ATTACHMENT 3

REVIEW OF SELECTED LITERATURE RELATED TO POST-DISASTER REDEVELOPMENT

Introduction

This document is an informal review of the literature on lessons learned from disaster recovery and redevelopment and recommendations for disaster recovery planning both before and after a disaster occurs. An extensive search of major academic databases and libraries revealed many of the sources included and others were found by reviewing the bibliographies of known references on the topic. The literature review is presented as an annotated bibliography, in which the sources are documented and the referenced work is briefly summarized. The breadth of the literature on the subject of disaster recovery and redevelopment is quite large covering a wide variety of topics for many different geographic areas. Sources for this document were chosen based on their focus on disaster recovery and/or planning in the United States and their applicability to disaster situations or hazards faced by Pinellas County. References were specifically sought for topics such as business recovery, housing, and equity after disasters.

As in most disciplines, the body of literature on the subject of disaster recovery and redevelopment is ever-growing, as academic research continues in this field and lessons from the most recent disasters are learned. This literature review is a document that reflects the most up-to-date information on disaster recovery and redevelopment at the time of publication. However, a periodic review of academic journals and books on the subject is necessary so that the state of the art of the field is reflected in the document. This literature review builds upon the 2007 literature review produced by CSA International, Inc. for the State of Florida Post-Disaster Redevelopment Planning Initiative. Much of that work is presented here, along with additional sources of information that were found to be relevant or that were published after the 2007 document was completed. As more local governments in Florida and elsewhere develop their own disaster recovery and redevelopment plans, this literature review serves as a starting point for identifying and understanding the research that has previously been done on the subject.

Summary of Key Themes and Common Conclusions

Recovery involves decision making that chooses between the early return to normalcy, reduction of future vulnerability, and opportunities to improve the community. The rate of disaster recovery is affected by the magnitude of the damage, resources for recovery, prevailing disaster trends, quality of leadership, and quality of planning. Information dissemination and citizen and stakeholder participation key ingredients of successful recovery and planning for recovery. Previously existing plans can improve the speed and quality of post-disaster decisions. A window of opportunity exists after a disaster where hazard mitigation and community betterment

can be accomplished. Obstacles to taking advantage of these opportunities include the preexisting ideas of what the community looks like in the minds of the citizens and property boundaries that cannot be erased.

Different phases of disaster recovery typically are described as emergency/response period, short-term recovery, and long-term recovery/reconstruction. The phases overlap and are dynamic. Recovery planning must be flexible to respond to differences in disaster impacts and resulting recovery phases and processes.

Recovery is the responsibility of the local government and is most effective when outside resources are directed by local knowledge. Planning for financing recovery is very important. Staff with knowledge of the federal, state, and private resources available are needed at the local level.

An interdisciplinary, representative organization with clear authority and responsibilities needs to be created prior to the disaster. Most agree it should also be involved in the planning process and that it should be separate from the emergency response organization.

The recovery plan should be exercised and updated on a regular basis. Planning for post-disaster recovery is an ongoing process.

Post-disaster recovery plans should be integrated with the comprehensive plan. Emergency managers and local planners must work together.

Recovery plans should promote sustainable development including economic development, environmental preservation, equity, and building disaster resilience. Inequalities in disaster recovery need to be addressed. Those with lower socioeconomic status and minorities have the longest and hardest recovery. Also small businesses are disproportionately affected.

Short-term recovery decisions can have long-term implications, i.e. temporary housing, temporary business locations, debris sites, and decisions about restoration of infrastructure and permitting of private structure repair and rebuilding.

Temporary building moratoriums and priorities for redevelopment are important items to have in place prior to a disaster. It is also helpful to have pre-identified temporary housing and debris sites as well as less hazardous areas that are encouraged for redevelopment.

Major tools for including mitigation in redevelopment include property acquisition, limiting densities, and transfer of development rights. For coastal communities, the most valuable real estate is also the most hazardous.

Economic recovery is most likely the most important recovery issue. Business interruption is much more damaging to the economy than the actual physical damages to business structures. Small Business Administration loans are not adequate or fast enough to help most businesses.

Annotated Bibliography

Alesch, Daniel J., Lucy A. Arendt, and James N. Holly. 2009. *Managing for Long-Term Community Recovery in the Aftermath of Disaster*. Fairfax, VA: Public Entity Risk Institute.

This information in this book is presented in four parts. The first part "sets the stage" by describing different types of disasters and by gives a general overview of the different ways that disasters can impact a community. The second part focuses on the post-disaster experience in the community. This section describes the demographics change, the issues involved with reconstruction of homes and business, the social and psychological consequences of the event, and how the local economy often unravels after a disaster. The third part describes the effects of disasters on local governments. The fourth part is a "lessons learned" section that outlines a variety of post-disaster recovery strategies.

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.

This research study attempts to examine the factors that influence the success or failure of a business following a natural disaster. From examining small business activity, the authors came to the conclusion that the outcomes following a disaster event are influenced by many different factors that are not easily distinguishable. From this article it is made evident that the following actions could be taken by a local government to ensure the success of business following a disaster:

1. Encourage pre-disaster recovery planning including financial resource reserves.
2. Reach out to offer assistance to local businesses recovering from a disaster
3. Offer assistance to citizens of the communities to ensure that they do not move away—after all they are the customers of local businesses.
4. Help communities relocate to other areas that may be more suitable for their business, given the new circumstances.
5. Launch a business awareness campaign after a disaster, in order to ensure that business owners are aware of their importance to the community.
6. Appoint a business liaison (possibly from the Chamber of Commerce) to spearhead response efforts to local business owners following a disaster.

<u>Major Findings</u>

- Traditional precautions do not help businesses survive. Traditional structural precautions are necessary to reduce losses to life and property, but not sufficient to help businesses survive. (p. 8)
- Most businesses do not fail immediately after the event. Only the weakest firms fail right after the disaster. Most firms that ultimately fail do so only after a desperate struggle to recover. We found, too, that Small Business Administration loans are not an adequate answer. (p. 8)
- Most losses do not occur during and right after the event. Business losses go far beyond initial damage to the structure, equipment, and inventory. They include business interruption, lost income to employers and employees, and lost assets in the form of business equity. (p. 9)
- Most owners had few ideas about how they ought to try to recover. (p. 9)

- There are strong indications that the variables that set apart those that survive from those that do not can be isolated. (p. 9)
- Based on our work in Northridge, we think that (1) other things being equal, businesses whose customers were not affected adversely by the earthquake had a much better chance of survival than those whose customers had significant losses, (2) businesses with more than one location were more likely to survive than those with a single location, (3) businesses that relied on consumers' discretionary income for their sales were more likely to fail than those that provided more essential goods and services, and (4) businesses whose owners were able to adjust to changes in consumer demand were much more likely to survive than those whose owners simply pursued their pre-earthquake activities in the same old way. (p. 9)
- Natural hazard events appear to exacerbate existing trends in urban areas, hastening demographic changes and adding additional pressure for land use succession. Government planners seem slow to recognize those impacts and to act accordingly. (p. 24)
- It is extremely difficult to separate effects in the community from disaster effects on businesses. Some of the effects are tied into the set of variables we call "effects on customers," but the effects on the community go well beyond that and also have an effect on business recovery. (p. 24)
- We have coined a term, "management mitigation," to describe management techniques used to reduce both exposure and vulnerability through smart business practices. These techniques extend to include diversifying the organization's customer base, diversifying the location of the organization's inventory, protecting organizational electronic and hard copy data, and having multiple business outlets. Multiple business outlets include having several geographic locations or doing business by catalog or through e-commerce. (p. 25)
- We saw changes in communities as a recurring theme across states and across disasters as we interviewed those who run small organizations and others knowledgeable about the communities. There were demographic changes, with some groups moving out from the affected area and other groups moving in. Population density was sometimes redistributed within a jurisdiction, depending on buyout programs or massive destruction of residences. The demographic changes contributed to changed locational relationships. These were exacerbated by post-event private and public choices about what and where to rebuild. (p. 73)
- In the communities visited, bankers, Chambers of Commerce staffs, town and city officials, business owners, and many others assumed leadership roles, not always by choice, to help coordinate and direct various aspects of the recovery process. (p. 84)
- Occasionally we found some level of cooperation between the public and private sectors, but it was short lived and usually associated with a specific (often financial) project or program. (p. 84)
- In some communities, U. S. Department of Housing and Urban Development block grants were used to help businesses. Sometimes the Community Development Block Grants provided money for revolving loan funds to small businesses. Other times those monies were used to pay the interest on loans. Sometimes, loans were forgiven over a time period provided the business owner kept the business open and in the municipality for some specified time period. The loans were typically small. (p. 85)
- In a few communities, such as Grand Forks and Los Alamos, special legislation introduced by the State's Congressional delegation got passed, providing massive amounts of financial assistance, assistance far in excess of what would have been provided under any existing Federal or State disaster assistance legislation. In those cases, loans were much larger.
- The U. S. Small Business Administration gives disaster loans to small businesses that qualify. Qualifying businesses must have reasonably good credit, but, if the business has assets and credit that exceed a threshold, the business is sent off to get a commercial loan. Loans are typically based on the pre-event

business and tax returns of the firm. Alas, post-event business is seldom the same as pre-event business, often because of market changes as discussed above, and the loan, even at below-market interest rates, sometimes becomes an albatross around the owner's neck. Moreover, the SBA requires extensive collateralization of its loans. Some small business people are willing to risk their business on a loan, but most are reluctant to wager the family home and all of their other assets on an uncertain future. (p. 85-86)

Alesch, Daniel J. and James N. Holly. 2004. *Surviving Extreme Events: A Guide to Help Small Businesses and Not-for-Profit Organizations Prepare for and Recover from Extreme Events*. Fairfax, VA: Public Entity Risk Institute.

This publication covers top-to-bottom actions for small businesses to take before, during, and after a disaster event to aid the business with both short-term and long-term recovery. The guide describes why businesses fail post-disaster, regardless of whether or not they were physically damaged. A "survival strategy" is outlined to help the small business owner with the decision-making process during post-disaster redevelopment.

Baade, Robert A., Robert Baumann, and Victor Matheson (2007). Estimating the economic impact of natural and social disasters, with an application to Hurricane Katrina. *Urban Studies.* 44(11), 2061-2076.

The author identifies the similarities between Hurricane Katrina and both Hurricane Andrew and the Rodney King riots in Los Angeles. The case is made that there are relationships between Katrina and the other two events; Hurricane Andrew being a natural disaster, the Rodney King riots being a social disaster, and Katrina being a hybrid of the two events by combining elements of both natural and social disasters. The paper looks at how the King riots long-term effect on the Los Angeles economy and Andrew's short-term positive impact on the Miami economy may relate to the economic and overall recovery of post-Katrina New Orleans.

Berke, Philip R. and Timothy Beatley. 1997. *After the Hurricane: Linking Recovery to Sustainable Development in the Caribbean*. Baltimore, Maryland: The Johns Hopkins University Press.

Authors study disaster recovery from Hurricanes Gilbert and Hugo in four Caribbean island countries. While Florida's building stock and planning progress is more advanced than these countries during the late 1980s, the authors have several key insights that are also applicable to Florida disaster recovery.

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- Their data do not support the Haas, Kates, and Bowden four stage model of recovery. While useful in understanding the dynamics, the stages "are not uniformly sequential and orderly for an entire impact area."
- Recovery time period is different depending on the population group. Raises questions of equity and fairness
- Top-down approach is unsuccessful in delivering aid- does not match local needs, build local capacity, or address long-term needs. Concentration of power and knowledge makes the recovery process more vulnerable to political manipulation.
- Mitigation was ignored in rush to return to predisaster normalcy.

- More linkages between disaster recovery and reconstruction and predisaster mitigation with long-term sustainable development needed.
- All of the Caribbean countries had prepared disaster plans but the plans and implementation framework were ineffective. Focused heavily on response and preparedness without attention to recovery and reconstruction; "paper" plans that were not consulted during decision making-public officials were unaware of the content of the plans; plans viewed as end products rather than dynamic and ongoing process.
- Recommendations for future stress sustainable development framework.

Berke, P. R., & Campanella, T. J. (2006). Planning for postdisaster resiliency. *The Annals of the American Academy of Political and Social Science, 604*, 192-207.

This article emphasizes the need for building more resilient communities during disaster recovery. The authors think that better planning for recovery that includes citizen participation can lead to more resiliency. The following are major points relative to post-disaster redevelopment planning at the local level:

- Achieving resiliency in a disaster context means the ability to survive future natural disasters with minimum loss of life and property, as well as the ability to create a greater sense of place among residents; a stronger, more diverse economy; and a more economically integrated and diverse population (Vale and Campanella 2005). Resiliency also applies to the process of recovery planning in which all affected stakeholders— rather than just a powerful few—have a voice in how their community is to be rebuilt. (pg. 192-193)
- A community should be ready with solutions when a window opens while the importance and priority that local officials assign to hazard threats are temporarily elevated.To take advantage of an open window, a community should have a recovery plan in place long before a disaster strikes.
- A recovery plan is a policy document that guides short-range emergency and rehabilitation actions (temporary housing, damage assessment, debris removal, restoration of utilities, reoccupancy permitting, reconstruction priorities) and long-range redevelopment decisions (building moratoria, replanning of stricken areas, relocation of housing to safer sites). (pg. 193)
- The core purposes of a disaster recovery plan are to (1) offer a vision of the future after a disaster; (2) provide a direction-setting framework (strong fact base, goals, and policies) to achieve the vision; (3) inject long-range resiliency considerations into short-term recovery actions that promote redevelopment that is socially just, economically viable, environmentally compatible, and less vulnerable to hazards, and (4) represent a "big picture" of the community that is related to broader regional, state, and national disaster response and reconstruction policies. To stay relevant, the recovery plan must build in flexibility and be adaptable to the dynamic and changing conditions presented by the recovery process. (pg. 194)
- Local governments have used two approaches in preparing a predisaster recovery plan. Stand-alone plan or element integrated into a broader comprehensive plan for an entire municipality, county, or region. The most effective choice is likely to be preparation of a stand-alone recovery plan in collaboration with preparation of a comprehensive plan, so that their databases, policies, and procedures are compatible. (pg. 194)

- Research findings reveal that prospects for well-conceived local mitigation plans and successful implementation increase with broader participation and support of stakeholders who are affected by the outcomes of plans. Early and ongoing involvement throughout plan making and implementation are important factors in influencing better outcomes. By involving and consulting residents in all phases of planning, the predisaster recovery planning process helps create a knowledgeable constituency that is more likely to support redevelopment policies and programs that take effect once a disaster strikes.
- Piggybacking mitigation onto more established and higher priority land use issues can make it more successful
- Examples of land use and development techniques for post-disaster recovery
  - high-hazard sending zones where development is to be relocated to low-hazard receiving zones,
  - risk avoidance opportunities linked with other local land use concerns such as greenway or beachfront acquisitions that overlap hazard zone areas, and
  - stream buffer setbacks that could limit development for water quality purposes and at the same time extend development limits beyond the one-hundred-year floodplain (note that significant damages consistently occur outside the one-hundred-year flood boundary).
  - provisions that guide redevelopment to the least hazardous parts of building sites and modify construction and site design practices
- Local governments need to be more involved in financing recovery
  - Local governments should purchase infrastructure insurance
  - Special assessment zones that would levy property taxes in accordance with degree of risk could help to fund insurance of infrastructure and other recovery initiatives.

Burby, Raymond J., et al. 1988. *Cities Under Water: A Comparative Evaluation of Ten Cities Efforts to Manage Floodplain Land Use.* Boulder, Colorado: Institute of Behavioral Science, University of Colorado.

This publication is a comparative study of floodplain land use management practices in 10 cities around the United States. The authors surveyed decision makers, landowners, builder and developers, and consumers in an effort to gain insights regarding their decisions to build or not build in floodplain areas. Surveys that were used to collect information are contained in the appendix. The study included communities that experienced slow-rise riverine flooding and those that experienced both slow-rise and flash flooding.

Important Findings:

1) Immediately following a flood there is a window of opportunity in which government programs may induce households and businesses to take additional steps to protect their property.
2) The presence of floodplain land use management programs did discourage the purchase of vacant floodplain property for future personal residence, and did reduce the proportion of owners who held vacant land in the floodplain for speculative purposes.
3) Public policy did not consistently decrease the attractiveness of the floodplain for builders and developers or for consumers.

4) Local public policy is ineffective in diverting development from the floodplain in two circumstances: when developable land outside the floodplain is scarce, and when population growth and the demand for building sites are high.
5) Communities' investment in flood control works also tends to stimulate floodplain development leading to heightened property value expectations on the part of landowners, and to increased purchase of floodplain sites for speculation and future subdivisions.
6) The 10 communities used three strategies – prohibit development, limit development, and limit all but commercial development—to counteract forces leading to more intensive use of the floodplain.
7) None of the communities studied required consumers to bear the full financial burden created by their decision to live or do business in the floodplain.
8) All 10 cities studied had adopted regulations that exceeded the minimum federal standards for floodplain management. This had a strong positive effect on builders' and developers adoption of measures to protect property from flooding. In part because required hazard mitigation measures added only marginally to the costs of construction, private sector compliance with regulations was very high.

Implications:
If land use management programs are to be more effective in diverting development from the floodplains, communities must take aggressive steps to redirect development before it ever occurs. To do that policy must:

1) inform and persuade the owners of vacant land in the floodplain of the serious nature of the flood hazard and its potential to do damage;
2) persuade participants in the land market that the risk of flooding should deflate the development potential of floodplain property; and
3) prove to landowners and developers that development which does take place in the floodplain will be more expensive, less marketable, and less attractive to consumers than flood-free building sites, and therefore, will not appreciate in value as rapidly in response to increasing population and development potential.

Authors found that builders and developers were more open to stricter floodplain requirements than consumers; therefore, more attention should focus on loss prevention to be realized by builders and developers as a way to reduce potential property loss.

Techniques:

1) Limit densities in floodplains, not by down zoning but public purchase of property for open space and other uses not susceptible to damage from flooding.
2) Allow landowners to transfer development rights from the floodplain to flood-free sites. This technique is most feasible where floodplains are narrow as compared the floodplains that are broad. The transfer can be accomplished on a single parcel or within a single subdivision that contains portions within and outside the floodplain.
3) Increase the supply of flood-free sites available for development.
    a. Can be achieved in several ways – a community annexes vacant land on the periphery of the community and extend urban services to the property;
    b. Revise zoning regulations to allow higher density in flood-free locations within the existing community boundaries;
    c. Invest in flood control works that constrict flood damages. *(this method was the most common one of the jurisdictions studied).*

4) Require private property owners who either live and/or work in the floodplain pay the cost of living there. This could involve one or all of the following:
    a. Purchase of flood insurance (*authors mention that requirement is not strictly enforced*);
    b. Floodplain occupants benefiting from public investments to reduce flood threats should pay their fair share of the cost of the improvement;
    c. Special fees could be instituted to recover added costs of administering floodplain building regulations;
    d. Extra user changes could be enacted to recover added maintenance costs of infrastructure serving the floodplain property.
5) Encourage households and businesses with free technical assistance and low-cost loans in implementing flood loss prevention measures.

Campanella, T. J. (2006). Urban resilience and the recovery of New Orleans. *Journal of the American Planning Association, 72*(2), 141-146.

This article looks at New Orleans' recovery in terms of urban resilience. The author argues that urban resilience is "largely a function of resilient and resourceful citizens."

Why the city is rebuilt:

- Fee-simple ownership has created a virtually indestructible organization of space – property lines can be recreated if the legal documents still exist.
- Insurance industry encourages speedy reconstruction of what existed before.
- Networks of urban infrastructure typically are not wiped out
- Geographic and economic advatages to city's initial development usually survive

Recovery is more than rebuilding:

- Familial, social, and religious networks of survivors and evacuees must be reconnected
- Recovery is difficult if reconstruction is imposed from outside without local approval
- Grassroots mobilization necessary but difficult with evacuees dispersed

Godschalk quote: Hurricane Katrina "hammered home a simple but irrefutable lesson: Acting beforehand to mitigate natural hazard impacts is much more effective than picking up the pieces afterwards."

"A disaster puts the legitimacy and authority of a government on trial, exposing shortcomings of political leadership and in some cases even revealing startling abuses of authority." (pg. 143)

Comerio, Mary C. (1998). *Disaster Hits Home: New Policy for Urban Housing Recovery.* University of California Press, Berkeley. 300 pages.

This book focuses on damage to housing from disasters (mainly hurricanes and earthquakes) and how to recover from those losses. The author makes many recommendations for federal policy change in recovery assistance and concludes that its role should remain in financing emergency relief operations, the recovery of public infrastructure, and assisting low-income homeowners and renters while leaving private sector

recovery financing to the private insurance market. The author also has many insights on determining when there will be a housing crisis and the importance of housing financing in the ability of a community to recover that are useful to local governments preparing post-disaster plans. The following are some key points:

- "a housing disaster results when there is no reasonable alternative housing available for victims, and/or there is no capacity to finance within a reasonable time frame the repair or reconstruction of units lost." (pg. 161)
- Five criteria to successful disaster recovery through housing: (pg. 26)
  1. Losses must be manageable; that is, the volume of damage should be limited by predisaster hazard mitigation.
  2. Rebuilding and/or repairs must take place within two years.
  3. Financing must be available for all economic sectors and housing types.
  4. Public or private program funds must not exceed the cost of damage.
  5. Public and private program funds must complement, rather than substitute for or duplicate, each other.
- If the following 5 characteristics of damaged housing stock "can be assembled quickly from census and housing-market data after a disaster, local governments can assess the likelihood that short-term sheltering needs will reach crisis proportions. At the same time, an assessment of the extent of damage overlaid with market and social conditions will indicate the extent to which private recovery financing, in terms of insurance and loans, may be available, thus indicating the degree to which outside assistance may be necessary to avoid a recovery crisis." (pg. 169)
  - Composition of the Housing Stock – Perhaps the single most critical issue in determining the recoverability of damaged housing is whether the housing lost or damaged is in single- or multifamily structures. Single-family housing is most typically owner occupied and most typically insured to some degree. Lack of specific programs for recovery for owners of multifamily structures opens the door to a serious urban housing crisis in the event of a disaster. When the number of units lost represents a majority of housing types in a limited price range, then temporary housing will be a critical issue even if the number of units lost is small.
  - The Age and Physical Condition of the Housing Stock – The age of buildings is commonly used by engineers and risk analysts as an indicator of vulnerability. Because older residential structures were built with less modern building codes, they are presumed to be more susceptible to damage, especially if not maintained.
  - The Housing Market and Vacancy Rates – No matter what the condition of housing in a particular area, the market for housing will drive values and vacancy rates. Disasters do not completely change predisaster economic conditions, instead they simply magnify trends or conditions in place before disaster struck.
  - Rebuilding cost/Debt Ratio – Ultimately, whatever the general market conditions, rebuilding decisions are made on a building-by-building basis by individual owners. Owners look at damage in terms of repair/rebuilding costs relative to the existing debt on the home. While these are financial conditions specific to individual buildings, the aggregate impact on overall reconstruction can be gauged based on the estimates of damage to the housing stock, in combination with local market and housing conditions.

- Social and Economic Status of Victims – Who was affected by the disaster is often as important to recovery potential as the value of the building damage. A home-owner or renter population with significant social and economic ties to the locale will be more aggressive advocates of repair. Low-income homeowners and renters may need assistance to rebuild or relocate within the area. Elderly and young renters may move rather than wait for repairs.

Department of Homeland Security and Federal Emergency Management Agency. (2005). *Long-term recovery planning process: A self-help guide*. Washington: The Federal Emergency Management Agency.

This guide's stated purpose is to provide communities with a framework for long-term community recovery used by FEMA for several years. Long-term Community Recovery (LTCR) plans have been developed for many counties in Florida after recent hurricanes and for the Gulf Coast communities impacted by Hurricane Katrina as part of the ESF 14 operations. The successfulness of these planning efforts have been debated by many experts in disaster recovery, however, this guide does clearly lay out some key planning basic functions that should be done after a disaster to bring about community participation and coordination among federal, state, and local officials. It also references the *Holistic Disaster Recovery* guide included in this literature review and uses its 10 step process as the basis of the planning framework.

"Long-term" refers to the need to re-establish a healthy, functioning community that will sustain itself over time. Examples of long-term community recovery actions include:

- Providing permanent disaster-resistant housing units to replace those destroyed,
- Initiating a low-interest facade loan program for the portion of the downtown area that sustained damage from the disaster (and thus encouraging other improvements that revitalize downtown),
- Initiating a buy-out of flood-prone properties and designating them community open space, and
- Widening a bridge or roadway that improves both residents' access to employment areas and improves a hurricane evacuation route

Removing debris and restoring power are recovery activities but are considered immediate or short-term recovery actions. (pg. 4)

LTCR is the process of establishing a community-based, post-disaster vision and identifying projects and project funding strategies best suited to achieve that vision, and employing a mechanism to implement those projects. (pg. 5)

The LTCR plan should inspire- think big. This motivates the private sector to invest. [Much criticism of the program actually comes from this suggestion and other research points out that realistic plans are more successful after a disaster.]

Your LTCR plan should be viewed as a 'living' document that adjusts and changes to specific needs as the community works through the recovery process. The LTCR plan is an action-oriented planning tool to guide the implementation of recovery projects identified by the community. The plan is not an ordinance, law, or comprehensive/master plan, but more like a strategic blueprint for community recovery and should be used as a decisionmaking tool for community resources, funding, and priorities. (pg. 79)

Key principles of long-term community recovery are that its:

- Community driven
- Based on public involvement

- Locally controlled
- Project-oriented
- Incorporates mitigation approaches and techniques
- A partnership among local agencies, jurisdictions, officials, and the state and federal government
- Focused on projects that most contribute to community recovery from the disaster

Existing plans, policies, and studies must be reviewed and considered as part of the LTCR process. Including:

- comprehensive plan
- local mitigation strategy
- Comprehensive Economic Development Strategy
- Transportation Plans- The Transportation Improvement Program (TIP) is especially important to review and coordinate.

Questions that should be asked to determine needs after a disaster:

- What extent/type of damages did we sustain and to what areas?
- What are the potential long-term impacts of these damages?
- What are the housing needs in the community? Quantity? Quality/Type? Location? Obstacles?
- What are the community infrastructure needs or environmental issues that need to be addressed? Are these existing? Growth plans?
- What are the community's economic needs as a result of the disaster? New economic opportunities? Bolstering current opportunities?

An LTCR team should be established with broad public and private sector representation that can function as a sounding board for the LTCR program leader and provide routine input into the overall recovery process. The team should not be too large. A list of organizations to consider is provided. (pg. 15)

Components of an LTCR program: (pg. 16)

- Securing outside support
- Establishing public information and involvement program
- Achieving consensus
- Identifying opportunities
- Articulating a vision and setting goals
- Identifying, evaluating and prioritizing projects
- Developing a recovery plan
- Choosing project champions
- Developing a funding strategy
- Implementing the plan
- Updating the plan

Generally, the LTCR planning activities should be initiated 4 to 8 weeks after a disaster and be completed within 6 to 12 weeks depending on the severity of the damages and the resources available. A short time frame is important in order to capture the cooperative community spirit that usually exists immediately following a disaster and to take advantage of the attention (and funding opportunities) provided by federal and state agencies.

The LTCR leadership is critical to the overall process. The local government must initiate the LTCR program, select a leader and support the program.

Involving various organizations and agencies in the LTCR program will eventually help to establish project "ownership" at the agency level. Establishing ownership can facilitate support during the implementation process when funds or technical assistance may be needed. Support from these organizations and agencies should not be limited to funding but should include ideas, insights, time and energy.

- Consider scheduling a "Community Recovery and Resource Day" where all local, regional, state, and federal organizations and agencies (public and private) are invited. Use this event as an opportunity to present the community needs, issues, draft plans and projects and request their input, assistance, and especially partnership in making the LTCR program successful. Items to consider in developing a workshop are listed on page 22.

Public information campaign

- Useful to have one person carry out the campaign
- Make local media partners in the process
- Use multiple communication mediums
- Reach out to minority groups

Hazard Mitigation Section 404 and 406 funding opportunities should be considered during the LTCR effort. Also alternate projects or improved projects under Public Assistance funding can include hazard mitigation or building a new public facility.

Prioritizing recovery projects. Typically, a High Recovery Value project will:

- Fill a post-disaster community need
- Provide leveraging and create linkages for other projects and funding
- Be related to the physical damage from the disaster
- Encourage private investment
- Have strong community support
- Have access to the resources needed to carry out the project
- Be realistic in its outcome - is achievable
- Avert future losses
- Use resources efficiently
- Have community-wide impact

Keys to continued success include 1) regular project completions, 2) maintaining a fluid plan, 3) including portions of the plan in capital improvement projects of the community or in community comprehensive plans. Hardee County created a project manager position within the planning department to coordinate local effort with other agencies on economic recovery.

Florida Department of Community Affairs. 2005. *Protecting Florida's Communities - Land Use Planning Strategies and Best Development Practices for Minimizing Vulnerability to Flooding and Coastal Storms.* Tallahassee, Florida.

The central theme of this "best practices" guide is the need to better integrate mitigation concepts into local land use decisions as a key component in the effort to make Florida's communities more disaster resistant and

resilient. Florida communities are ahead of many others in developing plans, policies and strategies to mitigate natural hazard risk, but because little effort is made to integrate hazard related data from one plan to the next, the information often fails to make its way into local land use decisions. The focus of *Protecting Florida's Communities* is to review the hazards analysis, policies and practices available to reduce a community's hazard related risk and a process for integrating this information into the comprehensive land use decision process. The plans analyzed are the Comprehensive Plan, the Coastal Element, the Comprehensive Emergency Management Plan, the Local Mitigation Strategy, and the Post-Disaster Redevelopment Plan.

The authors stress that the plan with the potential to integrate mitigation into these decisions is the Post-Disaster Redevelopment Plan (PDRP), which they propose be developed as a single, freestanding reference to guide post-disaster short and long-term recovery actions. Although development of a PDRP is a requirement for coastal communities, very little published guidance is available and very few plans have been developed. Therefore, a considerable portion of the book is devoted to guidance in developing a successful PDRP.

Initiating the Process:

Because communication between the various parties and stakeholders is vital, the first action step in developing a PDRP is the formation of an oversight committee with the authority to develop and implement the plan. As a requirement of the Comprehensive Plan (in the Coastal Element) with an explicit mitigation function, the PDRP is designed to bridge the gap between land use planning and emergency management planning. Developing the PDRP as the single recovery reference eliminates the need to sift through multiple plans, and although the PDRP would not duplicate these other plans, it would of necessity overlap portions such as Recovery Annex of the Comprehensive Emergency Management Plan (CEMP).

Pre-disaster mitigation actions:

Although not designed to be a guide to pre-disaster mitigation, the planning process requires a re-evaluation of elements of other plans critical to a successful short and long-term recovery. This process will inevitably identify both new and remedial actions, which must be carried out in the pre-disaster (blue sky) period.

The Short-Term Recovery portion of the PDRP would contain:

- directly or by reference, the portions of the Recovery Annex dealing with temporary housing at least as to types permissible and site location, Preliminary Damage Assessment (PDA's), debris management, and priorities for restoration of utility services and coordination with private utilities.
- policies regarding: reconstruction of public facilities, demolition of structures posing an imminent threat, re-occupancy of damaged habitable structures, emergency repairs, repair and reconstruction of non-conforming structures, demolition, repair and reconstruction of historic structures; and issuance of development and building permits, particularly policies regarding moratoria on immediate repair. The Plan would not deal with activities such as evacuation and clearance times as they are Response issues.

The Long-Term Recovery portion of the PDRP would contain:

- A reassessment of the community's hazard vulnerability. The authors provide an extensive inventory of information sources such as the CEMP, the LMS and the Comprehensive Plan as well as computer

models such as TAOS, SLOSH, HAZUS, publications from FEMA and NOAA and data bases for the local property appraiser and the Florida Department of Revenue.

- A reassessment of the adequacy of evacuation and emergency sheltering infrastructure and facilities. This reassessment uses the above mentioned vulnerability analysis, an analysis found in the Comprehensive Plan on measures to maintain or reduce evacuation times. Sources are provided for data on current capacity and evacuation routes as well as an analysis model developed by the Division of Emergency Management. The publication also provides descriptions with examples of the use of standard planning and development tools (zoning, acquisition, TDRs, etc.) to reduce the demand for evacuation and shelter by guiding development and redevelopment in hazardous areas. Finally, it contains a discussion of financial mechanisms (exactions, impact fees, bonds, special assessments, etc.), which could be used to increase evacuation and sheltering capacity through capital improvements.
- A reassessment of the Future Land-Use Element, the Florida Building Code and the land-development regulations. This reassessment would be based on new information on exposure, vulnerability, evacuation, and shelter demand gained in the reassessments mentioned above.
- Policies governing redevelopment of areas that have experienced substantial damage in order to reduce their vulnerability and in some cases, to achieve other community redevelopment objectives. The policies should include areas with repetitively damaged property and infrastructure, and areas where substantial damage was not anticipated. Mitigation opportunities include compliance with the building code and land development regulations; strategies to make the environment less hazardous; redeveloping the area for a different use; and finally, taking advantage of the level of damage to meet other community redevelopment goals.

The authors stress that many if not all of these policies and procedures are contained in other plans and should be incorporated into the PDRP. They then provide an inventory of relevant sources including the future land use and capital improvements elements of the Comprehensive Plan, the local building and development codes, and the Local Mitigation Strategy.

The final portion of the book is devoted to a series of appendices containing model plans, ordinances and related support material.

Florida Department of Community Affairs. n.d. *Building Disaster Resistant Communities: Florida Showcase Community Project*. Tallahassee, FL.

These documents examine the efforts taken approximately 10 years ago regarding hazard mitigation and post-disaster recovery planning. Information on sharing successes has been included and could help when marketing the Post-Disaster Redevelopment Planning Initiative to the state. Understanding the foundation of these programs will help create solid post-disaster redevelopment planning guidelines.

Building Community Partnerships (p. 6)

- The LMS working group was instrumental in forging a community's mitigation strategy and represents the building blocks of community-wide partnerships.
- Approach the local Chamber of Commerce to form disaster prevention business alliance. While local government staff time should be dedicated to developing this group, it should ultimately be directed by a local business person.
- Established community leaders can lend credibility to disaster prevention efforts and serve as a conduit to forming additional partnerships

- Do not be reluctant to recognize the contributions of non-government partners—it will help encourage more private sector participation.

Sharing Successes (p. 14)

- Appoint a chairperson to head up the outreach effort—perhaps the public relations manager for your city or county, or a public relations person from one of your partnering companies.
- Develop a communications plan that uses mass media, special events, spokespersons and educational outreach.
- Have a message.
- Develop a media list that includes newspapers, city and regional magazines, trade and business publications, state bureaus of national wire services (Associated Press, Reuters, and United Press International), local radio and TV stations, local cable stations, public broadcasting stations, and public information officers of military bases, if applicable.
- Identify various spokespersons who can talk about your program from different points of view. Offer them as experts for media interviews and make them available to civic groups.
- Hold regular community meetings where the public can ask questions and raise issues.
- Partner with local newspaper, radio and TV stations to ensure consistent coverage of your mitigation programs while involving a valuable business partner who is highly visible throughout the community.

Community Vulnerability Checklist (p.15)

These suggestions can be used to help a community map operations:

- What are the largest and most critical employers (including government and education)?
- How do employees reach their workplace?
- What utilities and modes of transportation are needed in order to keep business operating?
- What is the impact on the local economy if businesses are not fully operational?
- What is the likelihood of permanent business closings and increases in unemployment?
- What are the specific hazards to employees at specific facilities during a disaster?
- Are schools the primary form of temporary housing?
- What is the impact of closed schools to the education funding and school year?
- How many people would each health care facility be able to accommodate?
- How important are rail, air and port functioning to response and recovery after disasters?
- What communications channels are in place to relay important information in times of disaster?

Florida Department of Environmental Protection. 1995. *Pre-Storm Planning for Post-Storm Redevelopment: Policies and Options for Florida's Beachfront Areas, Final Report.* Bureau of Beaches and Coastal Systems: Tallahassee, Florida.

This study articulates state policy regarding the nature and extent of post-storm redevelopment of beachfront areas. It provides a policy basis for future decisions regarding preservation and protection of beach and dune systems in a post-disaster environment. This document was also designed to assist local governments in anticipating appropriate uses and densities for beachfront redevelopment. The policy addresses four areas of concern: Beach and Dune System Protection, Hazard Mitigation, Economic Development, and Intergovernmental Coordination.

The document provides the Department of Environmental Protection a methodology for defining boundaries of beachfront segments and an evaluation process to assess beach-dune and hazardous conditions of each

segment. It also includes possible post-storm management responses for beachfront areas. The strategies selected are dependent on the level of damage – areas with minor erosion to those exhibiting critically eroded areas.

A Workshop was held to evaluate and recommend planning tools and funding sources that could be used to implement a beachfront post-disaster redevelopment strategy. They are described below.

Implementation Mechanisms		Workshop Consensus
1	Exactions/Permit Conditions	Not a viable strategy
2	Reduction of Land Use Intensity	Viable, under certain conditions • Must be initiated at the local level • Requires close coordination • Requires creative and flexible planning
3	Amortization of Non-Conforming Uses	Questionable for state; however, could be used by local government.
4	Replatting or Land Readjustment	Viable , under certain conditions • Need a broker or "middleman" • Requires flexibility and political will
5	Transfer of Development Rights (TDR)	Viable under certain conditions • Requires third party to administer • Receiver sites must be clearly identified
6	Mitigation Banking/Land Banking	Considered viable alternative to TDR
7	Acquisition by the State	Viable, under certain conditions • A change in State Priorities for Land Acquisition • Need to balance high cost of coastal property with other public acquisition priorities • Increase involvement of other agencies
8	Conservation and Recreation Lands Program	Not a viable tool for acquiring small coastal parcels
9	Florida Communities Trust	Viable
10	Acquisition by a Local Government	Viable - there are a number of active programs statewide
11	Acquisition by a Land Trust	Viable, provides funding mechanism especially for desired properties under development pressure
12	Fee Simple Land Acquisition	Viable, under certain circumstances • Relatively high value of beachfront property makes this strategy cost-prohibitive in most cases. • Currently technique is FEMA's preferred way to acquire lands for post-disaster mitigation
13	Less than Fee Simple Acquisition	Viable Unlike Fee Simple purchase, only the necessary level of interest in land is purchased. The remaining property rights are retained by the fee title holder.
14	Conservation Easements	Viable
15	Purchase of Development Rights	Viable – Seems like a logical approach to pre-storm planning

Implementation Mechanisms		Workshop Consensus
		for anticipated public ownership of land
16	Land Donations and Bargain Sales	Not a viable tool for post-storm redevelopment. Because landowner must have an incentive to enter into the deal. Oregon is developing a land donation program for hazard mitigation

Potential funding sources the Workshop participants felt to be viable options: National Flood Mitigation Assistance Program, Hazard Mitigation Grant Program, Special Districts for Beach Preservation, "Beach" Utility Fee (similar to a municipal taxing district), Intermodal Surface Transportation Efficiency Act Enhancement Program (for land adjacent to road improvements/reconstruction), Land and Water Conservation Fund, and Florida Recreation Development Assistance Program.

Florida, Division of Historical Resources, Florida, Division of Emergency Management, & 1000 Friends of Florida. (2006). *Disaster planning for florida's historic resources*. Tallahassee, FL: Florida Dept. of State.

This guidebook discusses how to preserve Florida's historic resources in both pre- and post-disaster scenarios. It includes detailed information on integrating historic resource planning in both the emergency management and hazard mitigation planning practices.

- If any federal dollars are to be used in disaster mitigation and recovery activities, FEMA is required to comply with Section 106 regarding the effects of its "undertakings" on historic properties that are included or eligible for inclusion in the National Register of Historic Places. The following undertakings can trigger Section 106 Review:
  - Construction,
  - Rehabilitation and repair,
  - Elevating structures,
  - Relocation,
  - Demolition,
  - License and permits,
  - Loans and loan guarantees,
  - Grants including the Public Assistance Program, Hazard Mitigation Grant Program, Unmet Needs, Pre-Disaster Mitigation, and Federal Assistance to Individuals and Households,
  - Federal property transfers, and
  - Acquisitions. (p. 12)
- An adverse effect is a direct or indirect alterations to characteristics of historic property that affect its eligibility for listing in National Register of Historic Places. This can include demolition, ground disturbance which destroys significant archaeological resources, physical alteration of a historic property which is inconsistent with the applicable Secretary of the Interior's Standards and Guidelines, or new construction which alters the context of a historic property or district. If there is an adverse effect, in consultation with the SHPO and/or the THPO, FEMA is required to solve it by:
  - Reexamining the project to find ways to avoid the adverse effect, or
  - If avoidance is not possible, developing a Memorandum of Agreement (MOA) identifying the specific undertakings or treatment measures that will be used to minimize or mitigate the adverse impacts. (p. 15)

- Integrate historic preservation into the local emergency management process by analyzing potential debris disposal sites, staging areas, and temporary housing sites during pre-disaster planning to avoid historic and archaeological resources. (p. 17)
- Common Historic Preservation Concerns after a Disaster:
    - Restorable buildings are torn down.
    - Irreplaceable and significant architectural elements that could be salvaged are carted away with debris.
    - Trees are discarded rather than replanted.
    - Property owners make hasty decisions and inappropriate repairs.
    - Archaeological resources are disturbed by heavy equipment.
    - Normal design review procedures for changes to historic properties may be suspended.
    - Construction applications may overburden officials, as there may be insufficient staff to carefully review all the applications.
    - Inspections of historic structures may be carried out by persons without appropriate qualifications with respect to the preservation of historic resources. (p. 18)
- Create a Historic Resources Inventory: It is extremely important for a community to have an accurate and comprehensive inventory of its historical resources. The inventory should be professionally compiled under the auspices of the local historic preservation office or organization. Consult with the local emergency management office to make sure that the inventory contains the information needed to help with recovery. If the post-disaster clean up plan for South Dade County had included a simple inventory of structures, some of those resources may have been preserved. (p. 21)
- If the Historic Resources Inventory is available in GIS, include the historic resource layer on maps created for cleanup and damage assessment teams after a disaster. (p. 26)
- Create a Historic Preservation Response Networks: Compile a list of people who have specific preservation knowledge and are willing to help with pre-disaster mitigation and post disaster recovery. Including preservation professionals from neighboring communities. (p. 27)
- Develop Expedited Historic Preservation Review Procedures: In the aftermath of a disaster, however, steps must sometimes be taken in a matter of hours or days to salvage a historic resource. Therefore, it is important that communities establish expedited historic review procedures to implement in the event of an emergency.

  Steps to take:
    1. Identify stabilization or minor repairs that can be undertaken without review.
    2. Authorize the architectural review board staff to review and approve certain types of repairs.
    3. Accept Section 106 review in lieu of local reviews, where it applies.
- Develop Site-Specific Emergency Response Plans: Historic preservation needs to be integrated into emergency management at both the local and resource levels.

  Steps to take:
    1. Work with owners of individual historic sites to develop site-specific Emergency Response Plans.
    2. Make sure each plan covers coordination and staffing, pre-disaster planning, actions to be taken immediately prior to disaster, if possible and actions to be taken in response to the disaster.
- Integrate Historic Preservation into the Local Response and Recovery Framework:

  Steps to take:

1. Identify lead and support agencies responsible for historic resources protection. The Florida SHPO is the lead state agency in Florida.
2. Incorporate these entities or a representative into the ESF matrices.
3. Identify the Historic Preservation Coordinators(s) who will be in the EOC as a part of the response team.
4. Ensure that historic preservation professionals are included on Local Damage Assessment Teams.
5. Make sure that a historic preservation element is included in mock disaster training exercises.

- Analyze Potential Sites During Pre-Disaster Planning:
  Steps to take:
  1. Identify and analyze debris disposal sites, staging areas, and temporary housing sites as part of the local pre-disaster planning process.
  2. Ensure that an archaeological is appointed to the site selection team.
  3. Utilizing the existing compliance review process at the Department of State to confirm that no historic resources are located on proposed sites.
  4. Have a professional archaeologist filed-check professional site, prior to their selection.
  5. Incorporate the approved sites into local emergency management plans to eliminate confusion and delay when a disaster hits. (p. 44)
- Integrate Historic Preservation Into the Local Mitigation Strategy (p. 47)
- Improve the Ability of Historic Resources to Withstand the Impacts of a Disaster (p. 49)

Francaviglia, Richard V. 1978. "Xenia Rebuilds: Effects of Predisaster Conditioning on Postdisaster Redevelopment." ***Journal of the American Institute of Planners*** **44(1):13-24.**

This article provides an overview of the progress of Xenia, Ohio three years after it was devastated by a tornado that left one third of the town either damaged or destroyed. Xenia before the tornado was typical of small mid-west towns in the middle 1970s: a slowly decaying downtown, emerging strip shopping along major arterials, retail competition from malls in the neighboring communities, blighted low-income areas and extensive development in the flood plain. The wide-spread damage, especially down town and in the low-lying (blighted) areas provided the city with an excellent opportunity to check this slide to decay through a redevelopment effort that avoided the past mistakes in zoning and land use patterns. Realizing this, the City fathers imposed a moratorium on reconstruction in the downtown area and commissioned the Miami Valley Regional Planning Council to develop a strategy for redevelopment, which they completed in two months. Although the timeframe was short, the planners met extensively with local officials and rank and file citizens of Xenia. During this period, two groups emerged: Those favoring the local, free-enterprise approach and those favoring guidance from outside groups and federal assistance (chiefly federal urban renewal program guidelines and grants). The newly adopted redevelopment plan with its revised zoning code stressed three key elements: 1) a pedestrian oriented downtown shopping area (mall) to compete with the shopping centers, 2) housing reconstruction on the devastated area immediately west of down town using a variety of housing styles (high, middle and low income) to accommodate a socially and economically diverse displaced population, and 3) creation of a greenbelt along the previously developed Shawnee Creek floodplain, precluding redevelopment in the floodplain and screening the downtown area from highway oriented strip development. Along with the passage of the new plan with its comprehensive, broadly applied zoning the Commission also approved the use of *overlay zoning* to maintain some flexibility and to help expedite reconstruction. Actually, it became a means for the forces opposing change to exert themselves, and zoning

amendment by zoning amendment, Xenia began to re-emerge along the familiar patterns of the past. The downtown retained its automobile orientation, the devastated west side of town became a commercial area dotted with large empty lots extending on into the flood plain. The area within the flood plain was re-established as a residential area parts of which soon found themselves ineligible for FEMA flood insurance.

The forces arrayed against the plan fell generally into three factions: 1) The Commercial faction whose lack of organization resulted in a commercial pattern that emphasized strip development and a general disregard for centralized shopping in the central business district. 2) Private residential forces with a neighborhood orientation some of whom became very powerful in the tornado aftermath and had a significant impact on zoning in the west side of town, and 3) Governmental forces that diffused central power to a number of neighborhood groups that turned out to be dominated by the factions that wanted to cling to the past.

He concludes that the perception of the past was simply too strong in the minds of the government leaders and the citizens who ultimately wanted to perpetuate what was familiar.

Fraser, James, Rebecca Elmore, David Godschalk and William Rohe. 2003. *Implementing Floodplain Land Acquisition Programs in Urban Localities*. Chapel Hill, NC: University of North Carolina at Chapel Hill, The Center for Urban & Regional Studies.

This study examines the unique issues and challenges faced by 4 communities implementing a buyout program: Greenville, North Carolina, Kinston, North Carolina, Grand Forks, North Dakota, and San Antonio, Texas. From various interviews with city officials, staff and residents the authors gathered information and provided recommendations for implementing buyout programs in the future. The most important recommendation from study involved public perception. It is important to not only provide information to the public, but to also reach out to residents and involve them in the process from day one. This ensures that both residents and city officials understand each step and the positive and negative effects it may have on them.

- Critics have argued that federal flood control efforts along with the availability of relatively cheap federal flood insurance have facilitated development in floodplains, putting more people and buildings at risk and perpetuating a cycle of development, flood damage, flood control, further development, further flood for flood-damaged homes to be repaired or rebuilt, only to be damaged or destroyed again by a subsequent flood. (p. 7)
- A typical buyout program includes the following steps:
    - Local officials evaluate the community's mitigation options, including land acquisition.
    - If there is sufficient support within the community for a buyout, local officials submit an application for HMGP funds to the state. The application must show that a buyout is a cost-effective mitigation strategy.
    - The state reviews the application, prioritizes projects, and forwards the application to FEMA, usually to the regional office. FEMA reviews the application to ensure that it meets the eligibility criteria, e.g., is environmentally sound, cost-effective, and reduces the future risks from natural hazards. Typically, acquisition of substantially damaged homes, that is, where the cost to repair the home is more than 50% of its value before the flood, are deemed cost-effective.
    - Once the application is approved, the state, working through the local government, begins the buyout process. States are responsible for administering the program, although FEMA retains regulatory oversight.

  - Individual homeowners do not apply directly to FEMA for funds. In addition, HMGP funds are available only in communities that lie within areas officially declared by the President as a disaster area.
  - FEMA contributes 75% of the total cost of a buyout and the state or local governments must provide the remaining 25%, which can include cash or in-kind contributions. Money from other federal sources cannot be used for the match, with the exception of Community Development Block Grant funds from the Department of Housing and Urban Development.
  - Buyouts are strictly voluntary. Homeowners are offered pre-flood fair market value for their home, as determined by a licensed appraiser. In addition, the community pays all closing costs and real estate transaction costs, including appraisals, title searches, surveys, etc. (p. 8)
- Key factors affecting the overall success of a buyout program were risk, neighborhood attachment, and buyout process factors including timing, communication, and trust. (p. 22)
- Timing was another key issue impacting overall buyout program success. The length of time it took to receive and process information affected how quickly each individual buyout could be completed, and how soon residents and buyout administrators could return to their regular, pre-flood activities and to a sense of normalcy. (p. 29)
- While buyout programs have the ability to create positive effects, including the reduction in private and public risk, respondents reported that it is critical that individuals affected by buyout programs are able to have a voice in the process. (p. 47)

Recommendations:

- Risk Assessment: Provide an opportunity to conduct an assessment of resident's construction of risk. Dimensions, for which items need to be created, include a standardized set of questions about housing options, economic outlook and employment situation, as well as resident's existing social networks and how these have provided support. Beyond these topics sites need to develop items that will tap into the unique circumstances of their locality, acknowledging how sense of place impacts groups differentially. (p. 50)
- Neighborhood Attachment: Factor in people's attachment to neighborhood by recognizing what tangible effects it has on residents. A battery of items needs to be developed in order to measure people's concerns over leaving their neighborhood including: what the neighborhood has provided them; how placed-based their social networks are; the potential effects of leaving their neighborhood; and their level of opposition to leaving their neighborhood. (p. 51)
- Buyout Process: Create relationships between all potential stakeholders at the federal, regional, state, and local levels in order to prepare for the implementation of buyout programs. Developing networks and relationships would serve to reduce confusion over issues of what agency has authority in different domains. (p. 52)
- To the best of their knowledge, localities must determine, the organizations to be involved in a post-flood recovery effort, and specifically, the organizations and activities to intersect with the implementation of a buyout program. (p. 53)
- Develop a data warehouse at the city/county level that would house all pertinent data necessary to conduct a buyout program. This data warehouse would be a repository for pertinent information and would be organized in such a way as to permit a wide range of analyses comparing resident characteristics, parcel-level data, and neighborhood and citywide data, across a host of relevant domains from hydrological data to economic information. (p. 54)
- Create a participatory planning taskforce for buyout programs that includes neighborhood leaders and liaisons, as well as city officials and professionals engaged in planning. (p. 54)

Godschalk, David R. 1985. Rebuilding after Hurricane Frederick: Gulf Shores' Struggle with Mitigation Policy. Chapel Hill, North Carolina: University of North Carolina, Center for Urban and Regional Studies, Hazard Mitigation Research Program.

This case study of Gulf Shores' recovery from Hurricane Frederick highlights the difficulty of not missing opportunities to mitigate future disasters during recovery in the push to return to normal. Development in Gulf Shores was booming prior to the hurricane and exploded afterwards. It was the first community to be able to repay its federal disaster loans during the stipulated 3-year period because of the increase in tax base it experienced during redevelopment. This outcome was seen as successful by the community according to Godschalk. The community did make some steps in mitigation despite building back to a higher density. As Godschalk points out, they were dealing with a difficult paradox – "its most valuable real estate was also the most hazardous area of the community." This is a key issue that all coastal communities must deal with in post-disaster redevelopment planning.

Godschalk states that post-disaster mitigation actions take place in 2 stages of recovery:

- First stage, immediately after disaster, "involves immediate decisions about rebuilding damaged private homes and businesses and restoring damaged streets and utilities." In Gulf Shores it lasted from the hurricane in Sept. 1979 into 1980. Included following decisions:
  - building moratorium (lifted as soon as water and sewer systems were repaired),
  - utility rebuilding (engineer recommended moving sewer trunk line back but FEMA funding was needed and the justification needed to use the money for anything other than repair to pre-storm conditions was decided would take too long),
  - highway relocation (leaders wanted to move state road back farther for evacuation and erosion purposes but state highway department would not),
  - damage assessments for individual structures (building inspector purposefully underestimated the extent of damage so that non-conforming structures wouldn't reach the 50% threshold and be required to meet flood and building code standards because many buildings were not insured and would be expensive to bring up to code), and
  - hazard area property acquisition (several properties were acquired with federal funding and local match but only after the mayor had tried to conceal the availability of these federal funds)
- Second stage, after semblance of normalcy achieved, "involves decisions about rewriting plans, policies, and regulations affecting future development in hazard areas." In Gulf Shores, 1980-1985. Included the following decisions:
  - Side setback
  - New zoning ordinance (innovative transfer of development rights for that time)
  - Building code supplement (voluntary)
  - Coastal construction setback line (loophole for high rises)

Haas, J. Eugene, Robert W. Kates, and Martyn J. Bowden, editors. 1977. *Reconstruction Following Disaster*. Cambridge, Massachusetts: MIT Press. 331 pages.

A classic study referred to in most disaster research, although some of their theories of the recovery process have been rejected by more current case studies as noted in other annotations in this bibliography.

Factors affecting the rate of disaster recovery (pg. 12)

- Magnitude of damage and loss
- Resources for recovery- financial, material, and human
- Prevailing disaster trends- rapidly growing cities vs. stable, stagnant, or declining cities
- Quality of leadership, degree and comprehensiveness of planning, and form of organization and decision-making- common key is the degree to which uncertainty is reduced

Recovery involves value choices that give varying emphasis to the early return to normalcy, the reduction of future vulnerability, or to opportunities for improved efficiency, equity and amenity.

Disaster recovery can be divided into 4 overlapping periods:

- Emergency period – few days to weeks, typically ends when search and rescue and mass feeding/sheltering finish; a disaster declaration to trigger emergency acquisition and withdrawal mechanisms should be invoked; preliminary declaration of redevelopment, restoration, impact, and undisturbed areas made and moratorium begun; lease-taking of land for temporary facilities completed
- Restoration period – few months, end marked by return of major services, most debris removed, evacuees intending to return have done so; At end of moratorium the permanent 4-area classification should be made, by end of period- redevelopment sketch plans with a detailed Phase 1 for 1st 18 months completed, public review of plan begun.
- Replacement reconstruction period – building stock rebuilt to predisaster levels and social and economic activities return to predisaster levels or higher; redevelopment plan is revised based on public review, Phase 2 of plan drafted with considerable public involvement
- Commemorative, betterment and developmental reconstruction period – serves to memorialize the disaster, mark improvement or prepare for future growth.

If building stock is in short supply, marginal businesses and lower-income families have a hard time reestablishing themselves. Inequalities emerge from what is initially perceived as a common community of suffering.

Seven basic issues that arise after a major disaster (common links are money and time):

- Should normal, as contrasted to extroidinary, decision-making mechanisms be used in deciding how, when, and where to rebuild the heavily damaged city?
- Should there be changes in land use?
- Should there be changes to the building codes?
- Should there be a concerted effort to make the city more efficient and more attractive?

- Should there be compensation or special financial assistance for private property losses?
- How should disaster-produced personal and family problems be handled, i.e. availability and cost of housing, employment, health problems.
- How should increased local public expenditures be financed when there is decreased income through property taxes but increased need of services?

Suggestions for the policy-maker:

- Don't wait until end of restoration period to examine upcoming reconstruction issues
- Decide immediately whether new decision-making mechanisms, including possible advisory groups, are going to be needed
- Determine the availability of local specialists needed for reconstruction process
- Design planning process with the idea that fundamental change is unlikely and past trends will be accelerated.
- Don't assume temporary housing will be temporary
- Don't confuse physical reconstruction with recovery
- Don't delay important decisions

"A basic error of the professional community is to assume that formal studies, plans and designs are requirements for reconstruction when there is already such a plan in the minds of the community inhabitants – the predisaster city…If too much time is spent on new concepts or the proposals are overly ambitious or too grandiose, uncertainty, conflict, further delay and failure follow." (pg. xxxiii)

Early decision-making and dissemination of information is answer to uncertainty problems.

Before disaster strikes is time to:

- Inventories of available land for temporary housing, land use changes, etc should be made including info about legal steps necessary for acquisition and land values (updated annually).
- Mechanisms for land acquisition and withdrawal from damaged areas should be established on a standby basis.
- Design reconstruction organization and responsibility

Emergency classification of land after disaster:

- Areas heavily damaged and intended for redevelopment – a selection of land should be made for outright taking from this category
- Areas damaged but capable of restoration – emphasis on hazard-reducing regulation
- Areas undamaged but impacted over the long-run by reconstruction – temporary sites
- Undisturbed areas

Early and generous funding of high damage acquisitions, lease, and option arrangements a priority. Final acquisitions can be funded by more traditional means.

Public participation – too much to expect victims to be involved until end of restoration period, however oversight and public participation needed during early and critical stages of land use changes. Advisory citizen groups and planning groups could play a role.

Organization – reconstruction planners need to be separate from the emergency organization. Mayor or city managers should head reconstruction committees while delegating emergency leadership to specialists since emergency priorities are clear. Consensus building role of top leadership is needed in planning and local leadership needed rather than outside consultants leading reconstruction planning.

Hegenbarth, Jane L., David J. Browner. 1985. "Redevelopment After the Storm: Hazard Mitigation Opportunities and Obstacles in the Post-Disaster Setting", Report No. 85-15, Center for Urban and Regional Studies, University of North Carolina at Chapel Hill and National Science Foundation.

This report describes the post-disaster redevelopment experiences of three communities that were severely impacted by hurricanes. The communities are: Harrison County, Mississippi impacted by Hurricane Camille in 1969; Gulf Shores, Alabama impacted by Hurricane Fredrick in 1979; and the Galveston Bay Area impacted by Hurricane Alicia in 1983.

The coastal damage to Harrison County from Camille was extensive and had a depressing effect on land prices as well as the desire to rebuild in many areas of the county that existed to the time of this article. The larger communities, Biloxi and Gulfport, fared much better in part because unlike the smaller communities they had enacted a building code several years before and because of their size and importance within the state were better able to secure grant assistance. The clearing of waterfront property by the storm and the availability of federal assistance which was used to purchase a sizable amount of this property in the downtown town water front area, presented an opportunity for downtown revitalization. This became part of an urban renewal project which had little or nothing to do with mitigation and actually increased waterfront density.

Gulf Shores was relatively undeveloped at the time Fredrick struck, had no professional planning staff, an unwieldy zoning code and a large number of non-conforming structures in the most vulnerable areas. Thanks to significant federal aid from FEMA the community made a fairly rapid recovery bolstered by a building boom as developers bought up beach front property with the structure already cleared away. Property owners were only too happy to sell at ten to twenty times the original price. The growth of new homes with zero lot lines alarmed many residents forcing local official to overcome their traditional distain for regulations on private property and impose some building regulations. Again, the redevelopment was extensive, but unplanned and not oriented to mitigation.

Galveston, unlike the other two, created a Recovery Task Force which aided in facilitating the reconstruction and with the FEMA aid and insurance money much of the downtown was able to remodel and refurbish itself. At the time of this article, however, the city was trying to increase its tax base with incentive for new home construction, but much of the property is in highly vulnerable areas. Here again there has been significant reconstruction and new development, but little has had much to do with mitigation.

The authors conclude that the pressure to return to the pre-disaster status quo is very strong, especially from displaced home owners and businesses. Opportunities for improvement must be identified and agreed upon before the event or get overlooked in the rush to rebuild the familiar. In areas that are conservative in their

approach to regulation of private property, and where developers see the area as ripe for development, a disaster presents a significant opportunity for redevelopment, but at the loss of non-structural mitigation. Here a state and federal regulatory presence is needed. Other negatives included misperceptions about the effectiveness of codes as in Galveston where it was widely believed that the destruction was due to the impact on substandard housing and an unrealistic belief that new homes built to the new code were safe even in high risk areas. In Galveston and Gulf Shores, elevated homes would undoubtedly reduce future flood damage, but the perception that they were above the danger caused many to ignore information on evacuation.

Hillsborough County. 2009. *Hillsborough County Post-Disaster Redevelopment Plan.* (Draft Version June 2009): Tampa, FL

Manatee County. 2009. *Manatee County Post Disaster Redevelopment Plan.* (Draft Version May 2009): Bradenton, FL

McIlwain, John K., Alexa Bach, Mary Beth Corrigan, Richard Haughey, Prema Katari, George J. Kelly, and Michael Pawlukiewicz. 2006. *Principles for Temporary Communities*. Washington, DC. The Urban Land Institute.

This is a document published by the Urban Land Institute (ULI) as a part of ULI's Principles Series on the temporary housing best practices, following a disaster event. This document details the needs of displaced residents and the manner in which temporary communities should be constructed. It seems to be based on theoretical recommendations and not on real-life examples however.

- Providing temporary housing without paying attention to the design and functioning of the whole community creates a dysfunctional environment that undermines the residents' ability to recover—emotionally, physically and economically. (p. v)
- Good definitions for types of mass-produced housing: prefabricated homes, modular homes, container homes, manufactured housing and mobile homes. (p. vi)
- Temporary housing will need a full range of public services: police, fire protection, social services, schools, etc. (p. 2)
- Suggests developing regional temporary housing plans to be developed in areas where disasters are likely to recur. If public lands such as municipal parks, play fields or fairgrounds are to be used then it is desirable to plan the temporary housing locations so that infrastructure can be reused in future disasters. In the case of fairgrounds, one option is to install infrastructure that can be used year-round for event-based parking of recreational vehicles. (p.3)
- Care should be taken to limit the amount of impervious surfaces and protect (and wherever possible, enhance) green space. (p. 4)
- Best practices that can successfully address communities concerns include the screening of views, a sensitive lighting plan, meticulous property management, an effort to limit permanent environmental impacts. (p. 5)
- Smaller temporary communities (in comparison to large ones) are easier to develop and manage and have less impacts on surrounding area. (p. 5)
- A good rule of thumb is that the population of a temporary community should not exceed 5% of the population of the receiving community. (p. 5)

- Transitional Neighborhoods: A FEMA Joint Housing Solutions Center strategy for transforming temporary housing into permanent new neighborhoods that will be built and supported by public/private partherships. Transitional neighborhoods will have 3 Components:
    1. Reusable Infrastructure
    2. Smart Growth design principles
    3. Support Services for those that have been displaced by the disaster. (p. 7)
- Going Home, Inc.: a new non-profit organization that developed an innovative approach to post-disaster housing:
    1. The dwellings are temporary residences that can be transitioned into permanent homes.
    2. The approach focuses on quickly reestablishing everyday community life. (p. 8)
- An indoor community center—with kitchen, a lending library, Internet access and meeting space will provide extra room and make it possible for neighbors to meet and make friends. (p. 9)
- Must achieve strong transportation linkages (i.e. shuttle bus services; road layouts that connect to the surrounding community; strategically located parking areas and sidewalks; street names; pedestrian linkages; open space) in order to link to outside community and prosper. (p. 10)
- To maximize the location's natural benefits and minimize its deficiencies, design should take into account, siting, and topography. (p. 13)
    - A patio, garden, or lawn space can provide important mental benefits to residents who have been traumatized by a disaster. Often these are the only spaces where residents can relax and enjoy solitude. (p. 14)
- Ensuring that a temporary community is racially and socio-economically diverse can create a sense of shared sacrifice among residents—which in turn, can strengthen their feeling that, at least within the temporary community, fairness does exist. (p. 14)
    - Households from different demographic groups should be distributed evenly, to help to prevent the community from becoming polarized along racial or socio-economic lines. A housing lottery is one way to avoid the perception of unfairness in the distribution of housing. (p. 15)
- Two levels of safety must be managed:
    1. actual physical safety
    2. the perception of safety (p. 16)
        - Defensible space is a gradation of space from the purely private to purely public (i.e. sidewalks in front of houses, etc.). Defensible space makes communities safer in that residents feel a shared sense of responsibility for various public spaces and for watching and maintaining those spaces. (p. 17)
- Because temporary communities may exist for a year or even longer, creating a civic identity and a sense of community responsibility is important to reestablish a sense of normalcy and stability for displaced residents. People are more likely to tend to things they feel invested in—"You don't wash a rental car." (p. 18)
- Provide job training, adult education, access to temporary employment, child care and after school programs and set aside space for a business incubator. (p. 20)
- Devising an exit strategy – essential to prevent or minimize long-term environmental impacts such as soil compaction and contamination, erosion and sedimentation, and stream degradation (p. 22)

Liu, Amy and Allison Plyer. 2009. *The New Orleans Index: Tracking Recovery of New Orleans & the Metro Area.* Washington: The Brookings Institution Metropolitan Policy Program and Greater New Orleans Community Data Center

This reference work contains information on a wide variety of post-Katrina issues that the New Orleans metropolitan area is dealing with. The document serves as a model for future efforts to track key indicators regarding population and employment loss and recovery, housing and construction data, and other recovery variables. The data are compiled in an effort to assist decision-makers and community leaders identify "the opportunities and challenges" faced by the New Orleans area and to track how far the region has to go to reach its recovery goals.

Mileti, Dennis S. 1999. Disasters by Design. Washington: The Joseph Henry Press. 351 pp.

This book focuses on sustainable hazard mitigation with a chapter addressing this subject in the context of post-disaster recovery. The following points are pulled from the chapter on preparedness and recovery:

- In examining technological disasters study noted that they differed from natural ones in a lack of a sense of urgency for rebuilding, a priority for relocation versus rebuilding in place, more elaborate conflict between victims and non-victims, and a delayed response by governmental authorities. (pg. 214)
- Preparedness includes such activities as formulating, testing, and exercising disaster plans; providing training for disaster responders and the general public; and communicating with the public and others about disaster vulnerability and what to do to reduce it. (pg. 215)
- Other things being equals, households with higher socioeconomic status and non-minorities are better prepared than others, but even those that do prepare are doing relatively little. (pg. 215)
- The strongest predictor of preparedness levels among businesses is size, followed by previous disaster experience, and owning rather than leasing business property. (pg. 218)
- Reconstruction – process of reducing vulnerability and enhancing economic capability (pg. 229)
- Recovery is not just a physical outcome but a social process that encompasses decision-making about restoration and reconstruction activities.
- Recovery is characterized by wanting to (1) rapidly return to normal, (2) increase safety, and (3) improve the community. (pg. 233)
- Time is by far the most compelling factor. (pg. 233)
- Prevent planning organizes community processes for more timely and efficient post-event action, clarifies key recovery roles and responsibilities, identifies potential financing, minimizes duplicative or conflicting efforts, avoids repetition of other communities' mistakes, and achieves greater public safety and community improvement. Most importantly it can help communities "think on their feet" and thus be flexible enough to adapt their post-disaster actions to the actual conditions. (pg. 233)
- To be effective local recovery plans should include:
    - Community involvement
    - Information
        - Characteristics of the hazards and areas likely to be affected
        - Population size, composition, and distribution
        - Local economy
        - Resources likely to be available after a disaster
        - Powers, programs, responsibilities of different levels of government
        - Existing land use patterns and building stock location and characteristics
        - Local infrastructure

  - Organization – topic-specific groups
  - Procedures
  - Damage evaluation
  - Finances
- The post-disaster period is an opportunity to upgrade the quality of construction to better resist subsequent events and begin to think through ways to mitigate future damage. (pg. 236)
- Two important factors in bringing about post-disaster improvements: (pg. 237)
  - the existence of a preexisting plan or ongoing process for reshaping a community. This provides a commitment to follow through and the necessary preexisting knowledge of potential options.
  - the availability of outside funding to help bring about the desired changes.

Minnesota Department of Public Safety. *Recovery From Disaster Handbook*. St. Paul, MN: State of Minnesota. Available at http://www.hsem.state.mn.us/HSem_view_Article.asp?docid=313&catid=4 [Accessed June 14, 2007]

The Minnesota Homeland Security and Emergency Management Division drafted this handbook to assist local governments recovering from disasters. This document provides the fundamental steps to both pre-disaster and post-disaster recovery planning and is a great source for both housing and economic recovery.

- Small Business Administration (SBA) Declaration. When a disaster is not large enough to receive a presidential declaration, it may still qualify for an SBA declaration., which is in the form of low-interest loans. (Ch. 1, p. 2)
- Counties need to take responsibility for rural residents or ensure that another government entity or non-profit organization is looking out for the needs of rural residents who may otherwise get overlooked. (Ch 1, p. 4)
- Regional Development Commissions have assisted with recovery from disaster by:
  - coordinating long-term recovery throughout a region
  - assisting local jurisdictions with preparation of applications for assistance. (Ch. 1, p. 4)
- Every effort should be made by the assessment teams to share data thereby limiting the intrusion into the already disrupted lives of the disaster victims. Documentation of the inspections is imperative, storing the information on a computer is recommended. Make sure to get victims current address and phone numbers. (Ch. 2, p. 1-2)
- Determine what services staff are performing that aren't critical functions and suspend them for the time being. An example might be dog license renewal. (Ch. 2, p. 3)
- Needs assessments vary from damage assessments in that they don't deal with the physical damage, they address what it is people want and intend to do in the future. Conducting a needs assessment or market analysis provides information that is needed to make decisions about long-term recovery. Planning for housing and economic recovery should not begin until the information is obtained. (Ch. 2, p. 7)
- Issues to address in the plan:
  - Repair or replacement of:
    - Infrastructure
    - Housing
    - Businesses
    - Public buildings and facilities
    - Government buildings and facilities

- Priority for acquisition/buyouts
- Debris collection and removal from residential and commercial properties
- Disposal of debris
- Hazard mitigation strategies
- Management of donated goods and services
- Strategy for communicating with the citizens
- Assessment of community's fiscal situation (current and projected)
- Redesign of damaged neighborhoods or business districts
- Assignment of responsibilities
- Schedules for staff meetings, meetings with Elected Officials and Public meeting (Ch. 2, p. 7-8)

- **A Recovery Coordinator should be appointed and be given a high level of authority. During recovery from a major disaster, the Recovery Coordinator should not be assigned any other critical function; this needs to be their primary responsibility. Administrative support will be needed for this position. The Recovery Coordinator needs to have legal authority to make decisions. The Recovery Coordinator needs to be the contact for department heads and top officials. This individual must also have authority to coordinate departmental activities, and then report to the council. A City Manager style of Government is a good model. (Ch. 2, p. 8)**
- **A disaster imposes a huge unbudgeted expense on a local government and, at the same time, it reduces the local tax base.**
    - **Applying for and receiving timely reimbursement for all eligible costs will aid recovery activities and hasten the reestablishment of the day-to-day government activities.**
    - **Documentation is the cornerstone of reimbursement for expenses.**
    - **Don't make commitments to spend funds for long-term recovery before you have written commitment from the funding source.**
- **Insurance coverage on public facilities is a major consideration for disaster recovery. Federal and State funds for Public Assistance are reimbursements – local jurisdictions need to come up with the money up front.**
- **During an emergency or disaster, a person who holds a professional license, certificate, or other permit issued by another state may render aid involving those skills in this state. (Ch. 3, p. 1)**
- **It has been found that the success of any disaster recovery program is enhanced when the public is made aware of rebuilding priorities and kept informed of progress. A community relations effort that communicates concern and a sense of positive, real movement to victims, as well as to the general public, has been found to be essential. (Ch. 4, p. 1)**

Housing:

- **Don't rush into the long term housing recovery. Assumptions about the effect of the disaster on the housing market may be wrong. Don't assume that because your community has lost many housing units there will be a strong market for new housing development. Learn about the potential market – people's financial capacity and their personal preferences – before deciding on your long-term new construction strategy. (Ch. 9, p. 1)**
- The objective of the housing recovery strategy should be to help restore people to their pre-disaster condition and address health and safety concerns, not enrich their living situation. (Ch. 9, p. 2)
- Households must understand that they are responsible for their own recovery. The role of public funds is to fill in the gaps after people have made a reasonable effort to meet their own needs, including applying any insurance proceeds to the rehab of their home or to a new home. (Ch. 9, p. 2)

- Meeting the housing needs of individual victims and helping rebuild the community's housing stock are two different objectives. If many of the people who lost homes are lower income and one of your community's greatest needs is new housing, then your target audience may not be people who were victims of the disaster. For example, a new construction strategy – given the costs of new housing development – may need to be targeted to households who want to buy up, not to households who were victims of the disaster. Such a strategy may allow for the more affordable existing homes to be made available to the victims. (Ch. 9, p. 2)
- Programs may be designed so that they not only help victims who were homeowners prior to the disaster, but they also may help pre-disaster renters become homeowners. Incentive programs can provide the down payment. (Ch. 9, p. 2)
- Value Gap. A value gap occurs when it costs more to build a house than it is worth after construction. The value doesn't equate to the cost due to local market conditions. This will affect the ability of local banks to make loans for rehab or new homes. This can affect owner-occupied or multifamily rehab and new construction. A loan program can be designed to help fill the value gap. (Ch. 9, p. 3)
- Affordability Gap. An affordability gap occurs when a household's income is not sufficient to afford the purchase or rehabilitation of the house. This can affect owner-occupied or multifamily rehab and new construction. Programs can be designed which help address the affordability gap. (Ch. 9, p. 4)
- Buy-out not sufficient to rebuild. This situation occurs when the pre-disaster market value, which is the price offered in a buyout, is lower than the cost to construct or purchase a new house. The worst situation occurs when the household is not capable, based on typical lending standards, of taking on the additional debt necessary to finance the difference. The strategy for these households may be to help them purchase existing houses or manufactured housing rather than build a new house. (Ch. 9, p. 4)

Business Recovery:

- There is a mutual interdependency between government and industry. When one has a problem the other needs to provide support. When both are affected, they need to work together to fully recover. Events that happen in the community can affect any organization. (Ch. 10, p. 1)
- Priority for use and fair distribution of public funds needs to be applied to assure that loans are made to businesses:
  - Adversely affected by the disaster
  - That were viable and creditworthy prior to the event
  - Whose insurance proceeds have been applied
  - Whose credit check indicates no back taxes or other delinquencies
  - Whose operation is in compliance with state and local land use requirements. (Ch. 10, p. 1-2)
- The cities' responsibilities include:
  - Securing the loan
  - Establishing a maximum loan amount per business
  - Developing a plan for administering repayments that are generated
  - Documenting the number of jobs retained through the assistance
  - Enforcing building and land use codes
  - Identifying the kinds of eligible financing (fixed asset/working capital) (Ch. 10, p. 2)
- Before committing local, state, and/or Federal Aid to a community's business recovery, get a realistic sense of its market potential.
  - What was the pre-disaster commercial business climate like?
  - What were retail sales; how do they compare with statewide or national per capita averages (or comparable measures)?
  - Were existing pre-disaster businesses healthy and experiencing growth or were they struggling?

- Were specific segments of the local commercial business climate particularly strong or weak?
- Were any business types under-represented in the market?
- Was their adequate commercial business space available?
- Was there excess capacity?
- What impact has the disaster had on surviving commercial businesses to date?
- What is the projected impact of recovery spending on the business community?
- What types of businesses will prosper as a result of recovery
- spending?
- How much private capital can be secured to conduct development?
- What share of the total development costs does this represent? (Ch. 10, p. 2-3)

- **Existing Business Needs**: When the commercial district needs to be reconfigured or moved the following need to be considered:
  - Where do existing businesses want to locate?
  - What can they afford to pay in rent/mortgage, based on previous business and future projections?
  - What are their square footage requirements?
  - How many businesses are dependent on nearby residential neighborhoods or other complimentary businesses?
  - How are the businesses affected by existing non-downtown commercial development?
  - What are their road access and parking needs?
  - How many businesses would prosper from proximity to local attractions (e.g., the river or river views)?
  - When a business is renting space that is damaged by a disaster, and CDBG funds are available, the business may be eligible for relocation assistance.
- **Physical Development Issues**
  - In which directions is the city growing, especially in relation to nearby communities?
  - How does the projected growth affect retail business location decisions?
  - How will future highway and bridge locations affect the downtown? How many of the disaster area commercial buildings are suitable for rehabilitation?
  - What types of business activity are these buildings suitable for?
  - Until prospective business types and tenants/owners are identified, how can parking needs be accurately projected?
  - How much retail space did neighboring communities lose?
  - What are their plans to replace/expand the amount of retail space?
  - How are their business recovery efforts progressing?

Checklist for developing a Pre-Disaster Community Recovery Plan

1. Determine Threats and Vulnerabilities
2. Organize Management to Address Identified Threats and Vulnerabilities
3. Develop a Recovery Plan for Identified Threats and Vulnerabilities to Include, but not Limited to:
   - Goals and Objectives to restore the community
   - Estimated costs and time frames for recovery
   - Priority strategies for recovery and restoration
   - Operational concepts for implementation
   - Identification of available resources for recovery
   - Identification of mitigation measures to reduce threats
   - Identification of additional resources needed for recovery
4. Develop Recovery Plan Annexes to Include, but not limited to:

- Conduct of damage assessment and documentation
- Debris management plan for clearance, storage and removal
- Restoration of life lines (utilities)
- Operation of unaffected public and private services
- Building repair and restoration
- Restoration of hospitals and community health institutions
- Restoration of public safety facilities
- Restoration of public and private communications
- Restoration of special needs populations
- Restoration of public and private housing and schools

5. Establish a Recovery Coordination Program for All Key Organizations Which Includes:
   - Designated recovery coordinator, including staffing, funding and documentation. The recovery coordinator shall be designated as Applicant Agent for FEMA declared disasters and/or emergencies.
   - Local community legislation establishing the recovery plan
   - Local community legislation establishing the Recovery Task Force
   - Local community legislation to name a recovery coordinator pursuant to FEMA guidelines
   - Organize the Recovery Task Force to include:
     - Government agencies and organizations
     - Public and private life line utilities
     - Private companies, organizations and agencies
     - Unmet needs volunteers
6. Develop a Communications Program to Provide Timely Accurate Information to the Public and All Other Participants in the Recovery Effort
   - Establish a public information process and staff
   - Develop recovery program media network
   - Develop recovery press release and public information needs
7. Institute a Recovery Resources Program to Secure Necessary Aid for Community Restoration. Outreach May Include:
   - Identify available Federal, State or private funds and resources
   - Establish pre-disaster service contracts with private providers
   - Establish mutual aid agreements with governments, utilities or private organizations
8. Develop a Recovery Staffing Program
   - Identify trained staff for continuing operations and restoration
   - Assure all personnel have ample time off the job
   - Identify staff shortages and develop a strategy to secure additional trained staff
9. Conduct Annual Recovery Plan Exercises
   - Update plans after each exercise
   - Integrate plan into the community emergency management plan

Morrow, Betty Hearn and Elaine Enarson. 1996. .Hurricane Andrew Through Women's Eyes: Issues and Recommendations. *International Journal of Mass Emergencies and Disasters* 14(1): 5-22.

This journal article examines the roles of women as both responders and victims, in the response and recovery phases following a disaster. It explains the domestic roles of a woman in the aftermath of a disaster and is useful when thinking about how to structure temporary communities.

- The family caregiver roles of women expand dramatically at all stages of disaster response. (p. 9)
- Women were instrumental in relocating displaced households and resettling family members into new homes and communities—often repeatedly as they moved from one temporary location to another. (p. 9)
- Stressful for teenagers and parents when there are no recreational facilities. (p. 10)
- Make information regarding temporary housing, etc. available to all cultures impacted by a disaster (multi-lingual, illiterate, special needs, etc.) (p. 12)
- Provide training on culture sensitivity to all disaster assistance employees and volunteers to have an understanding of the displaced families' backgrounds and needs. (p. 12)
- Woman banding together to share domestic tasks not only satisfies basic needs but helps create a sense of community. (p. 12)
- Encourage cultural celebrations during the recovery phases of a disaster to celebrate the uniqueness of the community and combat the sense of community isolation and despair. (p. 13)
- Workers should receive training, on-site briefings, and close supervision to ensure that female victims and their families, regardless of class or race/ethnicity, are treated with respect and receive equitable assistance. (p.17)

Nassau County. 2009. *Nassau County Post Disaster Redevelopment Plan.* Yulee, FL

Natural Hazards Center, Public Entity Risk Institute. 2005. *Holistic Disaster Recovery: Ideas for Building Sustainability after a Natural Disaster.* Boulder, Colorado.

The authors begin with the definition of a sustainable community: one with a healthy and diverse social foundation, a life-sustaining ecological system, and a healthy and diverse economy that adapts to change, provides long-term security and recognizes social and ecological limits. There are six principles of sustainability which help to build such a community:

1. Use consensus building to make decisions;
2. Maintain and enhance quality of life;
3. Build local economic vitality;
4. Promote social and intergenerational equity;
5. Protect environmental quality; and
6. Incorporate disaster resilience and mitigation.

The handbook focuses on using opportunities provided by a disaster to improve each of the six principles, a process called Holistic Disaster Recovery. Holistic Recovery recognizes that while a disaster recovery must be managed, it can be done in a manner that creates solutions and not more problems. It recognizes that with sufficient prior planning, recovery efforts can be carried out in a way that also accomplishes other community goals. Disasters can be catalysts for change.

In an ideal recovery process the community is proactive in managing the following:

- Recovery and redevelopment decisions that balance competing interests so that stake holders are treated equitability and long-term goals are not sacrificed for short-term gains;
- Multiple financial resources made available to achieve broad-based community support;
- Reconstruction and redevelopment opportunities to enhance economic and community vitality;
- Environmental and natural resource opportunities to enhance natural functions and maximize community benefits;
- Exposure to risk reduced to less than pre-disaster level.

The ideal recovery is consensus-based and takes into account long-term goals. It is holistic in that by following the above six principles the recovery leaves the community better off than it was before. Holistic disaster recovery is about change, and the best way to bring this about is by integrating the six sustainability principles into the pre-disaster planning.

Traditionally, recovery is divided into short-term and long-term phases. Short –term recovery is initiated to a limited degree during the response phase and kicks in as response is closing down. It includes moving people out of emergency shelters into emergency housing and search and rescue operations begin. Assistance programs for victims are initiated and utility services restored; debris is moved from the roadside to temporary sites. Long-term recovery begins as permanent repairs are made to facilities and infrastructure, and homes and commercial structures are repaired. It is during this period that most changes to improve the community (holistic recovery) can occur. This would include strengthening the building code, changing land use and zoning designations, improving transportation corridors and replacing (and expanding) affordable housing stock.

The obstacles are many, but can be overcome in part by using the ten step process advocated by FEMA and the Corps of Engineers:

Step 1: Get organized;
Step 2: Involve the public;
Step 3: Coordinate with other organizations;
Step 4: Identify the problem;
Step 5: Evaluate the problem and identify solutions/opportunities;
Step 6: Set goals;
Step 7: Explore all alternative strategies;
Step 8: Plan for action;
Step 9: Get agreement/consensus on the action plan;
Step 10: Implement, evaluate and revise.

The remainder of the handbook expands on how planners can use opportunities provided by disasters to advance each of the principles of sustainability and provides an extensive bibliography and examples of success stories for each of the principles.

LIMITATIONS: The handbook is an excellent reference on the components that make up a sustainable community and the issues to be considered at each step, but while it talks about the need for prior planning, the perspective is remedial – essentially how to react holistically to an existing post-disaster situation and while the

need for prior planning is implicit, not much is focused on how a planner collects information to anticipate problems and pre-identify opportunities pre-disaster.

Nigg, Joan. 1995. "Disaster Recovery as a Social Process". Preliminary Paper, Newark, DE: Disaster Research Center, University of Delaware.

The author's perspective is that disaster recovery is a social process rather than a technical one and that a successful recovery must begin with an awareness of pre-disaster conditions that result in greater risk to groups because of their greater structural and societal vulnerability. How decisions are made will have a significant impact on these groups, i.e. who is involved in the decision making, what are the consequences on the impacted social groups and who benefits from the decisions.

Research shows that families strive to re-establish themselves in a manner similar to the patterns existing prior to the event. Post-event reconstruction that takes place along familiar lines aids in psychological recovery. The failure of recovery to allow the resumption of normal routines can result in a loss of the sense of community and the cohesion that provides. Therefore, planners must be judicious in their efforts to redevelop blighted, ailing communities in the aftermath of a disaster and recognize the social nature of recovery.

The author concludes this section of the paper with a summary of research underlining the importance of identifying the community's most vulnerable groups in order to anticipate post-disaster problems and needs and prepare solutions before the disaster strikes. She goes on to discuss the extended family, the effects of low socioeconomic status, the effects of race or ethnicity, and urban/rural differences. Research shows (not surprisingly) that extended families tend to have more resources available and are less vulnerable than poor, low status or rural families with far fewer resources. Planners are typically aware of the needs of the sick, disabled and the elderly. The research shows a greater effort must be made to assess the post-disaster needs of a community's low socioeconomic, ethnic and rural families and provide recovery resources.

The author then conducts a similar analysis on the impacts of disaster on business communities pointing out that they have many of the same characteristics of families - size, income, supportive networks, the age and condition of the resident structure, and the consequent access to resources to aid in recovery. Although the paper was written in 1995 based on even earlier research, a period when the concept of business continuity was embryonic, she was able to find sufficient research to describe the social impact on families and neighborhoods when businesses are disrupted and eventually fail, as well as the impact of the loss of lifelines on business survival. Here she looks only at utilities and telephone and not suppliers, but indicates that the ability to survive disruptions in these services is a means for determining business vulnerability where structural damage is not the problem.

She concludes with the observation that while the study of the social impacts of disasters and the consequences of ignoring them in recovery is in its infancy, there is sufficient data to show its potential as a problem that must be identified and solved before a disaster strikes.

Olshansky, Robert. (2002). Planning for Disasters. *Journal of the American Planning Association,* 68(4), 453-454.

This short editorial discusses the "great opportunities and tough challenges" for planners working on disaster rebuilding. It points out some useful references but notes that few books provide direct guidance to planners. Some key insights include:

- Disaster creates opportunity for new development by destroying some existing development, however, the map is not blank since it comes with "pre-existing property boundaries, competing interests, and the memories of survivors." (pg. 453)
- Improvements during rebuilding "require plans, processes, broad participation, analysis and time. Because it is difficult to have both rapid reconstruction and deliberation, some element is usually compromised: perhaps safety, deliberation, equity, participation, or speed." (pg. 453)
- Natural hazards are more easily foreseen since they reoccur in the same places and therefore preparedness should include establishing disaster recovery processes ahead of time.

Olshansky, R. B. (2006). Planning after hurricane Katrina. *Journal of the American Planning Association, 72*(2), 147-153.

This article summarizes lessons from past disasters in an effort to frame a process for future disaster planning emphasizing the role of planners.

Difficult planning issues to be face in the Gulf Coast: environmental justice, racial equity, restoration of natural systems, repairing levees and other public works, relocations, environmental cleanup, cultural heritage, hazard mitigation, economic development, and urban redevelopment.

Lessons from other disasters:

- Urban systems generally re-emerge, with some improvements, in the same locations.
- Recovery is not a final, identifiable state, but evolves from decisions made over time and is achieved most readily when local organizations are free to respond to their specific circumstances.
- External funding is crucial to recovery, but is most effective when it allows for local flexibility – loans are different from grants, and have long-term effects that ripple through the community.
- Households and businesses at higher socioeconomic levels are more likely to recover to pre-disaster levels, and those who are better integrated into economic and social networks will recover faster. Small-business owners are often neglected in the first months following a disaster, even though they are unlikely to survive a business interruption. Lower income groups always have a weaker voice in recovery decisions, unless explicitly integrated into the decision processes.
- National political context is often crucial – importance of the affected region in upcoming elections; if mayors or local representatives are well connected to the national party in power, they can influence both the speed and quantity of financial assistance.

"Every post-disaster recovery manifests tension between speed and deliberation. Speed of recovery is important in order to keep businesses alive, rebuild infrastructure, and provide temporary and permanent housing. If

official agencies do not act quickly, many victims will begin to rebuild on their own in ways and at locations that they determine." (pg. 148)

"Planning can maximize the opportunities for coordination of land uses and infrastructure, ensure safety, promote design to improve the quality of residents' lives, account for the concerns of all citizens, and seek cost-effective solutions. The window of opportunity for accomplishing post-disaster improvements is short, lasting at most for several months following the disaster." (pg. 148-149)

Previously existing plans can help to improve both the speed and quality of post-disaster decisions.
Existing plans should have: "active planning process, including well established community organizations, lines of communication, a variety of planning documents and tools, and some degree of community consensus." (pg. 149)
Information systems that include inventories of parcels, structures, and hazards can greatly facilitate the recovery process.
Kobe, Japan hired planning consultants to work with neighborhood groups after their earthquake – great success. "These planners fostered agreement among citizens on action, gained consent for completed plans, shaped ideas, and brought government and ordinary people together. Consultants played an important role as intermediaries, explained city policies to residents, made citizens aware of resources, and advocated changes in the official plans on behalf of citizens." (pg. 150)
Information dissemination – "use existing data and plans and include mechanisms for sharing of data resources among agencies. Make technical materials and training programs available to support and enhance local and regional capacity to engage in informed deliberations. Use a range of communication media so that a full range of constituencies, including displaced residents and smaII-business owners, can participate. Provide public funding to hire neighborhood and community planners to assist residents in planning and financing their reconstruction." (pg. 150)

Palm Beach County. Division of Emergency Management. 2006. *Countywide Post Disaster Redevelopment Plan: Palm Beach County, FL*, West Palm Beach, FL.

Panama City. Planning and Land Use Services. 2008. *Post-Disaster Redevelopment Plan: City of Panama City, Florida*.

Peacock, Walter Gillis, Morrow, Betty Hearn, and Gladwin, Hugh. 1997. *Hurricane Andrew: ethnicity, gender, and the sociology of disasters*, New York, New York: Routledge.

This book draws from the findings of nine separate research projects examining how race, ethnicity, class, and gender interact in a disaster context. The authors discussed the "marginalization of the already marginalized." Following Hurricane Andrew recovery, especially in the Black neighborhoods, was problematic since these were the areas where poorer quality building construction existed. Insufficient insurance and inadequate settlements for rebuilding only exacerbated the situation. Also, many of the insurance companies that provided policies in these areas were the first to fail. The authors mentioned a number of policy considerations including public education, awareness programs for the disenfranchised, and reform in the insurance agency to monitor discriminatory practices.

The authors state that segregated neighborhoods are a part of our urban landscape that is not well integrated with the mainstream institutions critical for jobs, political power, financing, and insurance. Natural disasters

may simply reinforce the effects of segregation and marginalization, isolating Black communities further from the market mechanisms that underlay recovery and upward mobility. Proactive solutions must not only include the active pursuit of legal remedies to combat segregation such as fair housing laws, but also look at testing programs and ordinances for their ability to prevent discrimination.

The last chapter of the book titled "Disasters and Social Change: Hurricane Andrew and the Reshaping of Miami?" made a number of important points:

- No effective mechanisms were in place to coordinate efforts of public and private social service agencies. Since that time Voluntary Organizations for Disasters (VOAD) was formed.
- Communication and coordination was lacking among local governments
- During reconstruction governmental services (i.e., building permits, inspections, and contractor regulation) became overwhelmed
- Immediacy of rebuilding caused many mitigation initiatives to be put on hold – following Hurricane Andrew only slight mitigation modifications occurred due to political expediency and pressure from special interest groups like the building industry
- Conflicts often emerge in the aftermath of a disaster. Historically those with little or no power join together to form new groups and coalitions to effectively direct resources toward the underserved (i.e., women, the elderly, minorities).

Petterson, J., University of Colorado, Boulder, & Natural Hazards Research and Applications Information Center. 1999. *A review of the literature and programs on local recovery from disaster*. Boulder, Colorado: Natural Hazards Research and Applications Information Center, Institute of Behavioral Science, University of Colorado.

Petterson's literature review begins with the pertinent point that it is difficult to generalize about communities' experiences in disaster recovery since both the communities impacted and the events themselves are unique. Each community is of a varying size with different economic bases and community and cultural values as well as differences in preparation for an emergency. Despite this Petterson thinks there are similar trends and recovery lessons to be gleaned.

- The recovery process is not static as previously theorized but a "dynamic, interactive, and decision-making process".
- There are different forms of recovery. Rubin summarized them in 3 levels:
  1) minimalist/restoration
  2) foresight/mitigation
  3) visionary/community betterment
- The quality of the recovery effort is likely to be affected by previous preparations for, and the immediate response to, the disaster. All of the phases (preparedness, response, recovery, and mitigation) are interrelated. Mitigation permeates all phases.
- Recovery planning should be a pre-event, ongoing process with full support and involvement of top officials.
- A plan prepared in advance will solve the problem of not enough time to consider long-term effects of decisions made during immediate response.
- While not all aspects of recovery can be identified ahead of time, a framework can be established to identify and contemplate the most likely losses a disaster might bring and the recovery activities most likely to meet with success.

- Some post-event planning will still be necessary- a disaster can change the planning slate and provide new opportunities that can only be captured through a deliberate post-event planning effort.
- Local emergency managers and local planners need to work together.
- Redevelopment should be viewed as preparation for the future rather than recovery from the past.
- Recovery planning has many advantages such as being able to strategically utilize suddenly available resources to further long-range plans and minimizing the role of politics. It also can help in:
    1) identifying in advance the post-disaster recovery and reconstruction needs
    2) coordinating the various agencies and organizations involved in recovery and reconstruction
    3) establishing response and recovery priorities and procedures in advance
- Understanding and acknowledging underlying perceptions and trends that may act as obstacles to hazard mitigation and sustainable redevelopment during recovery will be important.
- Locally based, bottom-up recovery approaches are most effective although there will always be more than one level of government with a legitimate interest in elements of the recovery process. Full local control is more likely if the local government can demonstrate that it has a process and/or policies supported by relevant local interest groups that can be implemented without abnormal assistance.
- There is a need to restructure a local government's organization to provide some kind of centralized postdisaster locus for all recovery activities. Most research recommends a community participant recovery group to conduct the recovery assessment, planning, and retain leadership over long-term implementation. Elected body, ad hoc reconstruction commissions, public-private partnerships, and committees to oversee rebuilding have also been used. Existence of a redevelopment agency prior to disaster is most effective.
    - Grand Forks had an interesting structure- a Flood Response Committee that reported to the city council as well as council appointed "tri-chairs for recovery" which were the Director of Housing and Urban Development, the Public Works Director, and the Finance Director. The council also established a separate Business Redevelopment Task Force in order to more directly involve the business community.
    - Galveston used task force subcommittees on different topics staffed by community leaders and expert citizens.
    - Regardless of structure the organization needs well-defined authority and a clear structure for making decisions.
    - An issue is finding what mechanisms can help maintain the momentum and activity of the identified local group(s) to continue to address long-term redevelopment and not lose interest after immediate concerns are addressed.
    - The formation of neighborhood groups should also be supported by local governments.
- Personnel needs in a post-disaster setting are serious and can impact quality of recovery.
- Local officials need to be coached on their public roles after a disaster.
- Local jurisdictions need to have in-house experts in federal and state funding programs to help work through the complex funding programs while the city is in postdisaster disarray.
- Research of the Coalinga earthquake showed that private sources of funding (i.e. insurance and local bank loans) were most important to initial stages of recovery. The SBA loans were least helpful to businesses and residents because of delays.

- Local governments should be knowledgeable about innovative local financing tools as well (i.e. tax increment financing).
- Measure of success for a recovery plan's implementation is whether people and property are safer than they were before the event
- Success of a rebuilding program is enhanced when the public is made aware of rebuilding priorities and kept informed of progress
- Sustainable development in context of long-term recovery should:
  - Promote economic development
  - Recognize ecological limits
  - Improve distributional equity
  - Prevent or minimize harm to others
  - Promote participation
- Should encourage "multipurpose recovery" projects that solve a variety of problems
- Soldiers Grove experience showed that sustainable development needs should be inventoried as well. i.e. "quality of life" inventory to determine features to keep and new ones to develop; economic development inventory to also look at new commercial services that are needed

Polk County and Calvin, Giordano and Associates, Inc. 2009. *Polk County Post Disaster Redevelopment Plan:* Bartow, FL.

Puszkin-Chevlin, Ana, Mary Beth Burton, Ann Carlson, Mathew Kurry, and James F. Murley. 2007. *Living on the Edge: Coastal Storm Vulnerabilities of the Treasure Coast Barrier Islands*. Boca Raton, Florida: Florida Atlantic University, Center for Urban and Environmental Solutions.

The *Living on the Edge* report complements the regional visioning initiative of the Committee for a Sustainable Treasure Coast (CSTC), which in late 2005 published its recommendations for prosperity and balanced growth of the Treasure Coast region. This report gives recommendations on how to create sustainable, disaster resilient communities on the barrier islands of the Treasure Coast through smart growth principles, hazard mitigation and strong economic policies.

- Public education regarding hazard vulnerability and mitigation builds social capital. Education about coastal hazards should address pre-storm preparedness and post-storm recovery strategies and be tailored to specific constituency groups to maximize its effectiveness in modifying behavior. Emphasis should be placed on aspects of individual responsibility and the availability of public services and resources. (p. 109)
- Resiliency is enhanced through supporting economically disadvantaged citizens with a network of social and financial resources. To maximize social service providers' ability to serve community needs, coordination and increased financial and human resources are necessary. Public investment in identifying opportunities for new coordination and resources and creating those linkages are a valuable hazard mitigation project. (p. 109)
- Planning for resiliency requires vision and proactive intervention. The redevelopment of vulnerable areas must not rely solely on market-driven property trends or opportunities that might arise in the wake of storm damage, as most current policy is focused. The timing and opportunities created by those catalysts are unpredictable. (p. 111)

- Localities should continue to promote land conservation through public acquisition, conservation easements, and transfer of development rights that remove the development potential and promote sustainable hazard mitigation. Conservation land permits the ecosystem to absorb the storm impact and effectively reduces the total amount of potential asset exposure. (p. 111)
- Appropriate placement and design of commercial activities would minimize vulnerability to storm damage and strengthen the barrier island business community. Uses that do not require permanent structures of high value might be appropriate for parcels with significant vulnerability to storm surge or flooding. (p. 112)
- Defining overlay zones within which density and setbacks can be adjusted to reflect geographically-specific coastal conditions would promote resiliency without undue burden to the larger class of coastal parcels. (p. 113)
- Regional cost-sharing approaches should be explored to distribute the cost of upgrading and maintaining critical large facilities and road infrastructure. (p. 114)
- Localities should explore creative ways of financing beach restoration projects to ensure that costs are borne proportionately by the benefiting constituencies. Special taxing districts, such as the Hutchinson Island Special District in Martin County, are one example of how funds for beach restoration can be generated. (p. 115)
- Adoption of state building codes has increased the resiliency of the built environment, but more can be accomplished if current building codes are properly enforced, and if advances in engineering science are incorporated effectively in regulation. (p. 115)
- Post-disaster reconstruction is the last opportunity for structural hardening. Insurance companies and regulators should craft coverage policies that promote enhanced resiliency rather than replacement of similarly vulnerable assets. (p. 116)
- The growth and importance of the modular and pre-fabricated building industry in providing housing suggest that additional attention must be focused on that industry segment. Although the new building code regulations enhanced their resiliency, that resiliency must be monitored as the buildings age and experience multiple storms. The manufacturers of such housing stock should be required to adopt the most resilient engineering techniques that emerge, not the minimum statutory standard. (p. 117)
- A legislative mechanism must be developed to ensure that the analysis and recommendations developed in the LMS and LMS updates find their way into the local comprehensive plan in a timely manner. If the EAR processes only occur every 6 years, there should be a simple way of updating the plans or putting them on a coinciding cycle of updates and adoption. Integration among plans must focus on ensuring that planning directives have institutional resources for implementation. (p. 118)
- Regionally, planners must target businesses that contribute to resiliency and do not introduce new vulnerability. Firms that are ill-suited for a climate subject to extreme events (for example, companies whose production processes are based on 'just in- time' inventories or need to store unmoveable inventory) should be identified. It is important to discourage their proliferation and to anticipate the consequences of the absence of those goods and services in the economy. (p. 119)
- Government and business interests must work cooperatively in preparing companies to better cope with and reduce the disruption of business activities. Hazard events challenge firms of different sizes and operational requirements in different ways. Adaptive strategies must be tailored and incorporated into business plans early on to ensure that they are integrated into strategic decisions on capital investment and growth. (p. 119)
- The critical role hotels play in emergency evacuation and post-disaster recovery must be recognized and effectively organized. Hotel facilities need to be built to hardened standards and equipped with facilities to accommodate extended stays under emergency conditions. (p. 121)

- There must be a commitment by both public and private entities to rebuild recreational amenities and arts, culture, and conference facilities that draw tourists and business travelers back to the region in the months and years after a hurricane. (p. 121)

Quartanelli, E. L. 1989. "Disaster Recovery: Comments on the Literature and a Mostly Annotated Bibliography." *Miscellaneous Report #44*. Newark, DE: Disaster Research Center, University of Delaware.

The author makes general observations regarding the concept of disaster recovery. First, we must recognize the disaster in the much larger context of human history. That is, most social units do survive disasters and in doing so have taught us lessons on how to cope with disaster and recover. Second, the concept of disaster recovery has not been well conceptualized. He argues that there is not even agreement on the meaning of the term. The author provides an annotated bibliography that covers much of the literature on the subject of disaster recovery to the date the report was written (1989).

Rubin, Claire B., Saperstein, Martin D., and Barbee, Daniel G. 1985. *Community Recovery from a Major Natural Disaster,* Monograph No. 41, Program on Environment and Behavior, Institute of Behavioral Science, University of Colorado, Boulder.

This study was designed to contribute to the base of knowledge about long-term recovery and to produce an analytical framework for future studies dealing with the recovery process. A case study approach was employed to gather information. A major conclusion of the study was the need for more information on local public decision making during long-term recovery.

The author makes a very cogent point about disaster recovery, she states "It is not necessary to wait until *after* a disaster occurs, however; many steps to improve community capacity for efficient recovery should be taken *before* disaster strikes."

Three elements over which local officials have the most control: leadership, ability to act, and knowledge.

Observed leadership characteristics that facilitate recovery included:

1) Flexible, creative styles of problem solving and decision making;
2) a vision of what the community could and should be like;
3) an ability to attract and motivate competent assistants; and
4) strong links to other decision makers, both in the public and private sectors.

The author states to be able to act effectively and efficiently following a disaster three types of resources are critical:

1) Administrative capability – competent local administrators; a smoothly functioning administrative system, and adequate methods of monitoring and record keeping.

2) Technical knowledge - land use controls, enabling legislation for needed authorities to manage recovery activities, mutual aid agreements and urban development plans and maps.

3) Tangible resources - grant money, money from local taxes, local government supplies and equipment.

Reddy, Swaroop. 1992. *A Study of Long Term Recovery of Three Communities in the Aftermath of Hurricane Hugo*. HRRC Monograph 9B. College Station, TX: Texas A&M University, College of Architecture, Hazard Reduction Recovery Center. 171 pp.

This study of long-term community recovery focuses on determining the factors that explain the successful adoption of hazard mitigation measures during disaster recovery. Many of the following recommendations that came out of this study are practices that the State of Florida is already working on and therefore is in a stronger position for including mitigation during recovery.

- Local institutional involvement is crucial for the adoption of appropriate strategies for the adoption and sustaining of mitigation measures and provision of public good.
- The state and federal governments should provide incentives to the locals for a greater involvement.
- States should mandate all local jurisdictions prone to hazards to develop and adopt a post-disaster recovery plan and provision for mitigation during recovery.
- States should provide incentives to the local governments to adopt recovery plans and get various stakeholders involved in the development of various strategies.
- States should recognize the rights of the local institutions in developing their own strategies in the provision and sustaining of public goods.
- States and local governments should realize that there is a strong linkage between protection of environmental resources and hazard mitigation. Resources such as dunes, wetlands and other natural systems serve to mitigate hazards.
- There is a strong linkage between development management and hazard mitigation. Both use the same vehicles, such as land use and zoning to achieve their goals. Since mitigation measures are not a high priority issue in the day to day lives of homeowners, local communities should use development management as a tool to mitigate hazards. Lower density translates into fewer losses in hazards.

The author also stressed the importance of monitoring and compliance procedures during recovery that involve citizens, stakeholder involvement, and leadership as factors influencing the inclusion of mitigation during rebuilding.

Rubin, Claire B. 1991. Recovery from disaster. Pages 224-259 in *Emergency Management: Principles and Practice for Local Governments*. Washington: International City Management Association, Municipal Management Series.

Although, the information on federal and state programs provided by the author is obviously dated, the observations on the elements of a successful recovery based on research of both successful and unsuccessful communities are still valid. The principle point developed in this chapter is that the recovery period provides an opportunity to influence future growth, but only if local officials are prepared to identify and take advantage of these opportunities. This requires prior planning and adoption of policies that anticipate the potential opportunities.

Research in the early 1980s by Rubin, Saperstein and Barbee showed the local officials in communities with the fastest and better quality recovery found ways to:

1) ensure more productive intergovernmental relationships;
2) compete effectively for scarce resources; and
3) better manage decision-making during the post disaster period. Paramount in this was good intergovernmental relations.

The author emphasizes that many competing influences are present during recovery such as federal and state priorities and the community's demands for action.

Three elements are necessary to ensure an efficient recovery and they are the elements over which local official have the most control:

1) *Personal leadership* in recovery is manifested in five different ways:
   1) Local decision making – local officials must be clear on how they want to recover, who should be involved in the planning and implementation, and what mitigation measures they prefer to adopt.
   2) Priority of intergovernmental relations – local officials must understand the importance of the intergovernmental process and take steps early to ensure cooperative efforts.
   3) Redevelopment of damaged areas – when considering heavily damaged areas, local officials need to take a broad approach viewing them as redevelopment sites with an opportunity to change land use or rebuild with safer structure.
   4) Long-range view – When the top officials had a long-range view of where the community should go it facilitated goal setting for the recovery period, but only where it was done predisaster.
   5) Ability to marshal internal and external resources – The public management skills of local leaders is important. In general, communities that were well run prior to the disaster were more likely to rise to the demands of a disaster.
2) *Ability to Act* and to act decisively has been shown by the Research to depend to a large extent on access to state and federal resources and intergovernmental relations. A community needs resources to act decisively.
3) *Knowing What to Do*, again, is intertwined with resources and prior planning. Local officials who were personally aware of the availability of state and federal resources and knew how to target requests, fared significantly better in the competition for those resources.

Schwab, Jim AICP. August 1998. *Post-Disaster Zoning Opportunities*. Zoning News. American Planning Association, Chicago, Illinois.

The author discusses specific zoning techniques that can be used in the aftermath of natural disasters to redress obvious vulnerabilities in the community as well as to help rebuild a more vibrant and disaster-resistant local economy. The article stresses that an obvious strategy for planners is to use land use policy to steer development away from hazardous areas. Also comprehensive plans should contain policy regarding how non-conforming uses will be handled following a disaster event and through pre-established policies that mandate a review of land uses in disaster-stricken areas. The author also noted that it is important to understand that hazard reduction issues may also serve environmental, recreational, and other purposes.

- North Carolina limits coastal development through setbacks. The state requires that small developments must locate where the distance landward of the first line of vegetation is at least 30 times further back than the annual erosion plan.
- Floating zones. These zones would allow for restricting building or placing special construction requirements that would apply during the rebuilding process if damage occurred there. The

zone "floats" because it has no predefined geographic boundaries but is mapped after the event to coincide with the boundaries of an area that meets the criteria for the zone's establishment.

- Overlay district. Such districts could define new design considerations (e.g., parking access, civic spaces, increased density in downtown development, mix and building types) in areas like central business districts that are applied to post-disaster redevelopment.

Schwab, Jim; ed. 1998. *Planning for Post-Disaster Recovery and Reconstruction*. PAS Report No. 483/484. Chicago, IL: American Planning Association. 346 pp.

This research contained in this Planning Advisory Service Report is one of the most detailed studies addressing land use and hazard mitigation in the post-disaster recovery environment.

- Early decisions can foreclose many opportunities to reshape the patterns of development in a community so as to make it better and safer by reducing vulnerability to future disasters. (p. 7)
- Planners must remember in their deliberations that the citizens of the area have a post-disaster plan in mind even before the planners begin their work and that this is the vision that is competing with any new scenario the planners are prepared to offer. (p. 9)
- Natural disasters occur only when the built environment sits in harm's way and when human lives are affected. (p. 12)
- The staggering, explosive growth of the fastest-growing counties raises an important issue. It is precisely those once sparsely populated counties experiencing explosive growth that are generally least prepared to manage and plan for such growth, often because they have lacked the personnel and in-house experience to do so. (p. 14)
- Mitigation plans are not the same as plans for post-disaster recovery and reconstruction.
    - The primary purpose of mitigation planning is to identify community policies, actions, and tools for implementation over the long term that will result in a reduction of risk and potential for future losses communitywide. Hazard mitigation plans are continually applied to development decisions, and the action elements of a mitigation plan are implemented on an ongoing basis, as resources and politics allow.
    - Post-disaster recovery and reconstruction planning identifies policies, operational strategies, and roles and responsibilities for implementation of hazard mitigation elements within the process of recovery and reconstruction to enable the community to seize opportunities during the rebuilding process to fulfill previously identified goals. These goals would have been articulated through the comprehensive planning process as well as the mitigation planning process, with linkages to all documents. Post-disaster recovery and reconstruction plans could therefore be considered a sub-element of the mitigation plan or comprehensive plan. (p. 16)
- Planners need to borrow a page from modern marketing to offer an alternative vision that attracts people rather than merely discussing new regulations and requirements, which tends to make them lose interest. Environmentalists, business owners, insurance companies, tourist-oriented businesses, public safety advocates and officials, parks and recreation organizations, and even farmers, among others, all have some real or potential stake in helping to build consensus around plans for sustainable post-disaster reconstruction. (p. 18)
- The position of a mayor or other municipal executive in standing behind an existing plan is significantly enhanced when the state government has signaled its own willingness to promote or even require planning for hazard mitigation as part of post-disaster reconstruction. (p. 19)

- Redevelopment agencies typically have the authority to use eminent domain, buy and sell property, relocate residents or businesses, finance operations, and impose regulations which are all useful during post-disaster redevelopment. (p. 27)
- The habitability assessment is guided by local health and safety concerns and thus differs in its criteria from those employed to determine substantial damage under NFIP, which affect the manner of rebuilding. It may be possible that a permit can be granted to rebuild, but it may not be possible to reoccupy the property immediately. (p. 29)
- Many areas already have mutual assistance agreements, such as the one Building Officials Association of Florida uses to provide emergency permitting assistance in the aftermath of a disaster. (p. 30)
- NFIP, process involves the necessary determinations of substantial damaged discussed above, which then affect how structures located within the community's regulatory floodplain are allowed to be rebuilt. The issue of whether they are allowed to be rebuilt at all is significant if they are potential targets for buyouts. (p. 30)
    - Substantial Damage means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value or replacement cost of the structure before the damage occurred. (Note: The cost of the repairs must include all costs necessary to fully repair the structure to its before-damaged condition. (p. 30)
    - Substantial improvement means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. (p. 30)
    - If a building is "substantially damaged" or "substantially improved", it must be brought into compliance with the community's flood damage prevention regulations, including elevating the building to or above the 100-year flood elevation. (p. 30)
- Planners normally interact with transportation officials in the pre-disaster period in the preparation of the transportation element of local comprehensive plans. At this stage, transportation officials can help planners identify alternatives to replacing damaged facilities such as roads or bridges. (p. 31)
- The public works department takes on an essential role at the post-disaster planning table in assuming the responsibility for restoring normal service to any public infrastructure under its control. Utility service, after all, is an important prerequisite to development. (p. 32)
- Strong leadership (mayor or governor) is needed in order to manage the information coming in and out of a community as well as to set priorities and policies following a disaster. (p. 33)
- In discussing the use of federal disaster assistance, it is critical to understand two essential points:
    - Federal assistance is strictly supplemental to state and local resources; and
    - The need for assistance engendered by the disaster must exceed the capacities of both state and local governments to address them. (p. 37)
- The Department of Defense has the lead role in handling public works and engineering needs through the U.S. Army Corps of Engineers. (p. 38)
- If planners have done an adequate pre-disaster job of identifying the opportunities for reconstructing a better and safer community, it then becomes their role to implement their well-laid out plans for doing so. If planners have established effective rapport and coordination with other local, state and federal officials involved in a disaster recovery, they will be more effective in pursuing that goal. (p. 41)
- The driving factors behind [PDRPs] are public safety and economic recovery, the latter being a specific aspect of the public welfare. (p. 43)

- Planners involved in economic development should take great care to try to attract an effective mix of industrial and commercial uses that will enhance the local economy and make best use of its labor pool and other resources. (p. 43)
- Four simple constant factors pervade the PDRP process: goals, strategy, priorities and criteria. (p. 46)
    - Multi-objective strategies can help to expand the resource base available to accomplish mitigation objectives and thus widen the community's vision of what can be accomplished. (p. 46)
- Unexpected contingencies can always arise in the aftermath of a disaster, no matter how good the pre-disaster planning, in large part because no plan developed in the pre-disaster period can anticipate the precise nature of the next disaster. But the plan can provide decision makers with some general guidance as to the policy objectives their decisions must achieve. (p. 47)
- Short-term decisions that have long-term implications:
    - The location of temporary housing, which often becomes more permanent than was originally intended.
    - The siting of temporary business locations, which begin with the aim of allowing local businesses to continue to operate, but may become de facto long-term relocations.
    - The selection of the sites for dumping debris
    - Road closures and road re-openings
    - Bridge closures and re-openings
    - Restoration of critical infrastructure that might otherwise have been suitable for relocation.
    - Permitting the reoccupation of homes that have suffered substantial damage.
- Making effective use of lessons learned often requires a planning department to buy time, which can be done through an ordinance establishing the authority for declaring a temporary building permit moratorium during an emergency. The ordinance should provide for necessary exemptions for building activities that are vital to public health and safety during the recovery period, which may include restoring essential public services or constructing an emergency shelter for those rendered homeless by the disaster, and should specify the duration of its effectiveness. (p. 49)
- A major theme that has emerged from these efforts is the need to include in some way all those who must be heard to ensure the plan's successful implementation. (p. 52)
- The standard procedure is to allow the continuation of the non-conforming use, but not allow its expansion, its conversion to another non-conforming use, or its restoration in the event of its discontinuance or destruction. The goal is to respect the vested rights of the owner of the nonconforming use while gradually or eventually eliminating such uses. (p. 52)
- In the aftermath of a disaster, it is both politically and practically unlikely that the community will want to take an uncompromising stand against allowing the repair and reconstruction of all nonconforming uses. Disasters may pose an opportunity to eliminate nonconforming uses, even to reshape existing patterns of development along lines deemed more desirable, but they also generate enormous pressures from property owners to allow the reestablishment of the existing development pattern, complete with nonconforming buildings and uses. Such pressures result in part from the difficulty of finding enough suitable locations in the proper zoning districts for the relocation of those uses not permitted to be rebuilt. Under such circumstances the community may need to face the question of where and how to compromise and for what reasons. The solution or at least an amelioration of the problem may lie in establishing criteria for allowing the reestablishment of nonconforming uses under disaster-related circumstances. (p. 53)
- Economic recovery is quite likely the most serious issue facing most communities in the post-disaster period, and almost certainly the central issue in every major disaster. (p. 53)

- Economic losses: jobs lost; main source of economy lost; agricultural losses. (p. 53)
- Goals in the Tampa Bay model plan:
    - Restore and enhance residential communities
    - Restore and enhance employment opportunities
    - The provision of public and nonprofit infrastructure and support services. (p. 54)
- The plan for economic recovery should not just include the objective of restoring normal economic activity but that of making it more resistant to such disruptions. This means seizing the opportunity, were it is deemed appropriate, to move the community's most vital businesses out of harm's way. (p. 55) On a small scale, these measures include the relocation of vulnerable businesses from floodplains or the seismic retrofitting of older commercial and industrial facilities. On a larger scale, however, they may involve contingency plans for wholesale planned redevelopment of devastated central business districts, such as occurred in Fillmore, California following the Northridge Earthquake. (p. 56)
- Much of the most effective mitigation consists of nonstructural measures directing land use away from hazardous areas or even seeking simply to influence simple behavior. (p. 57)
- Planners and city officials find themselves in a position to accelerate mitigation in the post-disaster period because a disaster captures people's attention for such matters like nothing else. (p. 62)
- Because only very small communities will likely ever undertake wholesale relocation, planners need to focus on those less drastic but nonetheless significant opportunities that are most likely to present themselves. These opportunities may include rezoning hazard-prone areas to lower densities, designating areas where acquisition of property would be most effective and establishing priorities to guide those purchases, designating target areas for various kinds of retrofitting, and revisiting subdivision controls for hazard-prone areas. (p. 63)
- Although a plan for post-disaster recovery and reconstruction can be conceived and prepared as a stand-alone document, it should ideally be part of a community's comprehensive plan and therefore be integrally linked with other elements of the city's plan. (p. 65)
    - Although post-disaster recovery and reconstruction plans may seem to be self-activating once disaster strikes, experience indicates that the unpredictable timing of disaster can allow them to forgotten by the time the event occurs. (p. 66)
    - The principal point is simply that post-disaster issues must be considered as these other plan elements are prepared, and cross-references within them to the post-disaster element can then make the plan an effective instrument for taking cognizance of both the problems and opportunities for improvement that the disaster itself may engender. (p. 66)
- Neighborhood plans allow an ideal opportunity to sharpen the focus of post-disaster planning. Neighborhoods in hazard-prone areas, especially if they are developed with a high level of citizen participation, can serve well to raise citizen awareness of the need for preparedness and mitigation and of possibilities for more sustainable methods of rebuilding. (p. 67)
- Area and corridor plans present special opportunities to examine specific issues, the latter particularly in the area of transportation. (p. 68)
- Capital Improvements Programming—because such programming involves the scheduling of public improvements over a multi-year period (typically 5 years), it presents a recurring opportunity to consider and include those improvements needed to make the community more disaster resistant. (p. 68)
- It is important to consider the community's contribution of staff time and energy in addition to any specific budgetary allocation it makes to match state and federal grants. (p. 72)

- The more operational emergency management issues may well find a place in an actual post-disaster plan, but that integration needs to be developed through local cooperation between planners and emergency management officials. (p. 75)
- An interdisciplinary reconstruction planning task force is the best way to guide the process of constructing the plan…In relatively small communities, however, the staff may be able to develop the plan with less formalized public and interagency input, but citizen participation in the plan's development will remain essential for building public consensus. (p. 75-76)
    - Two considerations enter the process: whose participation is essential in guaranteeing technical accuracy and thoroughness for the plan and whose participation and support will enhance its political acceptability? (p. 76)
    - Task force representation should include local, state and private sector representatives. Hazard mitigation/planning representatives and emergency management representatives of state and local government should be included.
    - Leadership: person that has the "ability to get people to work together and get things done." This should include an ability to pace the work so that neither members' expectations nor the schedule become unrealistic. (p. 81)
- 5 Points to consider when dealing with time constraints for preparing a post-flood mitigation plan:
    - Dedicate a person to work on it full time.
    - Have frequent (e.g., twice per week) planning committee meetings that involve residents.
    - Do not delay the planning effort in order to obtain detailed data; an adequate plan can be based on generalized information.
    - Enact a temporary moratorium for reconstruction in areas most likely to be acquired.
    - Design the plan to address overall issues and make general recommendations (e.g., recommend that additional studies be conducted before finalizing some projects) (p. 82)
- In order to make hazard mitigation and post-disaster recovery and reconstruction a focus of political action, planners must seize strategic opportunities to raise and maintain the profile of natural hazards as a public issue. (p. 83)
- Post-disaster Recovery and Reconstruction Functions:

  Organization and Authority (mainly pre-disaster)
    - Empower recovery task force
    - Designate lead agency
    - Operations policy
    - Set up disaster accounting systems
    - Coordinate with Emergency Manager
    - Public participation at hearings

  Rehabilitative (pre-disaster prep through short-term recovery)
    - Temporary housing
    - Refuse disposal
    - Damage assessment
    - Restoration of utility services
    - Establish and reconstruction priorities
    - Reoccupancy permits
    - Emergency demolition
    - Loan Processing
    - Toxic cleanup

  Land Use (some start during emergency period but continue through long-term recovery)

- Identify sites for emergency operations
- Identify new lessons
- Compliance with regulations. from lessons
- Replanning of stricken areas
- Reexamine street patterns for access
- Feasibility of emergency evacuation
- Historic preservation
- Implement area building moratoria
- Reevaluation and update of plan

Regional Coordination (throughout recovery timeline)

- Coordination with relief agencies
- Temporary housing
- Financial assistance channels
- Transportation repairs/restoration
- Emergency legislation
- Media contact
- Mutual aid agreements (p. 93)

- The identification of new lessons can serve as a powerful driver for all other land-use elements in the post-disaster plan, most particularly including the process of reevaluating and updating the plan after each disaster and modifying appropriate linkages with the local comprehensive plan as well. (p. 101) It is essential to prepare in the post-disaster plan a means for incorporating those lessons as rapidly as possible into the development regulations that will guide the reconstruction process. (p. 102)
- Using growth-caps as a PDRP tool usually works the best in built-out communities. (p. 105)
- Plans spell out levels of damage that will trigger the imposition of a building moratorium for a specific area of the community…where little or no damage has occurred, there is little or no rationale for restraining development. (p. 106)
- Nature on the rampage shows little respect for humanly designed political boundaries, and the vast proliferation of suburban, township, and small town governmental structures that dot the American landscape has made the need for inter-jurisdictional cooperation even more apparent. (p. 106)
- Two events ought to trigger an automatic update of the plan: the actual occurrence of a disaster, which allows the plan to be tested and revised based its actual successes and failures, and changes in the comprehensive plan requirements that affect the workings of the post-disaster plan. (p. 111)
- Planners should participate on the damage assessment team in order to obtain data specific to planning issues. (p. 113)
- Planning Tools: acquisition; easements; infrastructure policy; floodplain management plan; environmental review; annexation plans; and stormwater management plan. (p. 117)
- Zoning Tools: nonconforming uses; performance standards; special use permits; historic preservation; density controls; floating zones; overlay zones; coastal zone management regulations; floodplain zoning; setbacks; site plan reviews; and height and bulk regulations; wetlands development regulations. (p. 117)
- Subdivision Controls: subdivision regulations; road width/access; water supply; hillside development regulations; and open space requirements. (p. 117)
- Design Controls: trees and vegetation; design review; and building codes. (p. 117)
- Financial Tools: target grant funds; relocation aid; special districts; redevelopment projects; lending policies; and transfer of development rights. (p. 117)
- Management Tools: inter-jurisdictional coordination; geographic information system; geologic investigation; soil stability ratings; and public education. (p. 117)

- Definition of recovery plan: A pre-event plan for post-disaster recovery and reconstruction, composed of policies, plans, implementation actions and designated responsibilities related to expeditious and orderly post-disaster recovery and rebuilding, with an emphasis on mitigation. (p. 132)
- Recovery Plan Content: The recovery plan shall address policies, implementation actions and designated responsibilities for such subjects as business resumption, damage assessment, demolitions, debris removal and storage, expedited repair permitting, fiscal reserves, hazards evaluation, hazard mitigation, historical buildings, illegal buildings and uses, moratorium procedures, nonconforming buildings and uses, rebuilding plans, redevelopment procedures, relation to emergency response plan and comprehensive general plan, restoration of infrastructure, restoration of standard operating procedures, temporary and replacement housing, and such other subjects as may be appropriate to expeditious and wise recovery. (p. 154)
- Recovery Plan Training and Exercises: The [recovery task force] shall organize and conduct periodic training and exercises annually, or more often as necessary, in order to develop, convey and update the contents of the recovery plan. Such training and exercises will be conducted in coordination with similar training and exercises related to the emergency operations plan. (p. 155)
- Takings jurisprudence is a direct outgrowth of the Fifth Amendment to the U.S. Constitution, which prohibits the deprivation of property without just compensation. (p. 170)
    - Traditionally, regulations have been expected to meet three basic tests. They must: advance a legitimate state interest (e.g., flood control, ensuring timely evacuation, minimizing fire dangers); be reasonably necessary to effectuate that purpose; and not deprive the owner of all economically viable use of the land. (p. 171)
- Lessons learned from Hurricane Opal in the Florida Panhandle: this view of the recovery process and the relative lack of a role for planners was due in part to the following factors:
    - The sense of economic urgency created by the impact of the storm on the tourism base of the local economies.
    - The pressure from residents to restore their homes and lives as quickly as possible.
    - The widespread perception that state and local building codes had provided adequate protection from the storm.
    - The relief of local governments from much of the fiscal responsibility for recovery due to the assumption that 100 percent of the costs of disaster relief would be assumed by the federal and state government.
    - The failure of the existing comprehensive plan to anticipate changes in the development patterns of coastal areas.
    - The weakness of the storm-hazard mitigation and recovery provisions of local comprehensive plans.
    - The absence of post-storm recovery plans in most of the communities.
    - The predominant focus of the existing post-storm recovery plans on recovery operations, to the exclusion of substantive policies and implementation devices. (p. 238)
- Post-disaster recovery plans should not be called redevelopment plans because of the implications that such plans should embrace substantially different land use as the principle objective of post-disaster planning and decision making. Instead, post-disaster recovery plans should be a specific application of the relevant portions of the community comprehensive plan, designed to deal with the constraints and opportunities posed by disaster conditions. (p. 238)
- A study conducted of all coastal communities within Florida regarding their fulfillment of the state's requirements for post-storm recovery plans showed that only 65 jurisdictions (of 113 responses) believed that they were required to prepare a post-storm recovery plan. Of this latter group, only 27

stated that they had actually prepared this plan. An inspection of these documents, however, reveals that only 13 are separate recovery plans, over and above the mandated inclusion of hazard mitigation and post-storm policies in the coastal element of the comprehensive plan. (p. 244)

- The important components of a post-disaster recovery plan: policy and project identification; policy and project implementation and decision processes; and operational procedures. (p. 256)
- Examples of appropriate content in the post-disaster plan:
    - Evaluation criteria and decision processes for distinguishing between restoration to original conditions, reconstruction with mitigation, or temporary repair with longer-term redevelopment.
    - Criteria for the use of various growth management devices that lower the intensity of development or remove it from particular locations (e.g., the use of eminent domain, buyouts, or transfers of development rights);
    - Policies for compensating property owners for constraints that may constitute takings;
    - Criteria for the removal of public facilities and infrastructure from hazardous areas and the procedures that are necessary for a transition between immediate service and longer-term redevelopment;
    - Criteria for defining priorities for long-term mitigation and the use of external funds;
    - Criteria and procedures for generating and using community-based disaster funds; and
    - Policies and procedures that govern the long-term recovery phase (e.g. financing of other capital improvements, revisions to other community project and timetables). (p. 257)

Southern California Earthquake Preparedness Project. 1991. *Earthquake Recovery and Reconstruction Planning Guidelines for Local Governments*. Sacramento, CA: Southern California Earthquake Preparedness Project (SCEPP) and California Governor's Office of Emergency Preparedness. 75 pp.

These guidelines outline the context and time periods of earthquake recovery and provide a planning process to be used by local governments. In addition, specific recommended actions for local government to take in preparation for an earthquake and in response to it are listed for rehabilitation and rebuilding, local business recovery, housing displaced persons and families, public facilities and services, and recovery financing. While most of these actions are specific to earthquakes the general planning information can be applied to any disaster and key points from this are below:

Recovery context – 1) damaging local event that affects the immediate area but for which resources from other nearby communities are readily available; or 2) a regional or catastrophic disaster in which the damage is widespread, the community is one of many affected, resources from nearby communities are not readily available and virtually all normal operations are disrupted.

Post-disaster local government environment – The normal time frame for making decisions is compressed (due to public safety concerns and pressures for a quick return to normalcy); workloads increase dramatically; budgets no longer are relevant; problems need immediate attention and, at least, temporary solutions; new and existing community groups mobilize; and intergovernmental relationships change, especially as the community seeks various forms of disaster assistance from groups and agencies with which it may never have had prior contact.

Economics is one major motivational factor in demands for a rapid recovery. Local officials must realize this can easily drive the process.

Objectives of guidelines:

- To provide an overall understanding of earthquake recovery and reconstruction and the key issues that emerge in the process;
- To provide an approach for planning in advance, a jurisdiction's earthquake recovery and reconstruction policies and actions; and
- To recommend specific actions that can be taken before and during the recovery reconstruction to effectively manage the process.

Planning effort:

- The planning effort should be initiated with a clear commitment from the jurisdiction's elected body, a formal action by the body, directing that the planning effort be undertaken, is recommended;
- The planning effort should acknowledge the need to build a consensus as to who has which recovery and reconstruction responsibilities before and after the earthquake occurs:
- The planning effort should involve representatives from key city or county departments or agencies as well as outside organizations that figure to play a role in the recovery and reconstruction process;
- The planning effort must begin with the development of policies that can guide the identification of appropriate recovery and reconstruction actions.

A table of key functions for the recovery plan and the typical agencies to perform those is on pg. 14.

A model planning process graphic is found on pg. 17.
The plan format is recommended to include a policy framework but also specify actions that must be taken in a checklist that can be referred to without constant reference to the larger document.

Variations in impacts means that recovery process must be adaptable to different experiences so that opportunities and constraints can be taken into account.

3 major mitigation choices after a disaster:

- Reducing future structural damage by requiring the use of adequate codes in building repair and reconstruction;
- In areas of concentrated building damage, utilizing the opportunity to redevelop an area to meet the current needs of a community; and
- Reducing future property loss by preventing rebuilding in areas or reducing occupancy of the land to a level where risks are acceptable.

South Florida Regional Planning Council. 2001. *Post disaster redevelopment: Putting the Pieces Together.* Hollywood, FL: The South Florida Regional Planning Council.

This guidance document uses a fictional South Florida city to demonstrate the post-disaster redevelopment data and analysis and policies that should be included in the comprehensive plan of coastal communities. The data and analysis recommended includes a discussion of the city's vulnerability to natural and technological hazards which the guide points out is already available in the Local Mitigation Strategy, and specific vulnerability analyses of the population, private properties, employment, and critical facilities. It also

recommends through the model some post-disaster decision making processes that include forming a recovery team, using moratoriums, and setting priorities for reconstruction. Part II of the model post-disaster redevelopment element actually lists comprehensive plan policies. We will use these model policies in determining how to integrate the PDRP with the comprehensive plan. Appendix I includes very useful background information on regulations and programs at the federal and state level that relate to post-disaster planning as well as legal issues that may arise from implementing redevelopment policies. We will adapt and update this appendix and include it in the statewide PDRP guidance document.

Spangle Associates and Robert Olson Associates, Inc. 1997. The Recovery and Reconstruction Plan of the City of Los Angeles: Evaluation of its Use after the Northridge Earthquake. Portola Valley: California.

This study gives the history of the Los Angeles Recovery and Reconstruction Plan (R & R Plan) and analyzes its use during recovery from the Northridge Earthquake. The R & R plan was drafted over almost two decades during which various departments of the city met and decided on their responsibilities in the aftermath of an earthquake. A year before the Northridge earthquake the plan was complete having been modified based on lessons from the Loma Prieta earthquake in San Francisco, tested during the L.A. riots, and exercised. It was on the agenda to be adopted when the earthquake hit and was adopted several days later. An updated plan was readopted on the Northridge earthquake's first anniversary after they had made changes based on lessons learned. The plan had 8 topic areas, four of which were areas where the city must support recovery and four which were management activities the city must conduct during recovery. Each topic had policies and actions that fell under it. The actions were divided between pre- and post-disaster and also between short-term and long-term recovery activities. Each action was assigned to a city department for lead responsibility and supporting departments were also listed. A Recovery and Reconstruction Division was created as part of the Emergency Operations Organization. The Division was led by the planning department which coordinated other departments input and drafted the plan and the planning director was its chief. The Division was given the responsibility to also lead implementation of the plan after a disaster. During development of the plan the mayor was an active supporter and the planning director believed that planning was critical after a disaster. At the time of the Northridge earthquake there was a new mayor who was probably unaware of the plan's existence and there was a new planning director who wanted to limit his role in recovery. The planning department distributed copies of the plan after the earthquake but only offered assistance if requested. An ad hoc committee was created by the city council, mayor's office and city administrative office to fill the leadership void. The study found through its interviews that virtually no one referred to the plan, however, the departments performed the major responsibilities as were assigned in the plan with little confusion. Their apparent familiarity with the plan from helping to create it and testing it during the riots and through exercises allowed them to know their roles. A major finding of the study is the importance of the planning process and the plan as documentation of that process. Other findings include:

- The assignment of general responsibilities to the departments was useful; the definition of specific post-disaster actions did not help much. Some specific actions did not pertain to the disaster; some were not done as stated; and many of the most important actions taken were not listed at all.
- The lists of pre-event actions were more valuable than the lists of post-event actions. Pre-event actions that were useful in preparing for recovery included draft emergency procedures and contracts, establish mutual aid agreements, learn FEMA accounting requirements, develop information systems, and establish contacts in other agencies with overlapping responsibilities.

- Administrative, policy-making, and operational staff members should all participate in the planning process. All staff members should ideally be aware of their departments role in recovery and how their job responsibilities will change.
- Planning for recovery should be interdisciplinary, interdepartmental, and interjurisdictional. A primary benefit of pre-event planning is establishing contacts needed after a disaster.
- Because the reconstruction was carried out by the building department and community redevelopment agency for the most part without involvement by the planning department opportunities could have been missed. Damage was scattered and didn't warrant replanning of large areas but doesn't mean there weren't some opportunities for modifying densities or improving infrastructure.
- Pre-event reconstruction planning should focus on process since its impossible to predict the actual damage that will occur.
- Recovery functions are logical extensions of normal department functions. The organization for recovery is likely to mirror the jurisdiction's normal organization.
- Overall leadership should come from the top with authority granted to departments to carry out their responsibilities during recovery without bureaucratic constraints.
- Political bodies need to be explicitly incorporated into the decisionmaking process and this need increases with time from the disaster. The ad hoc committee functioned well in this respect but needed more staff support in order to cover more recovery needs.
- The collection, analysis, and dissemination of information are critical post-disaster functions. Collecting the information and dispersing it in the appropriate form to all who need it is a huge task that requires advanced planning and implementation. GIS and handheld units are recommended.
- In the recovery planning process, it is important to plan for methods, costs, and time to keep the public informed of recovery operations.
- Exercising the R & R plan is essential.
- Planning ahead to include mitigation is valuable. An example in LA was the building department having drafted an ordinance ahead of time to require the retrofit of certain buildings. The submitted it to the city council right after the earthquake and it passed because of the "window of opportunity."

Suggestions of what might work better in an R & R plan:

- The plan could be simplified and be more useful. Each department and agency needs a "mission statement" defining its post-disaster functions, protocols for coordinating with other departments and agencies, responsibilities for collecting, analyzing, and disseminating information, and its post-disaster mitigation responsibilities.
- The plan's action list could include only pre-event actions (preparation for R & R and mitigating actions). A checklist of post-disaster responsibilities for each agency could also be included.
- An introduction should state the general philosophy and policies of the jurisdiction regarding recovery and reconstruction.
- Annual review and update of the plan should be conducted.
- A clearer distinction between public and private rebuilding is needed. The primary government role in private rebuilding is to plan and facilitate. Much different from managing the restoration of public facilities.
- After the Northridge earthquake a debate over the best organization for R & R implementation began and was not resolved by the time of this study. Most interviewed in the study agreed that leadership was a problem but didn't know what to do about it. A post-earthquake recovery workshop recommended the following:

- The R&R divison be renamed the R&R Planning Division which would oversee long-term recovery planning, maintain the plan, guide other departments in recovery planning, and recommend recovery policies to the emergency operations board, mayor, and city council.
- The mayor should be the director of recovery aided by a steering committee of departments most involved in a particular disaster.

Spangle, William & Associates, Inc. 1991. Rebuilding After Earthquakes: Lessons from Planners. Portola Valley, California: William Spangle & Associates, Inc.

This summary of lessons was derived from the 1990 International Symposium on Rebuilding After Earthquakes at Stanford University. It was edited for lessons most relevant to U.S. planners and despite it being specific to earthquake recovery there are many lessons that are relevant to disaster recovery from any hazard.

- Neighborhood preservation can aid personal and community recovery.
- Preserving historic and symbolic buildings helps retain community identity.
- Defining urban expansion areas helps – avoiding clearly unsafe ground.
- Temporary housing sites often become permanent. Even if the actual trailers are returned as required by FEMA, land which accommodated them may continue to be used for mobile homes. Such sites need to be carefully chosen with an eye to future uses.
- Affordable housing – the gap will be wider after a disaster. Low-cost housing tends to be concentrated in older buildings and sections of town, it is often disproportionately damaged and displaced persons might not be able to afford rents in repaired or rebuilt buildings.
- Economic conditions before an earthquake shape recovery.
- Businesses affected differently – businesses that are part of chains or large corporations can usually bear the costs of temporary dislocation, repair and rebuilding more readily than local businesses.
- Essential lifelines and services are usually restored very quickly – little involvement of city planners. With both repair and rebuilding, there may be opportunities to modernize and improve the functioning of critical facilities.
- Temporary space may be needed for public services. The resumption of regular school and community activities very important to help families resume normal life. Regencies may need to relocate or provide services from trailers or other temporary structures.
- Planning for rebuilding is a high-speed version of planning. It requires streamlining decision making procedures while at the same time safeguarding public participation and phasing decisions so that planning and rebuilding proceed in tandem. As soon as possible, planners need to determine areas of the community that can be rebuilt under existing plans and regulations and provide for rapid processing of permits for repairs and rebuilding in these areas. In the other more problematic areas, clear procedures and time schedules for planning and making decisions are needed.
- In California, redevelopment powers with tax increment financing have been used in rebuilding after every significant earthquake in the last two decades.
- After a disaster is the time for specific plans; not for regional plans. Ideally, regional planning should be done before the disaster.

- Needs to be realistic – comprehensive evaluation of funding sources and economic studies are essential plan components.
- This is not the time to start over. Even with extreme damage, most rebuilding will be guided by existing plans and regulations.
- Planning for rebuilding is a local function.
- Planners' tasks begin immediately after disaster. Although the main planning effort often does not start until several weeks after, planners may help estimate damages and identify temporary sites for housing, businesses, and public facilities.
- Accurate damage assessments are essential. vulnerability shadies are helpful.
- Most jurisdictions find that some new organization is needed to plan and manage rebuilding. Organization for planning may take many forms. Most organizations encompass both staff work and a process for decision making. staff assigned need relief from other duties to devote full-time to the tasks at hand. Well-defined authority and a clear structure for making decisions. Needs to be accountable for its actions. An effective organization provides for public participation. needs to coordinate with other agencies.
- The economy of the damaged area must be strong enough to attract significant private investment for full recovery to occur. Ideally, a rebuilding plan guides public and private investments.
- Some actions that planners can initiate before an earthquake, not necessarily to reduce damage, but to ease planning for rebuilding the inevitable damaged areas:
    - Have a clear and up-to-date general plan – public consensus about where the community is going.
    - Be sure plans and regulations are consistent.
    - Take particular care in approving land subdivisions. Carefully regulate new development. It is easier to regulate new development to prevent unsafe location of buildings than to prevent the repair or replacement of existing buildings.
    - Participate in regional planning – can help with redundant transportation and utility systems, identifying disposal sites.
    - Create the authority and plans for redevelopment. Even if redevelopment areas need to be expanded or new ones added after the earthquake, it is very helpful to have the basic authority in place.
    - Create and maintain a data base. Identify and evaluate vulnerable areas and hazardous structures. Establish appropriate standards for repairs and rebuilding.
    - Designate temporary housing sites.
    - plan for adequate affordable housing. Experience with relocation assistance, rent subsidies and other state and federal housing programs also helps local governments deal with displaced people.
    - Establish an organization to plan for rebuilding. establishing beforehand a single organization representing all pertinent local agencies to plan for rebuilding. responsibilities for planning and related rebuilding tasks can be pre-assigned to the appropriate staff positions.
    - Prepare and adopt emergency ordinances – responsibilities and the process for making planning decisions
    - Plan how to process building plans and permits – need streamlined procedures

- Prepare staff – like emergency responders, planners need training to prepare them for their roles after a disaster. Use scenarios of likely impacts, define needs and options for responding.
- Learn the federal and state disaster assistance programs – keep up-to-date, how to qualify, the requirements for record keeping.

- Timing considerations:
  - first month is devoted to clearance, providing emergency shelter and very temporary housing and patching up utility service and infrastructure. The basic needs of people are met and community functions are restored at least on an interim basis.
  - rest of the first year demolition and debris removal are completed, temporary housing is provided, temporary business locations are established, buildings and facilities with minor damage are repaired. Permanent repairs of infrastructure and some public facilities may be started. Planning for rebuilding the most heavily damaged areas is an ongoing activity during this time.
  - completing reconstruction of these more problematic areas usually takes a decade or more. length of time depends on many factors including the extent of damage, the vigor of local and national economies, the pace of public and private decision making, and the availability of funding.
  - It appears that many of the parameters of the rebuilt city are determined within one month and that planners need to act quickly during this period to identify and prevent the loss of significant planning opportunities.

Tampa Bay Regional Planning Council. 2006. *Pinellas County Storm Tide Atlas (Vol. 2).* Pinellas Park, FL

This atlas, part of the 2006 update to the *Tampa Bay Region Hurricane Evacuation Study* contains a map series depicting the areas of Pinellas County subject to potential storm surge flooding from the five hurricane categories on the Saffir-Simpson hurricane scale as determined by the National Oceanic and Atmospheric Administration's numerical storm surge model, SLOSH.

Tampa Bay Regional Planning Council. 2006. *Tampa Bay Region Hurricane Evacuation Study 2006.* Pinellas Park, FL

This study contains a wealth of data concerning the multitude of issues that face the Tampa Bay Region when evacuation due to hurricane becomes necessary. The study describes the potential hazards facing the region and the vulnerability of the region to those hazards. There is an analysis of the behavioral patterns of the residents of the region regarding hurricane evacuation based upon a statistically valid survey of citizens. There are also sections on demographics, an analysis of the region's shelters, a transportation analysis to identify the time it takes to evacuate the region for the different categories of hurricanes, and a section outlining a strategy for decision makers regarding evacuation. An annex to the technical report contains detailed information and a variety of maps that specifically relate to the evacuation of Pinellas County.

Tierney, Kathleen J. 1995. Impacts of Recent Disasters on Businesses: The 1993 Midwest Floods and the 1994 Northridge Earthquake. Newark, Delaware: Disaster Research Center, University of Delaware, Preliminary Paper 230.

This study examines impacts to businesses from the 1993 Midwest floods and the 1994 Northridge Earthquake by surveying a large representative sample of businesses from the impacted areas. Key findings that may be applicable to business recovery after all disasters are listed below: (pg. 215-217)

- The survey data indicate that disasters have disparate rather than uniform effects on businesses. Small businesses are especially vulnerable to disaster-related losses and disruption.
- Business properties may escape direct damage and yet suffer extensive disruption as a result of lifeline service outages. Business owners must also take into account sources of business interruption that originate off-site, such as flow of materials and loss of customers.
- Most significant reasons for closing: the need to clean up damage, the loss of electricity, an insufficient number of employees to operate the business, and the need to have the building structurally assessed.
- Relatively few of the businesses had either hazard insurance or business interruption insurance to cover their losses. Of those that did have insurance, a minority actually used it, and generally only a portion of their losses were covered.
- The business owners surveyed also showed a tendency not to use Federal disaster loan assistance and other formally-designated sources of recovery aid. When such sources were used, they typically covered only a portion of the losses the business sustained.
- Business owners generally used their personal savings to offset their losses.

Tucker, John, Todd Trexler, and Jeff Wade. 1996. "Hurricane Mitigation and Post Disaster-Redevelopment: Program Analysis of Flagler County, Florida." ***Florida Coastal Management Program Report to the Flagler County Planning Department.*** **Center for Governmental Responsibility, University of Florida College of Law: Gainesville, FL. (http://www.law.ufl.edu/cgr/publications/hurricane_analysis.pdf Accessed: 2 July 2009)**

Of interest in this document, pp. 60-68 provides an analysis of the Coastal Management Element of the county's comprehensive plan as it relates to post-disaster redevelopment. The authors make a case for a separate document to be created to provide specific direction to a redevelopment planning team. The report identifies language in the Coastal Management Element that would apply to a post-disaster redevelopment plan and provide the linkage between the comprehensive plan and the PDRP. The authors also note weaknesses and inconsistencies in the element and suggest revisions and additions to strengthen both the element and the then- yet-to-be-created PDRP.

U.S. House of Representatives. 2009. House Committee on Homeland Security's Subcommittee on Emergency Communications, Preparedness, and Response. ***FEMA Gulf Coast Rebuilding Efforts: The Path Forward*****. 111th Cong, 1st sess.**

Amy Liu, Deputy Director of the Metropolitan Policy Program, The Brookings Institution, provides her observations on Gulf Coast recovery following Hurricane Katrina and her recommendations on how the federal government can work better with state and local governments in disaster recovery efforts. She has four main points in her testimony.

1. The federal government should "provide tools and flexibilities to states and localities to succeed."
2. The federal government needs to create an independent "office of disaster recovery" during times of major disaster.
3. The federal government should provide rewards to state and local leaders for achieving goals of "sustainability, inclusion, and economic prosperity."
4. The federal government needs to provide "better data and transparency" so that recovery progress can be tracked more closely.

Vale, L., & Campanella, T. (2005). ***The resilient city: How modern cities recover from disaster*****. New York: Oxford University Press.**

Introduction (makes several points that argue for pre-disaster planning):

- Return to normalcy "merely replicates and extends the inequities of the pre-disaster past" pg 12
- Recovery= "ongoing search for a 'new normal'" pg. 12
- Process of post-disaster recovery is "window into the power structure of the society that has been stricken
- Questions on pg 12: Who sets priorities for recovering communities? Needs of low-income residents vs. disrupted business? Who decides what will be rebuilt where? Who gets displaced by new facilities? What roles do non-locals have in setting guidelines for reconstruction? How to overcome stigma of victimized city? Place for visionary architecture and long-range planning?
- "Resilience is always a function of political power." Pg. 19

Conclusion:12 themes

- Narratives of resilience are a political necessity
- Disasters reveal the resilience of governments

  - Pg. 340 "sudden disruption of a disaster causes governements to exercise power quite directly, revealing an often disquieting repertoire of techniques they can and will use when confronted with emergencies." i.e. expropriation of land
- Narratives of resilience are always contested
- Local resilience is linked to national renewal
- Resilience is underwritten by outsiders
- Urban rebuilding symbolizes human resilience
- Remembrance drives resilience
- Resilience benefits from the inertia of prior investment
  - Pg. 346 "the power of property rights to stabilize the forms of cities - or stymie their evolution – cannot be overemphasized."
  - Demand driven by insurance as well as market conditions
- Resilience exploits the power of place
  - Reconnecting familial, social, and religious networks= rebuilding city
  - Attachment to place trumps beginning anew with more efficient or ideal pattern
- Resilience casts opportunism as opportunity
- Resilience, like disaster, is site-specific
- Resilience entails more than rebuilding

Pg. 353, "pre-disaster planning often exposes official priorities to provide disproportionate assistance to certain kinds of people and certain kinds of places, and is very revealing about the relationship between the government and the governed."

Young, Vivian, ed. 2006. *Disaster Planning for Florida's Historic Resources*. Tallahassee, FL: 1000 Friends of Florida.

This document, produced for the Florida Division of Historical Resources and the Division of Emergency Management, stresses the importance of a community's historic resources on its local economy and cultural base. The document explains the process of integrating historic preservation into local emergency management plans, highlights methods of enhancing historic preservation through disaster mitigation and site-specific emergency response plans, and provides case studies from Florida communities.

The purpose of conducting a capacity assessment is to determine the ability of a local jurisdiction to implement a post disaster redevelopment strategy, and to identify potential opportunities for establishing or enhancing specific recovery/redevelopment policies, programs or projects. As in any planning process, it is important to try to establish which goals, objective and/or actions of a plan are feasible, based on an understanding of the organizational capacity of those agencies or departments tasked with their implementation. A capacity assessment helps to determine which recovery/redevelopment actions are practical and likely to be implemented over time given a local government's planning and regulatory framework, level of administrative and technical support, amount of fiscal resources and current political climate.