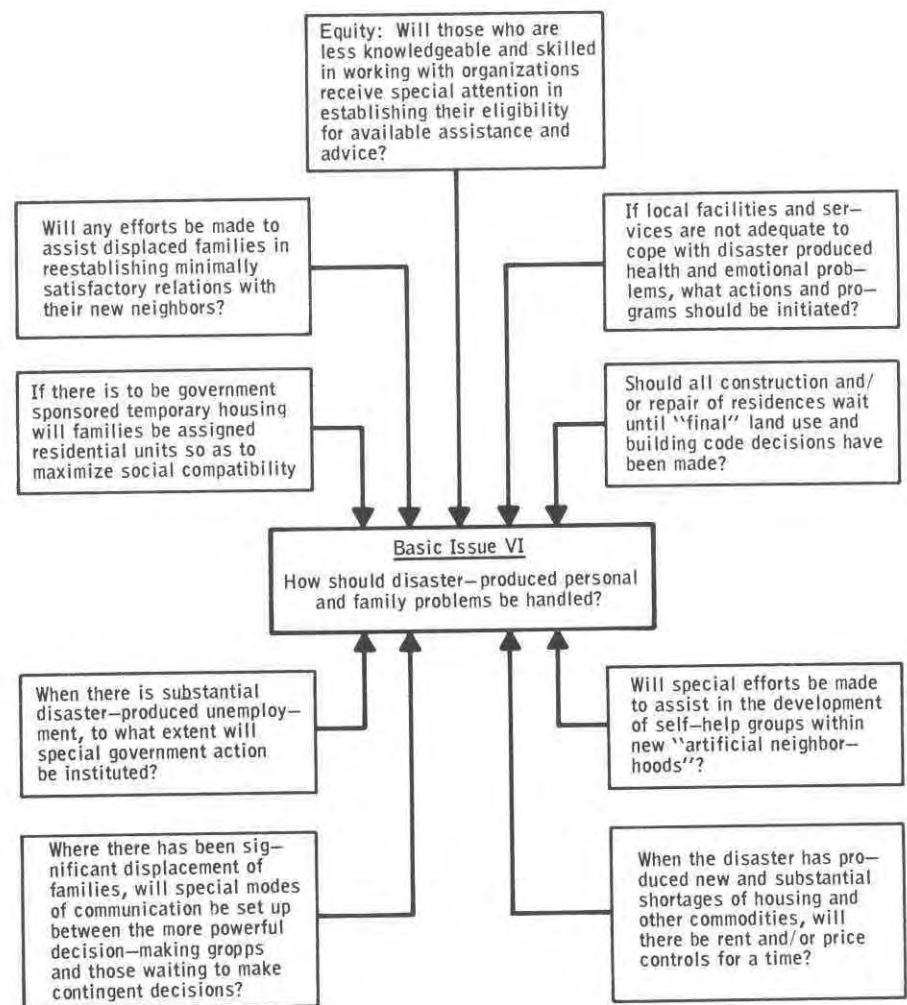


FIGURE 2-10
SUBSIDIARY ISSUES TO BASIC ISSUE VI :
HOW TO HANDLE PERSONAL AND FAMILY PROBLEMS ?



previous areas, friends and familiar surroundings.

Many community policy decisions must be made first before large-scale reconstruction can get underway. In the meantime, community leaders may wonder if the victims' needs and desires are being taken into account in the decisions that directly affect them. The victim families themselves may organize and demand to be heard. Through it all there may be highly publicized conflict between different elements within the victim neighborhoods. Local, state, and national politicians may try to use some of these very human issues as a basis for their own political advancement.

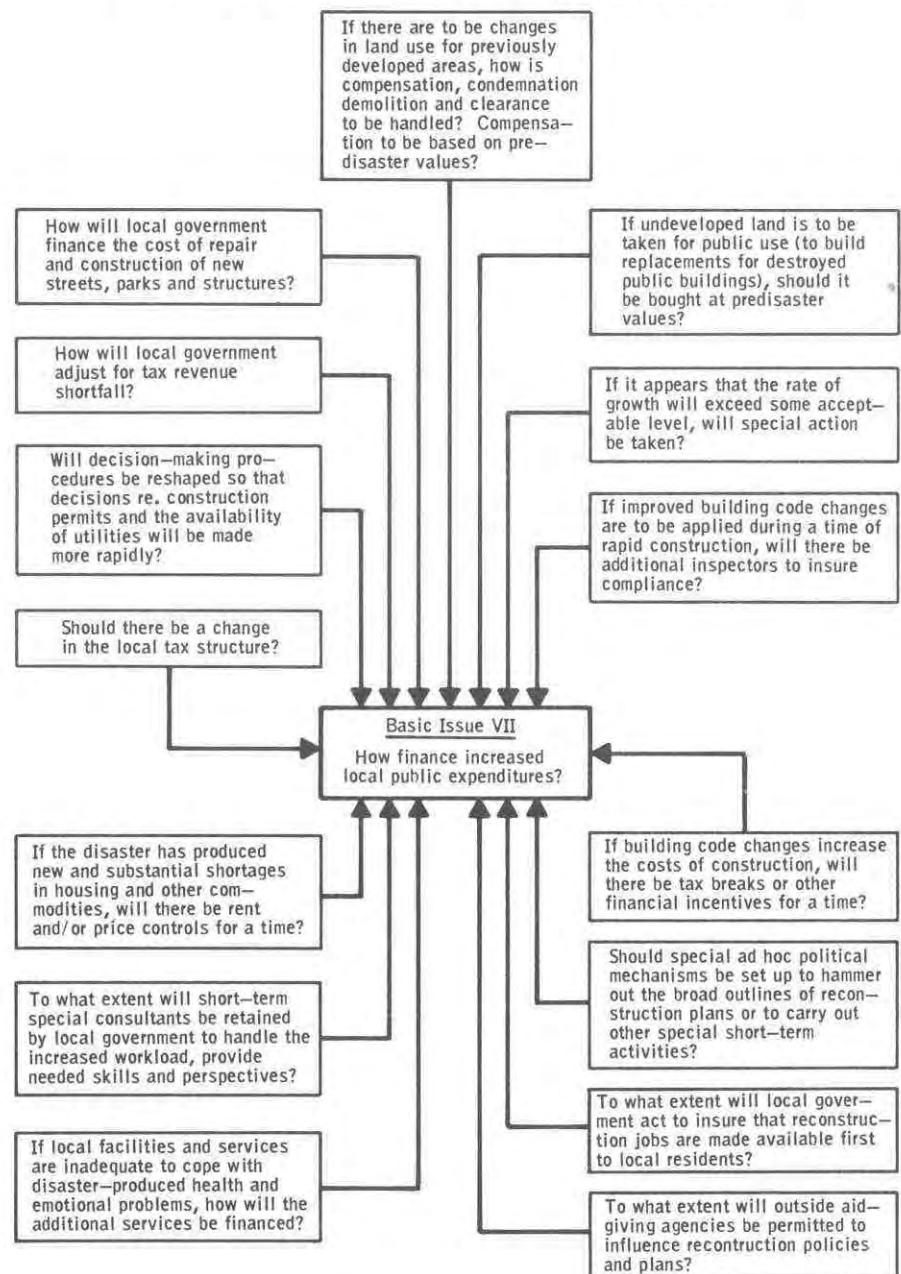
Throughout this period inflation may become rampant, thus raising the issue of possible price controls on rental housing and some other scarce commodities.

The final basic issue is one that is almost certain to receive a lot of attention: *how should increased local public expenditures be financed?* This basic issue and the many subsidiary ones will consume most of the time of city council, and numerous top executives and their staffs in city government. Figure 2-11 displays some of the more important subsidiary issues.

Decreases, perhaps very sharp decreases, in tax revenues for the city will result from reduced taxes from damaged and destroyed properties, and from reduced business activity in the area. If a number of employers are closed due either to direct damage or lack of needed utilities, or shortages of needed supplies to operate, this will have a strong impact on local spending and, thus, on sales tax revenue coming to the city.

That shortfall of tax revenue must be seen against the escalation in legitimate demands for increased public expenditures. Underground utilities must be repaired or constructed anew with great speed. Bridges and streets, especially on main arterials, must be made operational promptly. If government services are to be continued, damaged and destroyed government buildings must be taken

FIGURE 2-11
SUBSIDIARY ISSUES TO BASIC ISSUE VII:
HOW TO HANDLE INCREASED PUBLIC EXPENDITURES ?



into account and alternate locations for government operations must be found and financed. If certain privately held lands are to be condemned for public sale, the compensation costs may be substantial. The list of added expenditures required because of direct losses goes on and on.

There are also the somewhat less visible but, nevertheless, very real indirect and related costs. Changes of almost every type are likely to increase costs: revision of the local building code; processing building permit applications more rapidly; interaction with Federal and state officials to insure that the interests of the city are adequately protected; operation of ad hoc advisory or decision-making groups; increase in level of operation of human service agencies; and, the costs of retaining additional consultants. These items represent only a partial list.

Problems dealing with general community well-being also increase total public expenditures. The physical growth of a city requires huge investments in advance for needed public services. Once reconstruction is well underway, the question of unacceptably rapid growth may arise. Attempting to keep the growth rate at some manageable level requires the time of already overworked administrators, policy-makers, and specialists on the city payroll, as well as additional costs for legal fees and public information efforts. Rapid rebuilding may also aggravate the local inflation rate, thus bringing consideration, possible enactment, and enforcement of temporary rent and price controls.

Should reconstruction jobs go mostly to local residents? This issue arises following most large-scale disasters. The answer is important for the general recovery and health of the community. If the local government attempts to influence the answer to the question, that activity too will increase local government expenditures.

Temporal Consideration in Issue Resolution

Should or must some issues be resolved ahead of others? The answer

in some instances flows from a recognition of straightforward causal links. For example, if land use considerations have not been resolved for certain sections of the city, new construction cannot begin in those areas, at least not legally. In other instances, the answer to the question rests on a value preference. For example, many persons would argue that decisions that will bring major changes to the physical character of the city should rest on broad citizen input and support. In most cities, such input and support can only come after there has been some change in the public policy decision-making mechanisms.

Similarly, from the standpoint of family recovery, early decision-making regarding residential areas is critical. If some residential properties are going to be condemned as part of a planned change in land use, that decision should be made quickly and should be followed by prompt settlement with each property owner because it is important for family recovery. Most families can't afford to leave one residence in limbo while living in another. Few families can afford a down payment on a new house until they have recovered their equity from the previous dwelling. If it is considered desirable to speed family recovery and minimize social disruption, there must be quick action on condemnation and compensation for residential properties.

There are other issues which can, and perhaps should, be resolved simultaneously. Decisions regarding the speed with which public structures will be repaired or built should be coupled with basic budget considerations, including any proposed changes in the local tax structure. Almost all decisions regarding transportation routes should be coupled with decisions to rebuild or to relocate major facilities, whether public or private. Decisions to provide financial assistance to owners of damaged or destroyed buildings should be coupled with tax incentive decisions for businesses and changes in the building code in order to encourage the development of safer, more modern structures.

As will be seen later in this volume, it is not particularly difficult for governmental and business leaders in a disaster-stricken city to recognize, at least in their general form, most of the critically important issues. It is difficult to get decisions made regarding those issues within some reasonable time frame. In addition to the inevitable delays, interminable efforts at communication, and coordination, there seems to be a never-ending list of "additional factors that must be considered before the final decision is made". Somehow the decision which, it was announced, would be made in 30 days still isn't made after 90 days. In the meantime, uncertainty reigns supreme. (Suggestions on how to reduce this uncertainty through the use of predesignated decision deadline dates are presented in Chapter Six.)

In this section we have attempted to present, in a simplified and straightforward manner, a picture of the basic and subsidiary issues that apply to the reconstruction period. Not all issues receive equal attention. The resolution of some issues is more likely to leave identifiable impacts on the character of the community than is the case for others. Above all, it should be obvious now that the issues are extensively linked. The issues may be discussed separately, but when one is acted upon, the consequences reshape the circumstances surrounding most of the other issues.

Illustrations of Basic Issues

We turn now to the discussion of some reconstruction issues as they were identified in the four cities examined. The issues being presented were selected, in part, to illustrate some of the important lessons to be learned from the reconstruction of Rapid City, Managua, Anchorage and San Francisco. (A complete list of issues for each city appears in Appendix A.)

Rapid City, South Dakota--The June, 1972, flash flood that swept

through Rapid City took the lives of 38 persons and damaged or destroyed the homes of some 3,000 families. Housing, which had been in short supply prior to the disaster, was clearly in short supply prior to the disaster, was clearly inadequate. Later, even undamaged homes located in what was called the floodway (the area to be cleared of all buildings), were condemned, thus increasing the demand for housing even further.

An early and important issue was: *where should temporary housing be located?* The decision was made to put mobile home sites out near the edge of the city and to fill the mobile homes on a first-come-first-served basis. The following problems were associated with that decision:

1. The site areas had no utilities. The city hurriedly installed minimal utility services, but could not recover that cost from the U. S. Department of Housing and Urban Development (HUD) which was supplying the mobile homes rent-free to victims. The city decided to charge the victim families in the trailers a site fee to cover those costs. A strong protest developed from the families, many of whom were destitute. The city finally recovered its expenditures via a gift from the Rapid City Area Disaster Foundation.
2. Families in the mobile homes came from a variety of social classes and ethnic backgrounds. They were assigned locations in the order in which they arrived. This procedure resulted in a mixture quite unlike normal neighborhoods. After a time conflict was frequent and sporadic violence erupted.
3. The mobile home sites were a considerable distance from any shopping area. No public transportation, other than taxi, was available in the Rapid City area. The poor and the elderly thus found it very difficult to shop even to meet basic needs. Similarly, visiting friends and relatives was curtailed.
4. The HUD provisions made it possible for occupant families to purchase the mobile home after one year. Some families did so, thus turning the temporary housing area into a permanent area.

Several things can be learned from these events. First, tempo-

rary housing should be located so as to maximize the possibility of continuing family activities in the normal way. The trauma of a disaster should not be compounded by unnecessary social disruption. If less desirable sites must be selected, special efforts should be made to provide adequate, inexpensive transportation so that normal activities may continue without drastic disruption.

A second consideration is perhaps more difficult to solve. It deals with the social class and ethnic composition of the temporary housing units: should the manager of such housing areas ignore those differences or should he make it possible for "natural groupings" to form within the housing complex? This problem was not unique to Rapid City. It would not be too difficult to give each family a choice: "Do you want to live with certain kinds of people, or shall we assign you to a place randomly?" It may well be that a number of families who were friends and neighbors prior to the disaster may want to live near each other in the temporary housing. That desire to live near each other may reflect any number of considerations, not just ethnic or social class factors.

Managua, Nicaragua--Managua was hit by an earthquake early in the morning of December 23, 1972. When the sun rose over the city, almost three quarters of an estimated population of 420,000 were homeless and half of the employed were jobless. More than half of the commercial and governmental facilities were unusable for a time (Kates, *et al.*, 1973). The central business district, including the central market and the surrounding homes and shops, were the hardest hit. After a few days, a high barbed-wire fence was erected around this most heavily damaged area of approximately 400 square blocks. The destruction within the fenced area was so nearly complete that it was made into a no-man's land.

The city had also suffered earthquakes in 1885, 1931 and 1968. Now the question arose, should the city be moved? That idea faded

within a few weeks, but the question of what to do with the central city area continued for several years. The basic issue for that core of the city was, "should there be a change in land use?"

Subsidiary questions were: "how should differences among experts concerning the character of the risk and the delineation of the high-risk area be resolved?"; "can the area be rebuilt with reasonable safety if the seismic resistance elements of the building code are greatly strengthened?; "how long is it reasonable to wait for more detailed geological studies?"

One year after the disaster, a broad "conceptual" plan for reconstruction of the city became public. By implication, but not specifically, the core of the city would at least be thinned out and perhaps be used only for parks and a few public structures. Two years after the disaster, no building had been permitted in the area and tropical vegetation was taking over. It was six months later when the first preliminary plan for the reconstruction of the city core became public.

In the meantime, business and residential property owners received no compensation for their property in the "condemned" area. They had to fend for themselves in relocating. As a consequence, the periphery of the city grew in an unplanned fashion, while a number of formerly residential areas quickly became dominated by small businesses. The face of the city now reflects a host of private, mostly uncoordinated, investment decisions. Any master plan for reconstruction adopted several years after the disaster will have very little impact on the rebuilding of the city.

It should be noted that the indecision on the land use issue had far-ranging repercussions. Not only is the character of the city quite different from what it might have been, but the pace of recovery was badly crippled. Family members and business executives alike spoke bitterly about the uncertainty with which they had to live because of the delay in resolving the critical downtown land

use issue. For months on end, they felt that they should rely on private investment and employment decisions until the public land use issue was settled. Thus, the local economy was stifled and social disruption continued at high levels for months.

When the stakes are so high, is it too much to expect public officials to proceed with all deliberate speed in making critical decisions? Could not one, and only one, group of experts on hazard zone identification be put to work promptly and given an irrevocable deadline? Could not the planners and policy-makers commit themselves publicly to an early decision date? In reconstruction following massive disaster, an early, less informed decision may be, and probably is, preferable, to a later, "wiser" decision.

Anchorage, Alaska--On Good Friday, March 27, 1964, Anchorage and most of southcentral Alaska was shaken by the largest earthquake ever recorded on the North American continent. Estimated magnitude was 8.5 on the Richter scale. Damage in Anchorage, some 80 miles from the epicenter, was extensive (estimated \$180 million), but there were only nine fatalities. Major landslides occurred in the downtown area and in several residential areas where buildings broke up like match boxes. About 30 blocks of dwellings and commercial buildings were destroyed or severely damaged in the downtown area alone. Of the housing units damaged in Anchorage, 921 had between 80% and 100% damage (Dacy and Kunreuther, 1969).

The Federal National Mortgage Association (FNMA) passed an unprecedented ruling forgiving indebtedness on uninsured outstanding mortgages that they held. Homeowners who suffered severe damage were permitted to escape all obligations by a token payment of \$1,000. Later, the Alaskan Omnibus Act offered essentially the same terms on mortgages held by private institutions where damage to the dwelling was greater than 60% of its market value. Homeowners without mortgages and the few who had kept up their premiums for earthquake in-

surance did not benefit from these programs.

After early large-scale disaster there is sentiment for special financial assistance for property owners. One of the issues which arises is, "If there is to be such financial assistance, will the less prudent be rewarded for their lack of foresight and planning?" Should those with near maximum mortgages be eligible for the same benefits as those with small or no mortgages? (It is the elderly who are most likely to have no mortgage.) Should those who invested in insurance over the years now receive fewer benefits than those who did not? Discriminating against the more prudent or those with large property has a ring of inequity to it.

While legal provisions relevant to this issue are usually on the books prior to the disaster, some adjustments can be made by the disbursement policies of the local disaster relief fund that is usually established to receive and disburse private donations for disaster victims.

San Francisco--The massive earthquake and fire which hit San Francisco in April, 1906, destroyed half of the housing and the physical plants for at least two-thirds of the jobs. The destruction of the central business district was so nearly complete that serious consideration was given for a time to the desirability of changing the physical character of the downtown area. Unlike most cities hit by disaster, there was a prior plan to create, over time, the "city beautiful". But that plan, the Burnham Plan, was never utilized to any significant extent. Apparently it was too grandiose for the times and specific sets of conflicting interests existing in San Francisco following the catastrophe.

Although an elected city official is unlikely to express the issue this way, an issue of significance is, "should the city rectify the predisaster problems in its physical structure?" Should it, for example, change rail or subway terminals; widen streets; put over-

head lines underground; relocate main arteries; and increase the capacity of storm drainage and sewer systems. These ideas and more come under the heading of trying to make the city more efficient and attractive. There is likely to be rather widespread support for the general concept, but great impatience with the length of time consumed in totally replanning a sizeable section of the city.

Accepting the concept of replanning is like opening Pandora's box. All sorts of conflicting interests now become manifest. The planners and politicians are certain to get caught in the crossfire. If it is possible to generate quickly broad citizen consensus on the major features of a more efficient and attractive section of the city, the "once-in-a-century" opportunity should not be missed.

A major problem with any significant effort to restructure the city is the time that it takes to carry out even minimally adequate planning and to get the plans adopted. If it were possible to develop the main features of a reconstruction plan quickly, and to have them adopted promptly, the long periods of uncertainty for business and family heads could be shortened. Over-ambitious and detached planning will generally be counterproductive. Such an approach, apparently by far the most common tendency, takes too long, raises too many issues simultaneously, and produces massive resistance and counter-attack.

A Summary of Do's and Don'ts

What can be said, in summary, about reconstruction issues? What has been learned from this analysis of issues in four devastated cities that may be applicable to most other similar cities? The final chapter in this book treats this topic at some length. Here we will simply conclude by offering some rather specific suggestions for the policy-maker.

1. Don't wait until the restoration period is nearly over before starting to examine, systematically, the upcoming

reconstruction issues.

2. Begin immediately to consider whether new decision-making mechanisms, including the possibility of advisory groups, are going to be needed.
3. Do examine, at an early stage, the availability of an adequate number of local specialists who may be needed to carry out rapid but thorough efforts early in the reconstruction process.
4. Don't assume that decision-makers in the private sector will hold off on their decisions until the most important public policy decisions have been made.
5. If there is to be significant relocation of families or business, consider the full range of services needed and full array of consequences which may follow.
6. Remember that despite the best efforts to shape the character of the reconstructed city, fundamental change is unlikely. Past trends will be accelerated in most cases. Design the planning process with this in mind.
7. Don't assume that all temporary housing will be temporary.
8. Don't confuse physical reconstruction with recovery of the city as a whole.
9. Do use every reasonable opportunity to make the city safer, but don't make invulnerability your ultimate objective.
10. When tempted to delay an important decision, don't.

These do's and don'ts are pithy and perhaps simplistic but they rest on the detailed findings of the research on reconstruction in the four cities presented in the three chapters that follow.