Chapter 5

BUILDING ECONOMIC VITALITY INTO DISASTER RECOVERY

INTRODUCTION

A vital local economy is one of the fundamental principles of sustainability. Embracing sustainability in the local economy means paying attention to environmental, social equity, disaster resilience, and quality of life factors within the economy—not just to the bottom line. It means

- harmonizing economic development to ensure protection of environmental resources,
- accounting for the environmental costs of economic development,
- incorporating hazard mitigation into new development and redevelopment,
- striving for economic development and diversity that support a broad range of community needs,
- promoting economic decisions and investments that support social and intergenerational equity, and
- paying attention to design details that can maintain and enhance local quality of life.

The course to achieving these goals is artful and evolutionary, not prescriptive. It is a matter of bringing the perspectives of sustainability into every discussion of policymaking and investment that affects a community's economy.

This chapter is organized into four parts. The rest of the Introduction discusses opportunities and challenges posed to economic sustainability after a disaster, and the balancing of short and long-term perspectives. It also discusses the components of economic vitality, describes the structure of a local economy, and emphasizes the importance of understanding how the components may be affected by the disaster. The second section, Recovery Strategies for Building Economic Vitality, offers ideas about how disaster can be transformed into opportunity through a range of recovery strategies that support economic vitality. The third section, Pursuing Strategies for Economic Vitality during Recovery, outlines a series of actions a community can take to organize and succeed with sustainable economic recovery. The final section, Examples of Success, cites examples from disasters to illustrate the recent application of sustainable economic recovery.

Economic Opportunities and Challenges in Disaster Recovery

The economic component of sustainability will become especially prominent after a community is struck by a disaster. Recovery from disaster is fundamentally an economic proposition and requires that substantial capital be reinvested into the community. Public capital must repair and rebuild facilities and infrastructure. Private capital must be directed into business recovery and housing. Insurance funds provide another source of capital that can have a major impact on recovery. The pace and success of recovery will be determined by how well the community attracts, effectively utilizes, and sustains the flow of investment capital from a multitude of sources through the rebuilding period.

Through the disaster recovery process a community can have heightened opportunities to direct these capital investments to rebuild the economy and the community in ways that maximize its sustainability. Simultaneously, the community faces a substantial challenge in ensuring that sources of capital from outside the region align with local goals for sustainable development.

Outside sources can both spur sustainability and undermine it. For example, public assistance programs can mandate mitigation but impose requirements that limit a community's options. Private and public investment may be focused on limiting front-end construction costs (first costs) at the expense of long-term sustainability (lower life cycle costs for buildings). The policies and requirements for using insurance funds in disaster recovery are another variable that can have major consequences for sustainability.

These considerations are particularly important because research indicates that the percentage of reconstruction that is financed by sources outside the region is one of the most influential variables determining the success of recovery. Regional indebtedness and long-term losses from a disaster have been shown to decrease inversely relative to the share of outside capital that finances recovery (Chang, 1997).

The post-disaster situation forces a community to reassess its economic situation. In some cases, a disaster might involve only a cursory look at economic policy. For example, the Oakland Hills urban wildfire recovery was primarily residential in scope. In other instances, such as flood recovery in Grand Forks, North Dakota, and East Grand Forks, Minnesota, or earthquake recovery in Santa Cruz and Watsonville, California, and Kobe, Japan, the economic setting was changed in fundamental ways by the disaster. Recovery demanded that the communities create new opportunities and build economic components into their post-disaster recovery plans that reflected underlying changes in the local and regional economies.

Achieving A Balance

The process of rebuilding a more sustainable economy entails a critical balancing act. On the one hand, there is no recovery without economic vitality—no investment, no growth. Yet there may be potentially higher short-term costs associated with sustainable redevelopment, such as for buyouts of floodprone properties or for costs associated with the adoption and implementation of higher development standards or building codes.

At the same time, there is pressure to move fast and furiously after a disaster. This pressure can result in economic development being pursued without careful attention to environmental planning, social equity, and other elements of sustainability. This has the potential to re-create the same unsustainable, vulnerable conditions that turned the natural event into a community disaster in the first place.

The trick during recovery, therefore, is to demonstrate the long-term economic benefit of sustainable development (or redevelopment) while fully supporting short-term economic activity, and to infuse post-disaster plans, policies, and programs with principles of sustainability.

Pre-disaster planning and pre-disaster recovery policies can be especially important in achieving this balance and ensuring a holistic recovery. For example, if there is already a database of at-risk properties and plans for buyouts, that can help recovery move ahead more quickly. Having pertinent knowledge available from pre-event planning can make it easier for the people of a community to understand choices, make decisions, and support long-term implementation. Conversely, delay can be debilitating.

Economic Structure and Sustainability

Each community has a unique economic context and a specific set of drivers in the local economy. The overall health of the local economy will rise and fall with the fortunes of the specific economic sectors that are present in the community.

The economic sectors that make up a local/regional economy (manufacturing, services, retail trade, agriculture, construction, finance, tourism, education, and others), interact among each other in complex ways, exhibiting certain synergies and fluctuation of strength among the individual sectors. Economic vitality can be understood by examining the component parts of the local economy and assessing trends and opportunities within each sector. Factors such as employment, projected growth, relative significance of particular sectors within the total economy, and emerging outside forces such as the business cycle and industry-wide trends collectively establish the relative vitality of the local economy.

The relative sustainability of the local economy is a matter of how the economy is structured, and is an outcome of how well or poorly each sector of the economy functions with respect to environmental responsibility, social equity, disastrous events, and quality of life. For example, an agricultural economy that preserves farmland but chronically overdrafts a groundwater basin is not going to sustain itself. Conversely, conversion of prime farmland to meet human needs is not automatically “unsustainable” if it is done in a judicious way, based on a long-term plan that advances social equity, livability, environmental quality, and economic vitality by balancing and supporting both farming productivity and the provision of human needs through urban growth.

Economic Changes in the Aftermath of Disaster

Building economic vitality into disaster recovery must proceed from a clear understanding of the component parts of the economy and how the new post-disaster conditions affect those components. Here again, pre-event planning and analysis that address economic factors can help to jump-start and improve the quality of post-disaster planning.

In the post disaster setting the investment calculations may change dramatically. For example, a major retailer or manufacturing facility that was perfectly happy with the return on investment in the pre-disaster setting might not be willing to re-invest after the disaster because the cost of repairing or rebuilding may be substantially higher, thereby making re-investment unprofitable. Or, as in Kobe, Japan, and Northridge, California, a loss of local population centers may devastate local or neighborhood-serving small businesses. On the positive side, the disaster can provide new opportunities for economic development that were not possible previously.

Uncertainty compounds and heightens the post-disaster economic recovery challenges. Will competing areas forever take market share away from a local facility? How quickly will other businesses re-open to establish critical mass? How soon will infrastructure be in place? Will enough housing be available to sustain neighborhood-serving small businesses? How different will the new economic context be?

RECOVERY STRATEGIES FOR BUILDING ECONOMIC VITALITY

Building economic vitality can start—or continue—during disaster recovery. A community can start with the *situations* that exist after a disaster, pick and choose among the *options* for improving its economy and among the *tools* available to pursue each of those options, to develop *strategies* that are specially tailored to its own needs. The Matrix of Opportunities in Chapter 1 shows some of the options a recovering community could use to further economic vitality while it tends to other disaster-caused predicaments. The situations and options shown on the matrix, and the tools listed below, are not exhaustive; rather, they are meant to give an idea of the range of possibilities. Likewise, the sample strategies below suggest ways in which some options and disaster-induced situations could be combined to help a community improve its economy. Notice how each of the strategies suggested below uses one or more of the options listed on the Matrix of Opportunities under the second sustainability principle, "Enhance Economic Vitality."

Transforming Disaster into Opportunity

Economic vitality is the engine that drives recovery. Communities that have successfully recovered and sustained their economic vitality have demonstrated an ability to synchronize their local goals with larger market forces and to act on opportunities to create new partnerships not only with businesses and investors, but also with non-governmental organizations, insurers, educational institutions, and other segments of the community.

OPTIONS FOR BUILDING ECONOMIC VITALITY

- Support area redevelopment/revitalization.
- Attract/retain businesses.
- Attract/retain work force.
- Enhance economic functionality.
- Develop/redevelop recreational, historic, tourist attractions.

Economically successful communities

- conscientiously seek out what people's needs and preferences are,

- respond to community values in economic planning,
- creatively utilize traditional economic revitalization tools such as redevelopment authority,
- find ways to transform business districts into more interesting and diverse places,
- pro-actively seek and bring in investment and technical assistance partners from within and outside the community,
- establish positive images to attract investors,
- create new visions for their communities rather than attempting to restore what existed before the disaster, and
- formulate short-term survival strategies to maintain continuity in the economy while long term recovery takes place.

A disaster can provide a community with unprecedented opportunities to bring together economic, social equity, quality of life, and environmental goals. After a disaster, community awareness about the value and need for mitigation is extraordinary. Moreover, because the status quo is no longer an option, there can be greater openness to new ideas and to considering and learning from people with different perspectives. This facilitates the opportunity to move beyond old stereotypes and create new community political alliances.

Supporting Economic Vitality through Recovery Strategies

Nearly every aspect of the urban fabric can play a role in the functionality and success of the local economy. Here are some illustrations of how recovery of specific damaged community components can support economic sustainability through strategic post-disaster recovery planning and action.

Situation: Damaged transportation facilities
Recovery Strategies to Build Economic Vitality:

- Rebuild to enhance capacity. Increase the ability to bring people into a business district, and to move goods in and out of a community.
- Rebuild to improve functionality. Create a different circulation pattern; create and/or expand transit.
- Undo past mistakes and support redevelopment. Demolish an unneeded overhead freeway to re-establish a stronger urban pattern as a key element of economic revitalization of a district.
- Rebuild to promote more sustainable transportation systems. Change land use to promote higher density, mixed uses, and/or concentrated development in support of less auto-dependent transportation systems.

Situation: Damaged public facilities
Recovery Strategies to Build Economic Vitality:

- Rebuild to transform/expand school facilities in support of economic strategies. Form partnerships between the city and the school district to rebuild the high school auditorium as a community performing arts facility.
- Upgrade public spaces to support economic revitalization. Create new sidewalks and street furniture and plant street trees to create a downtown "civic living room" to enhance the pedestrian experience and increase commercial activity.
- Locate new public uses into a damaged area. Establish a community college branch in a downtown to expand activity and population. Establish a community center for displaced families and others to meet social goals and create higher activity level in support of economic goals.
- Rebuild key economic facilities to improve economic and environmental functionality. Rebuild a port facility with state-of-the-art characteristics resulting in greater capacity, reduced energy consumption, restoration of environmental features, enhanced pollution controls, and disaster-resilient design.

Situation: Damaged utilities
Recovery Strategies to Build Economic Vitality:

- Create new infrastructure that supports economic growth while incorporating sustainable features. Rebuild a damaged telecommunications system for increased capacity; establish stormwater systems where none existed; increase capacities of water, wastewater or power facilities to meet future economic needs; use disaster-resilient designs.
- Form partnerships with utility companies to upgrade the system. Add fiber-optics or other advanced technologies in infrastructure when it is rebuilt.

Situation: Damaged housing
Recovery Strategies to Build Economic Vitality:

- Create new housing opportunities to support area redevelopment. Establish new housing stock in a rebuilding area to support neighborhood-serving businesses.
- Create new housing stock to serve specialized needs in the economy. Leverage housing reconstruction assistance to alleviate farm worker housing shortages.
- Create housing to attract or retain businesses. Establish housing near job centers and in keeping with the housing needs and preferences of workers.
- Improve neighborhoods to attract or retain businesses. Establish new schools or parks to improve neighborhood vitality. Upgrade housing that was not damaged but could benefit from higher levels of mitigation or quality.
- Relocate housing out of hazard zones. Create new public attractions such as parks and recreation facilities in floodprone areas to mitigate a hazard and attract people into a business district.

Situation: Damaged commercial/industrial facilities
Recovery Strategies to Build Economic Vitality:

- Rebuild commercial buildings with enhanced business-supporting features. Rebuild retail buildings to have increased floor-to-ceiling ratios, window/display area, and better floor layouts.
- Create interim commercial facilities. Build temporary retail spaces consolidating multiple businesses in shared facilities.
- Establish and/or improve mitigation features. Rebuild commercial/industrial facilities in floodprone areas with elevated electrical elements and ability to seal water out in floods.

Situation: Environmental damage
Recovery Strategies to Build Economic Vitality:

- Restore damaged environmental features in ways that support other economic goals. Consider adding improved public pedestrian access along the coastline to encourage tourism while repairing coastal erosion damage.
- Integrate natural features into business district recovery. Upgrade damaged river levees with improved walkway connections and linkages with a downtown commercial area.
- Establish new tourism opportunities based on interest in understanding natural systems. Set up an "earthquake park" focused around dramatic examples of faulting, liquefaction, or landslides.
- Establish memorials or tributes. Memorialize people or events in new greenbelt areas.

Situation: Disruption of health and safety
Recovery Strategies to Build Economic Vitality:

- Relocate and reuse medical facilities to support economic as well as health objectives. Relocate a damaged hospital while repairing and re-using the previous structure for mixed use housing, commercial, or office uses.

Tools for Economic Vitality

Although long-term economic recovery is never an easy task, especially for small communities struck by natural disaster, the recovery team and the local planners have many resources at their disposal to help the community recover economically. Because economic recovery is recognized as being one of the most important, and difficult, aspects of disaster recovery, many federal agencies have programs to help communities get back on their feet.

TOOLS FOR BUILDING ECONOMIC VITALITY

- Redevelopment and housing
- Economic incentives
- Loan programs
- Public-private partnerships
- Capital improvements
- Redistricting

Redevelopment and housing

Housing is essential for economic recovery because a consumer base is needed to support the businesses in any community. Rather than developing pristine land, a community might consider redevelopment of existing areas by infilling and converting buildings to other uses. Infilling involves "filling in" undeveloped or less developed parcels of land in order to use the land more efficiently, and to encourage multiple-use

development. Natural disasters can also provide chances to redevelop economically depressed areas. One current trend in redevelopment is to convert old warehouses to lofts and apartments.

The redevelopment stage of recovery is also a good time to plan for affordable housing. Hazard-prone land is often inexpensive, and although property acquisition is a good idea for mitigating future natural hazards, doing so may leave poor residents unable to afford new housing. Communities that are economically diverse tend to be healthier economically, so planning for affordable housing makes sense for the economic vitality of the community as a whole.

The Federal Emergency Management Agency's (FEMA's) Disaster Housing Program provides for short-term lodging, home repair assistance, mortgage and rental assistance, and small grants to incorporate hazard mitigation in home repair.

Economic Incentives

State and local governments can use many economic incentives to encourage sustainable redevelopment. One is tax increment financing (TIF) districts. A TIF district establishes a current base level of taxation determined by existing property values and assigns additional increments resulting from increases in property values to a special fund used to pay for infrastructure improvements within the district. TIF districts are one mechanism for financing economic recovery in an area badly devastated by a natural disaster.

Another option is to assess impact fees. The idea is to make development pay the costs of infrastructure expansion. These fees can pay for new schools, libraries, police stations, and other services. Differential taxation is a mechanism that can be used by local government that seeks to retain undeveloped land in a hazard-prone area. The use of this tool is likely to be heavily dependent on state law, so its use in a given locality should be thoroughly investigated.

Finally, density can be reduced in hazard-prone areas using transfer of development rights (TDR). Property owners in hazard-prone places can sell their development rights to developers in nonhazardous areas.

Loan Programs

There are many sources of loans to help individuals and small businesses recover. The U.S. Department of Agriculture's Farm Service Agency provides low-interest loans to family farmers and ranchers for production losses and physical damage. This agency also provides loans for farm operating costs, and loans for improving farms and ranches, including soil and water conservation activities that can contribute to natural hazard mitigation.

The Economic Development Administration (EDA) of the U.S. Department of Commerce awards revolving loan fund grants to state and local governments to provide a source of local financing to support business and economic recovery after a major disaster when other funding is insufficient or unavailable.

The FEMA Community Disaster Loan Program provides loans of up to 25% of a local government's annual operating budget to help communities recover from disaster.

The Small Business Administration (SBA) provides direct loans, called Economic Injury Disaster Loans, to small businesses and agricultural cooperatives to help with disaster recovery. The SBA also provides physical disaster loans, which are direct loans to businesses, nonprofit organizations, and individuals to repair or replace uninsured property losses caused by disaster.

Public-private Partnerships
Probably the best publicized public-private partnership is FEMA's Project Impact initiative, which was based on the principle that preventive actions must be decided at the local level, with private sector participation. Under this agreement, government provides expertise and technical assistance at the national and regional levels, while the community is responsible for planning and engaging the private sector. This is only one possible public-private partnership design. A community should consider benefits the local government can provide to the private sector, in exchange for their participation in mitigation and other sustainability activities.

Capital Improvements
A local government's spending authority should not be overlooked after a natural disaster. Making capital improvements to existing infrastructure can promote economic development and vitality. Moving existing schools, fire stations, and other facilities out of the way of natural hazards is a sensible use of local funds. A community's sustainable redevelopment plan should specifically disallow siting of public facilities in hazard-prone areas.

A few communities have moved their main economic districts away from the path of danger. Soldiers Grove, Wisconsin, moved its downtown business district away from the Kickapoo River in the early 1980s. Pattonsburg, Mississippi moved the entire town to higher ground after the 1993 Midwest floods. If mitigation is necessary, FEMA Public Assistance or Hazard Mitigation Grant Program funds can be used to retrofit or move damaged infrastructure. Moreover, a community may redirect Community Development Block Grants as the non-federal match for Hazard Mitigation Grant matching money in order to make mitigation more affordable.

Redistricting
Local governments can send a market signal to developers and home buyers by establishing the principle that special services, such as those likely to be used during and after a natural hazard, must be supported through special taxes, fees, or assessments in the affected area. California set a precedent for this kind of redistricting by establishing Geological Hazard Abatement Districts. Local governments in the state can establish special assessment districts in the area of known geologic hazards and collect fees from property owners to finance repairs from landslides and implement geologic hazard mitigation measures.

PURSUING STRATEGIES FOR ECONOMIC VITALITY

Once its recovery ideas—or strategies—are identified, the community will need to explore them through a systematic process in order to decide on the best approach, select feasible tools, locate technical assistance, formulate details, plan for action, find funding, get approval, and move toward implementation.

Within the 10-step process described in Chapter 2, the following activities in particular will help ensure that economic vitality is improved during a community's disaster recovery.

Actions to take during Step 1, Get organized.

Economic recovery may be accomplished with a series of focused planning endeavors, or there may be a need for a more comprehensive plan. In either case, economic planning must be structured so that key stakeholders and the broader community are both involved in the process of identifying and resolving issues.

What to Do

- Consult with businesses, organizations, and community leaders to plan a recovery process for the various components of the local economy.
- Use specialists (local and/or outside expertise).
- Ask for planning grants and technical assistance from federal and/or state sources.
- Make sure key business stakeholders are represented on recovery planning committees.

Actions to take during Steps 2 and 3, Involve the community.

Both professionals and the general public need to be included in considering economic sustainability. Much new learning can take place in the recovery planning process as competing factions and perspectives from within the community become united by a common goal. The desire to participate is heightened as is openness, flexibility, and willingness to compromise. But there must be a demonstrated commitment to community involvement and a viable participatory process. See Chapter 3 for ideas on how to use a participatory process during recovery.

What to Do

- Design public participation into various components of recovery.
- Include the business community and insurance industry.
- Publicize the sustainability and economic factors that will drive the decisionmaking.
- Be open to new formats for participation (lectures, workshops, and other activities beyond the traditional public hearing and town meeting formats).
- Take advantage of technology for disseminating information and getting ideas and response.

Actions to take during Steps 4 and 5, Identify and evaluate the economic problems.

Assess the post-disaster economy. Disasters can have the effect of compressing and accelerating previous trends. For example, if a downtown is in a slow decline, the disaster might fast-forward the negative trend and compound it. Conversely, new opportunities may be emerging. The Matrix of Opportunities in Chapter 1 can be used as a starting point for identifying what changes the disaster may have brought.

What to Do

- Get expert analysis of trends, costs of rebuilding, and opportunities for economic growth.

- Do an impact analysis of the effects of the disaster on various aspects of the local economy.
- Consider sponsoring training sessions for small business owners to let them know what they may be facing during disaster recovery that they might not realize—both problems and opportunities—and the assistance that could be available to them. The *Disaster Planning Toolkit*, developed by the Institute for Business and Home Safety, is a good basis for such a workshop (see the list at the end of this chapter).

Actions to take during Step 7, Explore all alternative strategies.
While the pressure is on to act quickly, the recovery period offers an opportunity to act on new understanding of environmental hazards and other components of long-term sustainability. Insist that full consideration of sustainable principles be part of the economic recovery planning. Unite economic, social equity, quality of life, and environmental perspectives, and examine the potential impact of each alternative on the status of the other aspects on sustainability within the community.

Select from the opportunities identified under Step 5, the goals and objectives set in Step 6, and the options and tools described in this chapter. Expand and tailor them to meet a community's needs.

What to Do

- Establish sustainability principles as part of economic recovery planning.
- Evaluate and compare the economic outcomes of various planning options.
- Identify economic and other consequences of *not* rebuilding in environmentally and socially sustainable ways.

The following additional suggestions will help a community structure its approach to economic recovery. Although some elements overlap with other components of sustainability, this list focuses on the needs and objectives particular to economic recovery.

HINTS FOR ECONOMIC RECOVERY

- Keep the economy going in the short-term.
- Build capacity for the long haul.
- Be opportunistic; move quickly.
- Establish new partnerships.
- Pursue multiple strategies and momentum-building projects.
- Develop new local recovery resources.

- **Keep the economy going in the short term**. While long-term planning is taking place, make sure that the critical components of the local economy are as functional as possible. Devise strategies and funding to create interim facilities such as commercial locations, port facilities, and manufacturing areas.

  What to Do

  - Work with businesses directly on interim operating strategies.
  - Establish funding sources and administrative capacity to reconstruct damaged facilities or set up temporary ones.

SUPPORTING SMALL BUSINESSES

Small businesses typically have a much harder time sustaining themselves after a disaster than do large businesses or corporate entities. Small businesses may suffer a host of burdens such as loss of immediate population (locally focused market), shortage of employees, disrupted traffic circulation, cash-flow problems, lack of capital, and loss of suppliers.

Sometimes business owners who work hard to recover end up worse off than those who pulled out (e.g., they exhaust personal and business sources of capital), even after obtaining forms of assistance, because they do not fully understand the changed economic context and do not adjust their business plans accordingly.

Local governments can support small business recovery by generating and disseminating economic analyses that businesses can use in their own planning. Businesses need to know:

- how the disaster affected their customer base (who is left, what they can afford);
- the relative demand for their goods and services in the post-disaster setting;
- how the disaster affects their key suppliers;
- competitive advantages that other areas possess and the likelihood of market share shifting elsewhere as a result;
- new opportunities in the post-disaster setting that can be maximized by the small business; and
- what the government will do with respect to short- and long-term recovery plans and how these plans might support their particular business.

This kind of information can be a critical component of the local support package that should also include restoration of utilities and infrastructure, financial support such as loan or grant programs, and strategies for temporary relocation of businesses.

Small businesses, meanwhile, would be well-advised to make a new business plan that is fully cognizant of the above factors in formulating their own post-disaster recovery strategy.

- **Build capacity for the long haul**. Recovery of the economy can be a long-term proposition, as is the inclusion of more environmentally sustainable land use and design decisions. Because recovery takes place in a series of small increments, goals and policies formulated early in the process must be consistently implemented over time with ongoing funding, and by institutionalizing appropriate regulations and procedures.

  What to Do

  - Make sure that plans, goals, and policies have implementation plans and mechanisms associated with them that ensure consistent attention over time.

- **Establish new partnerships**. Many of the early investments in economic recovery require new efforts by the local government to reach out and establish new partnerships. Government involvement can range from brokering deals and bringing potential partners together to political persuasion (e.g., cajoling re-investment in a damaged area) to

financial involvement with key economic players such as an anchor retailer in a damaged central business district. The non-profit sector can also be a significant source of financial, technical, and administrative capacity.

What to Do

- Begin discussions immediately with key retail, manufacturing, insurance, educational, or other local and regional economic heavy hitters to discuss and formulate mutually supportive and sustainable economic strategies.
- Strategize with state and federal elected officials to create and support intergovernmental and public/private partnerships.
- Work with local, regional, and national non-profit groups such as community foundations, housing or economic development corporations, and environmental or professional organizations, to find ways to focus new resources into recovery.
- Look for ways in which the goals and objectives of other organizations can be focused to support local economic recovery actions (e.g., expanding a pre-disaster project or investment by leveraging post-disaster assistance).

- **Be opportunistic; move quickly**. In the initial aftermath of the disaster many offers of assistance are forthcoming from many public and private sources. This window of opportunity closes as attention drifts elsewhere. Successful economic recovery maximizes these brief moments of potential by moving quickly and responsively to take advantage of them.

  What to Do

  - Set up procedures and have sufficient staff time devoted to receiving, pursuing, and processing offers of economic assistance. Avoid lengthy delays.
  - Be creative in seeking out grant funding, technical assistance, or in asking for assistance from agencies with whom the community already has established relationships.
  - Do not focus solely on FEMA's reimbursement process or the assistance provided by the federal government

Urban Land Institute Advisory Panels

The ULI has provided advisory services for communities recovering from disaster, for example, in Watsonville and Santa Cruz, California, after the 1989 Loma Prieta Earthquake. ULI panels consist of 7–12 experts (typically architects, planners, economists, and developers) whose recommendations (including written text and graphics) can be quite specific and can form a focused starting point for economic recovery planning. In disaster recovery situations the Washington, D.C.-based organization provides the service at no charge (except for expenses), with the panel members volunteering their time. Panel members conduct extensive interviews, analyze available economic data, and conduct on-site evaluation of opportunities. Communities can enlist sponsors to help defray the expenses. For example, Pacific Gas and Electric was a partial sponsor of the Watsonville ULI panel.

Other professional organizations such as the American Institute of Architects or the American Planning Association have been similarly helpful to communities recovering from past disasters.

under the Stafford Disaster Relief and Emergency Assistance Act. Other resources and tools can be extremely helpful.

- **Pursue multiple strategies and momentum-building projects**. With so much uncertainty in the recovery process, it is important to move in parallel on multiple fronts, recognizing that some approaches will pan out and others will be discarded. Early "wins" can be especially critical by setting a positive tone to the recovery and encouraging further investment.

  What to Do
  - Identify and prioritize projects that would be especially valuable in jump-starting the recovery, or in demonstrating environmentally responsible economic development.
  - Encourage an entrepreneurial environment to encourage creative recovery strategies. Tolerate false starts so as not to discourage risk-taking.

- **Develop new local recovery resources.** One of the challenges is that public funds for recovery come with conditions and requirements. These sometimes involve cumbersome procedures that can cause delays, or lead to funding gaps in specific projects. Sometimes too these funds cannot be applied in ways that would be most effective for a community's context. Local resources can provide a flexible solution to these dilemmas.

  What to Do
  - Consider local resources, such as a temporary sales tax surcharge, to provide flexible, locally-controlled sources of supplemental financial assistance.
  - Determine how such resources could be supported politically and adopted.

EXAMPLES OF SUCCESS

Flood Recovery in Grand Forks, North Dakota, and East Grand Forks, Minnesota

The downtown areas of Grand Forks (population 52,000) and East Grand Forks (population 9,000) rebounded from the devastating Red River Valley flood of April 1997, providing a successful model for sustainable economic recovery. The communities suffered an estimated $2 billion in losses but have used the recovery process to transform themselves physically and economically. Both downtowns were completely flooded and 75% of housing units were damaged or destroyed. Recovery was made possible by an aggressive and focused re-investment of public and private capital and planning that re-invented the downtown areas with new amenities and a blend of new and old businesses. Some highlights of the effort are described below.

Economic Revitalization

- A greenway system encompassing 2,200 acres of land between the two cities will improve and restore ecological stability of the Red River corridor, become an economic feature with recreational and tourist amenities, provide a focal resource within both downtowns, improve linkages between the communities, and provide flood protection.

- An "invisible" floodwall in East Grand Forks allows the downtown and river to interrelate aesthetically—an economic plus for the downtown area. The base of the floodwall will protect against a 100-year flood and sections can be added when needed to provide additional protection.

- Substantial investments ($49 million in Grand Forks) were made in business redevelopment from multiple sources. Nearly $10.7 million in EDA funds were committed to support key anchor activities such as a new corporate center downtown.

- A variety of programs in Grand Forks directly targeted local business needs, including a $1.9 million revolving loan fund; a loan interest subsidy program; and central business district relocation, rehabilitation, and acquisition and demolition.

- Other efforts to provide business assistance included programs for job incentives, land acquisition, land development, and capital improvements to parking areas.

- A new town square and other physical improvements were funded and incorporated into the rebuilt central business district in Grand Forks.

- A new industrial park was set up on the west side of town, out of the floodprone area.

- A struggling 1970s enclosed mall damaged in the flood was removed and the street re-established to be consistent with the historic pattern of the downtown area.

Economic Partnerships

- East Grand Forks recruited Cabela's, a major outdoor (hunting/fishing) retailer, to establish a 62,000-square-foot regional outlet to anchor its downtown.

- East Grand Forks bought and renovated the flooded Holiday Mall, renaming it Riverwalk Center. At first the plan was to temporarily house displaced businesses there, but after Cabela's decision to locate downtown, the City decided to expand the mall instead. It found another anchor tenant, Crafts Direct, one of the Midwest's largest craft supplies retailers, to move in and further establish the downtown as a regional destination.

- Grand Forks established a new Corporate Center to replace office space downtown and retain businesses.

- Public sector commitments to re-investment in both downtowns stimulated a range of private sector re-investment, including construction of new, larger buildings such as the building of the *Grand Forks Herald* as well as smaller restaurants and shops.

Opportunity Funding

- Both communities developed strong partnerships with their respective state governments and the federal government. Success in obtaining this level of state and federal support illustrates the importance of political partnerships with legislators.

- Minnesota's state flood recovery package included funding for grants to local governments for locally administered loans for business development, which was instrumental in the recovery of East Grand Forks.

- More than $283 million was invested in recovery projects in Grand Forks, including $171.5 million in Community Development Block Grant funding, $10.67 million in EDA funds, $18.5 million in commercial financing, $13.4 million from Fannie Mae/Federal Home Loan Bank programs, and $66.4 million in reimbursements from FEMA.

- East Grand Forks received nearly $75 million in assistance from multiple federal agencies (including the U.S. Army Corps of Engineers, FEMA, and the departments of Agriculture, Commerce, Human Services, Housing and Urban Development, and Labor), and state sources (Minnesota Housing Finance Agency, Bureau of Water and Soil Resources, Department of Natural Resources, Department of Trade and Economic Development).

- Private foundations were a significant source of recovery funding. A Flood Relief Fund managed by the North Dakota Community Foundation provided $1.3 million in assistance to the Grand Forks/East Grand Forks area.

- An "Angel Fund" started with an anonymous contribution of $15 million provided over $20 million in assistance to families (up to $2000 per family).

Technical Assistance

- Both communities made use of technical assistance offered by the universities (North Dakota State University, University of North Dakota, and the University of Minnesota) in discussions related to the redesigning of the river and downtown areas. Grand Forks also received expert assistance from Northwest Technical College, FEMA, and HUD.

- In September 1997, Grand Forks brought in the Urban Land Institute, a national nonprofit professional organization of the real estate and development professions, to conduct a week-long investigation and make recommendations for redevelopment and economic strategies. Their recommendations (making the river a focal point of the downtown, construction of a flood wall, creation of a bi-state river park, building a town square, and utilizing mixed use land use strategies) were largely embraced in the recovery.

Community Involvement and Partnerships

- Underlying the success of the recovery planning was an ongoing commitment to community participation in the process. For example, a downtown development committee was set up in Grand Forks, and the Greenway Alliance, established in 1999, included broad representation from local, state, and federal agencies as well as local organizations, the University of North Dakota, and private businesses.

- Minnesota used a "bottom-up" approach to recovery that emphasized a "one-stop" procedure through which communities applied for assistance based on locally determined priorities. The state role was to expedite the process and provide technical assistance.

- Minnesota attributes recovery success in large part to the variety of local and regional development partnerships involving Regional Development Commissions, Housing Partnerships, Community Action Agencies, Housing and Redevelopment Authorities, Minnesota Initiative Regions, and private consulting firms. With many local governments and officials overwhelmed by the disaster, these partnerships and organizations were able to provide much needed support in the form of technical assistance in identifying, organizing, and implementing local recovery projects.

The success story of the post-flood recovery of Grand Forks/East Grand Forks illustrates how investment in a sustainable economy is interwoven into all facets of the recovery effort. Both communities have implemented focused economic strategies in concert with long-term mitigation efforts that incorporate improved urban design, greater public amenities, and stronger linkages between natural systems and the built environment.

A Sampling of Successful Community Economic Strategies

Short-term Survival

Collaborative efforts to establish short-term locations for businesses have been successfully deployed in numerous post-disaster settings (Grand Forks, Kobe, Santa Cruz). These involve business-to-business cooperation as well as government support. Organized campaigns to maintain retail trade in damaged areas also can be critical.

Strategies for the Short Term

- In Santa Cruz, a new non-profit entity was created (Phoenix Partnership) to secure funding, oversee construction, and manage the leasing of temporary pavilions erected on city parking lots. Although initially intended to be a six-month stop-gap measure, some of the pavilions were needed for several years.

- Los Gatos instituted a "Passport to Shop" program involving newspaper distribution of 50,000 passports with coupons for local businesses. Santa Cruz developed a "Buy Santa Cruz" campaign with events and publicity and pledges by local residents to spend their Christmas dollars in the recovering downtown.

- The Port of Kobe restructured labor agreements and established 24-hour shipping in makeshift facilities to maintain some level of shipping trade while the port was being rebuilt. Without this effort, Kobe's loss of market share to other Asian ports, which was substantial, would have been even worse.

Downtown Revitalization

Several key elements consistently have been demonstrated as critical to successful and sustainable downtown revitalization. Disaster recovery provides an opportunity to embrace, fund and pursue these features:

- High densities
- Mixed use, including housing in or near downtown
- Historic preservation
- Pedestrian character
- Linkage to natural features (e.g., river corridors)
- Active civic public spaces and community centers
- Multiple functions
- Anchor retail
- Street level activity
- Public space/streetscape design reinforcing historic character
- Urban, not suburban, building forms and land use patterns
- Strict and enforced design and signage policies
- Functional circulation and parking balancing auto and other transportation modes.

Downtown Revitalization/Historic Preservation

- After the 1995 Northridge earthquake, Fillmore, California (population 13,000), used a pre-quake downtown specific plan, aimed at stimulating its struggling historic downtown, as its recovery blueprint. Having a plan in place helped accelerate the recovery and secure post-disaster funding from federal, state, and private sources.

- After the 1989 earthquake, Watsonville, California (population 38,000), used federal and state support to recruit and economically support (through redevelopment funding) a major retail department store to anchor its downtown and support other small businesses. In addition, a non-profit small business incubator was established with grant money to facilitate small business start-ups in the central business district.

- Santa Cruz, California (population 50,000), adopted a Downtown Recovery Plan in 1991 that facilitated mixed uses, and created new streetscape and design guidelines to re-establish the historic visual character of the downtown and implement other public values. It also provided certainty to the approval process, and targeted public investments in parking and other infrastructure in order to encourage private investment. A major community involvement effort (an 18-month process involving a 36-member advisory committee called Vision Santa Cruz) preceded adoption of the plan and resulted in widespread support despite a politically contentious environment.

- Within a week of the 1989 earthquake, Los Gatos, California (population 25,000) decided to encourage repair rather than demolition of its older downtown buildings in order to retain its historic qualities.

Sustainable Urban Design and Mitigation

More effective design and building patterns and techniques can often be incorporated into cities after a disaster brings the opportunity about. Traffic patterns and commercial developments can proceed in way that improve the appeal of the city and also minimize future damage and disruption in the event of a disaster.

Vitality and Mitigation in Urban Facilities

- Kobe, Japan (population 1.1 million) emphasized in its Restoration Plan after the 1995 Great Hanshin Earthquake the creation of a network of water and greenery in the city that would add to the quality of life, create an amenity to attract new population, and provide added safety and mitigation (open areas where people could gather in an emergency). The first urban greenbelt in Japan was established adjacent to the city at Rokko Mountain.
- After years of debate, San Francisco decided to demolish rather than repair an earthquake-damaged elevated freeway along its Embarcadero waterfront area. The re-designed public space has contributed to a major economic revitalization of the immediate area, which also includes the new privately funded waterfront baseball park (Pacific Bell Park), home of the San Francisco Giants.
- Watsonville industries (primarily food processing and manufacturing) re-assessed their disaster preparedness after the 1989 earthquake, even though the damage had been minimal. Many subsequently undertook seismic mitigation/retrofit projects, including external bracing and securing of contents.

REFERENCES

Chang, Stephanie. 1997. "Reconstruction and Recovery in Urban Earthquake Disasters." Proceedings of the 5th US/Japan Workshop on Urban Earthquake Hazard Reduction. Oakland, CA: Earthquake Engineering Research Institute.

WHERE TO FIND MORE INFORMATION

Training Courses and Workshops

Federal Emergency Management Agency, Emergency Management Institute, National Emergency Training Center. Emmitsburg, Maryland. www.fema.gov/emi [accessed June 15, 2001] (301) 447-1035.

- "Disaster Resistant Jobs Training Course: Train-the-Trainer." Course materials include videotape and hard-copy training materials.
  The U.S. has experienced multiple major catastrophic natural disasters in recent years, causing severe physical and economic damage to states and local communities. This experience demonstrates that disasters have long-term impacts on the nation's economy. It is in the best interest of government to help accelerate a community's postdisaster economic recovery and to safeguard its jobs by insulating the local economy from the impact of future disasters. Building partnerships among individuals, businesses, and government is the most effective way to achieve this goal. This course teaches participants to: 1) understand what the term "disaster-resistant community" means; 2) be able to use a disaster "Tool-Kit;" 3) understand the importance of creating disaster-resistant jobs; 4) understand the role of integrating disaster-resilient economic development planning in a community; 5) understand the components of the disaster-resilient economic development planning process; and 6) identify a key audience to target and develop a brief presentation that conveys the importance of organizing efforts to build disaster resistant communities.

- "Disaster-Resistant Jobs Training." Federal Emergency Management Agency Course G246.
  This 2-day course is designed to highlight the need for the local business community to mitigate and prepare for disasters. Communities must protect their economic base in order to survive and thrive in the wake of a disaster. This course will help local leaders recognize the impact of disasters on business and industry and what steps need to be taken to lessen the impact of disaster on local jobs.

University of Vermont, Applied Curriculum for Community Economic Sustainability (ACCESS). Burlington, Vermont. www.uvm.edu/~jkolodin/access/ [accessed August 3, 2001]
The ACCESS program has three specific objectives: 1) to introduce "real" problems of rural enterprise/local government into three capstone courses; 2) to develop case studies and integrate them into the required introductory course for all majors; and 3) to give students the

experience to utilize knowledge gained in the classroom, using Vermont as their laboratory, through internship opportunities across the state.

Organizations

Federal Emergency Management Agency. "Assessment of the Economic Impact of Hurricane Floyd on North Carolina Communities." FEMA Virtual Library and Reading Room.
This contains a "Resource Guide for Business Recovery."
See www.fema.gov/library/a_dr1292nc.htm [accessed August 3, 2001]

Minnesota Sustainable Communities Network (MnSCN).
MnSCN is sponsored by the Minnesota Office of Environmental Assistance. The goal of MnSCN is to "encourage networking, information exchange, and better access to assistance." The network contains over1500 individuals, businesses, local governments, educational institutions, and organizations who are interested in promoting sustainability in Minnesota.
See www.nextstep.state.mn.us/index.cfm [accessed June 22, 2001]

W.K. Kellogg Collection of Rural Community Development Resources.
This collection, housed in Lincoln, Nebraska, contains community development materials funded by the Kellogg Foundation and other selected sponsors of recognized rural programs. Guidebooks, manuals, workshop materials, reports, books, and videos are included. The collection is searchable via the internet, although the collection itself is non-circulating.
See www.unl.edu/kellogg/main.html [accessed June 15, 2001]

Videos, CD-ROMs, and DVDs

Taking the Initiative. Federal Emergency Management Agency, Emergency Management Institute. 2000. Emmitsburg, MD.
This 20-minute video shows how a neighborhood, two small towns, and a business owner took responsibility for and got organized to adopt sustainability principles and techniques in coping with hazards. The three separate instances, all in California, illustrate participatory processes, taking initiative, looking at the economic benefits of hazard mitigation (in one case, elevating a restaurant), incorporating livability components into a flood protection measure, and protecting the local environment and habitat. The video is available from the Emergency Management Institute at 1-800-238-3358. Ask for the "Disaster-Resistant Jobs" video.

Quality Redevelopment of Eastern North Carolina. Horizon Video Productions. 2000. Durham, NC.
This 20-minute video was produced by the state in the aftermath of Hurricane Floyd to introduce and educate local and state officials about the "better ways" available to recover from the disaster and at the same time address other local concerns such as environmental quality, economic vitality, housing, sense of community, business and job opportunities, and disaster mitigation. It introduced a framework espoused by the state for sustainable community action and features the governor explaining the tenets of "quality redevelopment" and how it can—and did—benefit North Carolina communities and help ensure a better future for the state's citizens. Available

from North Carolina Department of Emergency Management, 1830-B Tillery Place, Raleigh, NC 27699; (919) 751-8000; fax: (919) 715-9763.

Mitigation Revitalizes a Floodplain Community: The Darlington Story. Wisconsin Department of Natural Resources. 1997. Madison, WI.
This is a splendidly produced videotape about the efforts of a small rural Wisconsin community to reverse the effects of neglect and disinvestment in its historic downtown area caused by repeated flooding and economic change. Using a multi-objective planning and management strategy, officials and citizens, in partnership with government agencies and private entities, identified six goals: 1) preserve the historic character of the downtown; 2) restore community pride; 3) acquire and relocate commercial properties at risk; 4) elevate and flood proof commercial and residential structures; 5) stimulate investment downtown; and 6) pursue tourism as an economic strategy. The video follows the mitigation process from early meetings through floodproofing and relocation. Produced by the Wisconsin Department of Natural Resources. 27 minutes. 1997. Available free from Wisconsin DNR, P.O. Box 7921, Madison, WI 53707-7921; (608) 264-9200.

Books, Articles, and Papers

Aguirre International. 1996. *EDA's Post-Disaster Assistance Program After Hurricane Andrew: Final Report*. Washington, D.C.: U.S. Dept. of Commerce, Technical Assistance and Research Division, Economic Development Administration. 128 pp.
After Hurricane Andrew in south Florida in 1992, the Economic Development Administration (EDA) helped communities and organizations by providing over $50 million in planning grants and revolving loans; infrastructure projects and building renovations and improvements; and training and technical assistance programs. This report evaluates the effectiveness of these programs, asking: Can appropriate economic assistance help communities regain their former condition and even enhance their quality of life? and, Does such assistance have implications beyond the immediate disaster area? Researchers examined the effectiveness of projects in attaining specified goals, the appropriateness of each project to the needs created by the disaster, the economic impacts of the projects, and the social impacts on and benefits to target populations. They discovered that EDA projects have a regional impact, projects do stimulate economic growth, and EDA was generally effective in maintaining an ongoing relationship with local officials and potential grantees.

Arnold, Matthew B. and Robert M.Day. 1998. *The Next Bottom Line: Making Sustainable Development Tangible.* Washington, D.C.: WRI Publications. 64 pp.
This report tries to bring sustainable development down to earth for a business audience. Its authors break down the abstract ideals of sustainable development into ideas small enough to grasp and powerful enough to lead to new business opportunities. The authors offer a road map for businesses to find financial success in the solutions to environmental and social challenges.

Becker, William S. and Roberta F. Stauffer. 1994. *Rebuilding the Future–A Guide to Sustainable Redevelopment for Disaster–Affected Communities*. Golden, CO: U.S. Department of Energy,

Office of Energy Efficiency and Renewable Energy, Center of Excellence for Sustainable Development. 18 pp.
This document summarizes why sustainability is important and gives an example of sustainable development in one community, Soldiers Grove, Wisconsin. The reader is walked step-by-step through the holistic recovery process. The last chapter discusses real-life problems that the planner may encounter. There is an appendix to the report with a comprehensive list of resources. This document is available online at www.sustainable.doe.gov/articles/RFTF1.shtml [accessed June 15, 2001]

Berry, Wendell. 2000. "A Return to the Local: You Stay Home Too." *Worldwatch* (September/October):29-33.
Berry argues that the basis of a sustainable economy is vitality of local economies, which are fundamentally different from the global system.

Casey-Lefkowitz. 1999. *Smart Growth in the Southeast: New Approaches for Guiding Development.* Washington, D.C.: Environmental Law Institute Research Publications.
The southeastern United States has been trying to find ways to continue to reap the benefits of the region's bustling economy without the mounting fiscal, health, and environmental costs of poorly planned development. This report provides an overview of land use and transportation trends in seven states—Alabama, Georgia, Florida, North Carolina, South Carolina, Tennessee, and Virginia—and shows how these states are beginning to shape the pace and location of development by promoting community revitalization, conservation, and transportation alternatives.

Childers, Cheryl and Brenda Phillips. 1998. *Sustainable Development or Transformative Development? Arkadelphia, Arkansas After the Tornado.* Quick Response Research Report #109. Boulder, CO: Natural Hazards Research and Applications Information Center. 12 pp.
The authors visited the small town of Arkadelphia, Arkansas after an F-4 tornado had destroyed much of its downtown and three residential neighborhoods. Leaders of this town characterized the rebuilding effort as "sustainable." The researchers interviewed 31 individuals representing organizations from the national level to the local level and ranging from paid staff to volunteers. They determined, as an initial finding, that residents of impacted communities apply "sustainable development" as it fits their understanding, needs, and interests. Also, the term began to mean different things to different people as recovery ensued.

Federal Emergency Management Agency. 1997. *Report on Costs and Benefits of Natural Hazard Mitigation*. Washington, D.C.: Federal Emergency Management Agency. 52 pp.
Are the costs to reduce or eliminate the impacts of natural hazards substantially less than the benefits they provide? This report reviews the benefits that can accrue to different segments of society from mitigation, the costs that can be incurred by undertaking mitigation, and the analyses needed to evaluate the cost-effectiveness of the measures. It has 16 case studies across the United States and demonstrates their efficiency against several types of natural hazards, as well as the effectiveness of other mitigation tools. The studies include seismic retrofitting of lifelines in Tennessee, reinforcement of highway bridges in California, historic preservation and community development in Wisconsin, mitigation in hospitals in California, reduction of business interruption costs in Iowa, seismic retrofitting in Los Angeles public schools, wind

shutter protection in Florida, acquisition and relocation of floodplain structures in Missouri, regulation of unreinforced masonry buildings in Los Angeles, land use and building regulation along the coasts of Florida, land-use and building requirements in floodplains, and seismic retrofitting to avoid business disruption. The cases include both public- and private-sector initiatives.

Institute for Business and Home Safety (IBHS). 1999. *Open for Business: A Disaster Planning Tool Kit for the Small Business Owner*. Institute for Business and Home Safety.
This tool-kit is designed to help small business owners identify the hazards they may face, plan for and reduce the impact of disasters, keep their business open when disaster hits, and advise on insurance, disaster supplies, and other things the business owner can do to make his/her business more disaster resistant.

Kline, Elizabeth. 1997. *Sustainable Community: Topics and Indicators.* Available online at ase.tufts.edu/gdae/modules/modinstruct.html [accessed June 22, 2001]
These narratives about sustainable community indicators were developed under a contract with the U.S. Environmental Protection Agency. The primary audiences are community practitioners and technical resource people.

Louisiana Governor's Office of Rural Development. n.d. *Louisiana Small Towns Program.* Baton Rouge, LA: Louisiana Governor's Office of Rural Development.
The Louisiana Governor's Office of Rural Development, under a grant from the U.S. Economic Development Administration, conducted the Louisiana Small Towns Program to help communities plan for a successful future. This is a grant report with findings from the program.

Minnesota Department of Public Safety. *Recovery From Disaster Handbook*. St. Paul, MN: State of Minnesota. Available at www.dem.state.mn.us/publications/Recovery_Handbook/index.html [accessed July 23, 2001]
This handbook provides local units of government with guidance in long-term recovery after a disaster. The restoration process places great demands on government and the private sector. This manual will lessen the stress by providing answers and advice to many questions that arise from those who have dealt with recovery from disasters. Tool kits give information specific to each topic, some forms, and information to share with the victims of the disaster as they recover.

Philippi, Nancy S. 1996. *Floodplain Management: Ecologic and Economic Perspectives*. San Diego, CA: Academic Press. 225 pp.
When economic and ecological concerns conflict, effective floodplain management often suffers. The author examines the reasons behind these conflicts and points to solutions. She discusses the challenge of managing floodplains, the need for floodplain management, the public interest and how to define it, governments and their roles, harmful effects of floodplain management, case studies of the Mississippi and American Rivers, and scenarios for effective management. Appendices reprint several important documents useful for the understanding of floodplain management in the United States.

Public Works and Economic Development Association. 1999. *Economic Development Directory.* Prepared for the Economic Development Administration , U.S. Department of Commerce. Washington, D.C.: Public Works and Economic Development Association. 153 pp.
This directory is a convenient and functional information tool to facilitate communication between the various elements of EDA's program components. It is meant to serve economic development practitioners, EDA grantees, associations, and others who are seeking information on EDA's economic development activities in all 50 states and territories.

San Francisco City Planning Department. 1987. *Earthquake Hazards and Housing–Summary Report*. San Francisco, CA: San Francisco City Planning Dept. 26 pp.
With a vacancy rate of less than 1%, San Francisco has virtually no low-rent replacement housing. A large portion of the existing low-rent housing stock is located in areas built of unreinforced brick–a structure type particularly vulnerable to earthquakes. To help maintain a safe low-income housing stock in the vulnerable unreinforced masonry (URM) buildings, this study was commissioned to examine the range of seismic retrofitting measures available for prototypical residential buildings in the city, and the financial profiles of owners and tenants in URM buildings. Using the experiences of other cities that have adopted retroactive URM building codes, the researchers applied the specifications of their seismic strengthening requirements to the masonry building stock in San Francisco.

Tierney, Kathleen J. 1995. *Impacts of Recent U.S. Disasters on Businesses: The 1993 Midwest Floods and the 1994 Northridge Earthquake*. Preliminary Paper No. 230. Newark, DE: University of Delaware, Disaster Research Center. 53 pp.
This report utilizes a methodological approach first applied to the Des Moines area to try to ascertain how the 1994 Northridge earthquake affected businesses in Los Angeles and Santa Monica. Both studies survey both large and small enterprises and a range of business types. Topics discussed in the paper include physical damage to business properties; lifeline service interruption; rates of and reasons for business closure and relocation; use of insurance, Small Business Administration loans, and other sources of recovery assistance; and proprietor's assessments of business recovery and well-being at the time the surveys were conducted.

Additional Reading

Alesch, Daniel J., James N. Holly, Elliott Mittler, and Robert Nagy. 2001. *Organizations at Risk: What Happens when Small Businesses and Not-for-Profits Encounter Natural Disasters*. First Year Technical Report of the Small Organizations Natural Hazards Project, Center for Organizational Studies, University of Wisconsin–Green Bay. Fairfax, VA: Public Entity Risk Institute. Available at http://www.riskinstitute.org/ptrdocs/OrganizationsatRisk.pdf.

Chang, Stephanie. 1997. "Reconstruction and Recovery in Urban Earthquake Disasters." Proceedings of the 5th US/Japan Workshop on Urban Earthquake Hazard Reduction. Oakland, CA: Earthquake Engineering Research Institute.

Department of Commerce. 2000. *Out of Harm's Way*. (Pamphlet.) Washington, D.C.: U.S. Department of Commerce, Economic Development Administration.

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