



**American Planning Association**

*Making Great Communities Happen*



PAS REPORT 576

# PLANNING FOR POST-DISASTER RECOVERY: NEXT GENERATION

James C. Schwab, AICP, Editor



**American Planning Association**

*Making Great Communities Happen*



PAS REPORT 576

# PLANNING FOR POST-DISASTER RECOVERY: NEXT GENERATION

James C. Schwab, AICP, Editor

---

## APA RESEARCH MISSION

APA conducts applied, policy-relevant research that advances the state of the art in planning practice. APA's National Centers for Planning—Green Communities, Hazards Planning, and Planning and Community Health—guide and advance a research directive that addresses important societal issues. APA's research, education, and advocacy programs help planners create communities of lasting value by developing and disseminating information, tools, and applications for built and natural environments.

The Planning Advisory Service is a subscription service offered by the Research Department of the American Planning Association. Four reports are produced each year. Subscribers also receive *PAS Memo* and *PAS QuickNotes*, and they have access to the Inquiry Answer Service and other valuable benefits. To learn more, visit [www.planning.org/pas/index.htm](http://www.planning.org/pas/index.htm).

James M. Drinan, JD, Executive Director; Sylvia Lewis, Director of Publications; David Rouse, AICP, Director of Research.

PAS Reports are produced in the Research Department of APA. Camille Fink, Senior Editor; Lisa Barton, Design Associate.

For missing and damaged print issues, contact Customer Service, American Planning Association, 205 N. Michigan Ave., Suite 1200, Chicago, IL 60601 (312-431-9100 or [customerservice@planning.org](mailto:customerservice@planning.org)) within 90 days of the publication date. Include the name of the publication, year, volume, and issue number or month, and your name, mailing address, and membership number, if applicable.

© December 2014 by the American Planning Association  
APA's publications office is at 205 N. Michigan Ave., Suite 1200, Chicago, IL 60601-5927.  
APA's headquarters office is at 1030 15th St., NW, Suite 750 West, Washington, DC 20005-1503.  
E-mail: [pasreports@planning.org](mailto:pasreports@planning.org)

---

## ABOUT THE AUTHORS

**Allison Boyd, AICP**, specializes in planning for disaster resiliency and community sustainability, and she managed the Post-Disaster Redevelopment Planning Initiative in Florida. Her areas of expertise include comprehensive and environmental planning, climate change adaptation, natural hazards mitigation, and emergency management.

**J. Barry Hokanson, AICP**, has more than 45 years of urban planning experience at agencies in California, Texas, Kansas, Iowa, and Illinois. He most recently has worked as a subcontractor in the Federal Emergency Management Agency's community recovery program for Louisiana, Texas, Tennessee, and New York.

**Laurie A. Johnson, AICP**, is an internationally recognized urban planner specializing in disaster recovery and catastrophe risk management. In 2006 she was a lead author of the Unified New Orleans Plan for recovery following Hurricane Katrina and coauthored *Clear as Mud: Planning for the Rebuilding of New Orleans*.

**James C. Schwab, AICP**, served as the project manager and principal investigator. He is the manager of the Hazards Planning Center at the American Planning Association and co-editor of *Zoning Practice*.

**Kenneth C. Topping, FAICP**, is former Los Angeles city planning director and a lecturer in the City & Regional Planning Department at Cal Poly, San Luis Obispo. He has worked on disaster resilience issues nationally and internationally, including advisory work after Hurricane Katrina, Hurricane Sandy, and the Kobe earthquake.

---

## ON THE COVER

View of Jamaica Bay, Queens. (Used with permission of the New York City Department of City Planning. All rights reserved.)

**TABLE OF CONTENTS**

**FOREWORD** 4

**EXECUTIVE SUMMARY** 6

**CHAPTER 1 THE VISION OF A RESILIENT COMMUNITY** 16

James C. Schwab

Vision of a Resilient Community: Where Next? 20

In This PAS Report 22

**CHAPTER 2 ANTICIPATING DISRUPTION** 24

J. Barry Hokanson and James C. Schwab

State Roles in Recovery Planning 26

Resilient Management 27

The Planner’s Role 33

Plans for Recovery after Disaster 35

Conclusion 40

**CHAPTER 3 DISASTER RECOVERY PLANNING: EXPECTATIONS VERSUS REALITY** 42

Kenneth G. Topping and James C. Schwab

Components of Disaster Management 43

How Pre-Event Planning Can Matter: Some Case Examples 45

The New Dynamics of Organizational Relationships 47

Where Anticipation and Reality Part Company 50

Understanding the Scale and Spectrum of Damages 51

Institutional Learning after Disasters 55

Conclusion 59

**CHAPTER 4 THE FEDERAL FRAMEWORK FOR DISASTER RECOVERY** 60

Kenneth C. Topping and James C. Schwab

Major Federal Legislation Defining Disaster Policy 61

Federal Disaster Administrative Directives 65

Evolution of Federal Administrative Policy 66

Caveat for Planners 71

Conclusion 71

**CHAPTER 5 LONG-TERM RECOVERY PLANNING: GOALS AND POLICIES** 72

Allison Boyd

Policy Areas of Long-Term Recovery Planning 74

Land-Use and Reconstruction Standards 76

Infrastructure and Transportation Restoration 80

Housing Recovery 82

Economic Redevelopment 84

Environmental Restoration 87

Health and Social Recovery 88

Conclusion 90

**CHAPTER 6** LONG-TERM RECOVERY PLANNING: THE PROCESS OF PLANNING 92

Laurie A. Johnson

- The Recovery Planning Process 93
- Planning Before Disaster Strikes 98
- Planning after Disaster Strikes 101
- Ensuring Recovery Planning Buy-In and Adoption 104
- Making It All Work Together 115
- Conclusion 118

**CHAPTER 7** PLAN IMPLEMENTATION: THE LONG, HARD ROAD OF RECOVERY 120

Laurie A. Johnson

- Gearing Up for Implementation 121
- Managing Recovery Implementation 126
- Financing Recovery 137
- Key Sources of Disaster Recovery Funds 139
- Implementation Strategies, Milestones, and Timetables 149
- Legal Considerations in Recovery Implementation 151
- Metrics of Recovery: Measuring Success 155
- Conclusion 157

**CHAPTER 8** NEXT STEPS IN CREATING RESILIENT COMMUNITIES 158

James C. Schwab

- Adaptive Thinking 160
- Sustainability: The Future of Planning for Resilience 163
- Environmental Change 164
- Community Vitality 166
- Bringing It All Together 168

**REFERENCES** 169

**APPENDIX A** MODEL PRE-EVENT RECOVERY ORDINANCE 177

Kenneth C. Topping

**APPENDIX B** DISASTER LAWS, EMERGENCY PROVISIONS, AND FEDERAL DISASTER MANAGEMENT  
ADMINISTRATIVE DIRECTIVES 195

**ACKNOWLEDGEMENTS** 197

## TABLE OF CONTENTS

### FOREWORD 4

### EXECUTIVE SUMMARY 6

### CHAPTER 1 THE VISION OF A RESILIENT COMMUNITY 16

James C. Schwab

Vision of a Resilient Community: Where Next? 20

In This PAS Report 22

### CHAPTER 2 ANTICIPATING DISRUPTION 24

J. Barry Hokanson and James C. Schwab

State Roles in Recovery Planning 26

Resilient Management 27

The Planner's Role 33

Plans for Recovery after Disaster 35

Conclusion 40

### CHAPTER 3 DISASTER RECOVERY PLANNING: EXPECTATIONS VERSUS REALITY 42

Kenneth C. Topping and James C. Schwab

Components of Disaster Management 43

How Pre-Event Planning Can Matter: Some Case Examples 45

The New Dynamics of Organizational Relationships 47

Where Anticipation and Reality Part Company 50

Understanding the Scale and Spectrum of Damages 51

Institutional Learning after Disasters 55

Conclusion 59

### CHAPTER 4 THE FEDERAL FRAMEWORK FOR DISASTER RECOVERY 60

Kenneth C. Topping and James C. Schwab

Major Federal Legislation Defining Disaster Policy 61

Federal Disaster Administrative Directives 65

Evolution of Federal Administrative Policy 66

Caveat for Planners 71

Conclusion 71

### CHAPTER 5 LONG-TERM RECOVERY PLANNING: GOALS AND POLICIES 72

Allison Boyd

Policy Areas of Long-Term Recovery Planning 74

Land-Use and Reconstruction Standards 76

Infrastructure and Transportation Restoration 80

Housing Recovery 82

Economic Redevelopment 84

Environmental Restoration 87

Health and Social Recovery 88

Conclusion 90

**CHAPTER 6 LONG-TERM RECOVERY PLANNING: THE PROCESS OF PLANNING 92**

Laurie A. Johnson

- The Recovery Planning Process 93
- Planning Before Disaster Strikes 98
- Planning after Disaster Strikes 101
- Ensuring Recovery Planning Buy-In and Adoption 104
- Making It All Work Together 115
- Conclusion 118

**CHAPTER 7 PLAN IMPLEMENTATION: THE LONG, HARD ROAD OF RECOVERY 120**

Laurie A. Johnson

- Gearing Up for Implementation 121
- Managing Recovery Implementation 126
- Financing Recovery 137
- Key Sources of Disaster Recovery Funds 139
- Implementation Strategies, Milestones, and Timetables 149
- Legal Considerations in Recovery Implementation 151
- Metrics of Recovery: Measuring Success 155
- Conclusion 157

**CHAPTER 8 NEXT STEPS IN CREATING RESILIENT COMMUNITIES 158**

James C. Schwab

- Adaptive Thinking 160
- Sustainability: The Future of Planning for Resilience 163
- Environmental Change 164
- Community Vitality 166
- Bringing It All Together 168

**REFERENCES 169**

**APPENDIX A MODEL PRE-EVENT RECOVERY ORDINANCE 177**

Kenneth C. Topping

**APPENDIX B DISASTER LAWS, EMERGENCY PROVISIONS, AND FEDERAL DISASTER MANAGEMENT ADMINISTRATIVE DIRECTIVES 195**

**ACKNOWLEDGEMENTS 197**



## FOREWORD

Wherever disaster may strike, the Federal Emergency Management Agency (FEMA) is committed to supporting our fellow citizens in healing their communities and moving forward on the road to recovery. As part of that mission, we coordinate to ensure that communities have the tools they need to make informed decisions to reduce their risks and vulnerabilities. Effective pre-disaster planning is an important process that allows a comprehensive and integrated understanding of community objectives and connects community plans that guide post-disaster decisions and investments.

A key element of our national approach to disaster recovery is embodied in the National Disaster Recovery Framework. The Recovery Framework acknowledges that recovery depends heavily on local planning, local leadership, and the whole community of stakeholders who support recovery. It emphasizes principles of sustainability, resilience, and mitigation as integral to successful recovery outcomes. In addition, the National Mitigation Framework establishes a common platform for coordinating and addressing how the nation manages the reduction of risk on a national scale. Mitigation is not far removed from recovery, and it serves as the thread that permeates emergency management. By taking active steps to lessen the impact of disasters before they occur, mitigation reduces the loss of life and property endured by affected communities, and it supports more rapid recovery. This report represents a partnership between FEMA and the American Planning Association (APA) to provide valuable guidance to assist communities in strengthening their approaches to prepare for and implement resilient disaster recovery which will lead to reducing disaster risks on a national scale.

If a community is planning for the future, development and redevelopment must incorporate reduction of future risks. In particular, stressors including climate change and extreme weather necessitate the need to plan smarter. We need to ensure that we do not build or rebuild in harm's way where future risks can be anticipated. Communities also need to be ready to act with recovery plans in hand and to apply their mitigation and climate adaptation policies in the fast-moving post-disaster period. The rapid change brought on by a disaster requires an equally rapid and adaptable post-disaster recovery process so communities are able to take advantage of opportunities to rebuild smarter by integrating mitigation into redevelopment.

The issues that communities must address vary across states, such as lack of adequate replacement housing in one place and access to health services in another. At a fundamental level, disaster recovery requires the balancing of practical matters with broad policy opportunities. For example, understanding the range of federal assistance and how funding can be used or combined to meet needs and managing project development are necessary skills that should only be executed with the community's broader long-term recovery goals in mind. To effectively recover, state and local communities must have the ability to manage their needs. The capacity may not currently exist, but there needs to be a foundation to build capabilities. Pre-disaster recovery and mitigation planning, when integrated with other local planning efforts, aligns community priorities, sets roles and expectations, and enables rapid implementation.

Established building codes that provide safeguards for people at home, at school, and in the workplace are a type of pre-disaster capability. However, despite the strength of the International Codes, adoption of model codes can be uneven across and within states. Post-disaster assessments have shown a direct relationship between building failures and the codes adopted, the resources directed toward implementation and enforcement, and the services available to support those codes. The most effective codes are those that are current and widely adopted and enforced. Communities with a recovery plan can be prepared to rapidly act and implement adopted codes or adapt to changed circumstances to seize on the opportunities and challenges during the recovery period.

Several pieces of legislation have been passed recently that will alter the way FEMA administers its programs, and these changes have direct effects on communities and individuals as they understand their hazard risks and make decisions about how to plan for, respond to, recover from, and mitigate those risks. First, in January 2013, Congress passed the Sandy Recovery Improvement Act (SRIA), authorizing several significant changes to the way FEMA delivers disaster assistance. The SRIA's various provisions are intended to improve the efficacy and availability of FEMA disaster assistance and make the most cost-effective use of taxpayer dollars. Second, the Biggert-Waters Flood Insurance Reform Act (BW-12) and the corresponding Homeowner Flood Insurance Affordability Act of 2014 (HFIAA) were signed into law. This legislation is intended to stabilize the National Flood Insurance Program financially. In addition, FEMA is now directed by Congress to also look at future conditions, such as weather patterns, erosion, development, and other key factors, and incorporate them into our risk analysis.

At FEMA, we seek constant improvement to better support America's disaster survivors, citizens, first responders, and communities. As leaders at all levels implement the Recovery Framework and the Mitigation Framework, we will learn new lessons. We will be more effective and efficient in supporting communities with the assistance, flexibility, and incentives necessary to speed recovery, reduce risks to future events, and become more resilient.

I acknowledge the contributions of David Miller, FEMA's Associate Administrator for the Federal Insurance and Mitigation Administration. While serving as the Administrator of the Iowa Homeland Security and Emergency Management Division, Dave partnered with APA to begin shaping the scope of this report. Dave has shared his experiences and lessons learned from his years with the State of Iowa, where he oversaw recovery for 11 presidentially declared major disasters. His valuable input is clearly demonstrated in the real-world practical advice in this report.

Finally, FEMA thanks the APA for its continued partnership. APA's research and education on natural hazards mitigation and disaster recovery target a critical profession that is traditionally not associated with emergency management. The more than 45,000 community planners and local officials that make up APA's membership are among those that have the leadership, partnering, and planning capabilities necessary to foster resilience from future disasters.

A handwritten signature in black ink, appearing to read 'W. Craig Fugate', with a long horizontal flourish extending to the right.

W. Craig Fugate, Administrator  
Federal Emergency Management Agency

## EXECUTIVE SUMMARY

### OVERVIEW: THE VISION OF A RESILIENT COMMUNITY

Many are called, but few are well-trained. That may well sum up the state of affairs for most planners facing a disaster in their community for the first time, which underscores why it is essential for a professional organization like the American Planning Association (APA) to undertake the role of preparing them for the task of managing post-disaster recovery. Most learn on the job when disaster strikes. For that reason, APA developed and prepared a PAS Report in 1998, *Planning for Post-Disaster Recovery and Reconstruction*, and it is now releasing this second, updated version.

But times have changed. Today there is a significant body of planning literature addressing post-disaster recovery. So many laws, programs, and conditions have changed, however, that there is still considerable need among planners for this new report. In fact, APA undertook an extensive needs assessment for the Federal Emergency Management Agency (FEMA) to demonstrate the value of this undertaking. One thing learned in the interim is that communities are subject to major catastrophic events that are, quite literally, game changers that alter the understanding both of the extent of the vulnerabilities of communities and the magnitude of the events that are possible. Events such as Hurricane Katrina and the Tohoku earthquake in Japan have demonstrated that the best plans may not fully envision the magnitude of what is possible. Equally important, federal disaster officials and local planners have had to grapple with the implications of mitigating flood hazards in densely developed waterfront neighborhoods. There is also growing appreciation of the value of green infrastructure in helping to mitigate coastal hazards, an appreciation that is being reflected in changes in federal policy priorities.

While preparing this report, the APA team had the opportunity to learn from direct involvement in the recovery from Hurricane Sandy in New York and New Jersey, where APA presented a series of training workshops on recovery planning in April 2013. This was just a small part of the overall level of effort by federal, state, and local planners in the region, but it helped the project team gain perspective on the event and what followed. One factor that became clear in the report of the Hurricane Sandy Rebuilding Task Force headed by Shaun Donovan, then secretary of Housing and Urban Development, was that there was a much greater emphasis on concepts of resilience than in any previous disaster. That emphasis included explicit recognition of the long-term impacts of climate change. Considerably greater emphasis was also placed on the development of green in-

frastructure as part of an overall resilience strategy than had been the case before Sandy. At the same time, Sandy exposed operational challenges for the federal government and explicitly for the new National Disaster Recovery Framework.

These new lessons do not obliterate ongoing challenges that predated Sandy. These include:

- the need to accept the inherent complexity of post-disaster recovery; and
- the need for communities to take local ownership of their situation and gain a full understanding of the relationships among federal, state, and local entities.

Still, amid all the frustrations and sorrows of post-disaster recovery, there are opportunities. The most resilient communities are those with the civic mindset to seize on those opportunities to create new visions for the future.

What is resilience? According to the National Academy of Sciences, resilience is *the ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events*. Part of the purpose of this report is to make clear that one effective way in which communities can advance public health, safety, and welfare is to think and plan in advance for their foreseeable recovery needs following a disaster, in addition to taking appropriate steps to mitigate hazards before a disaster. Opportunities to advance community resilience may arise during long-term recovery from a disaster that may not arise at any other time. Being prepared to optimize those opportunities is one purpose of a resilient community.

It is important to embed the concept of resilience within the wider framework of sustainability. It is equally important that sustainability incorporate the concept of resilience. Resilience allows a community to respond to and recover effectively from specific events; sustainability is a frame of reference that aims to preserve for future generations the resources and opportunities that exist for current generations.

## ANTICIPATING DISRUPTION

Planning is by its very nature an optimistic enterprise, but life can be messy. Setbacks of all sorts happen to individuals, their neighborhoods, whole communities, and even nations. In this context a community's willingness to examine its hazards and to anticipate and plan for potential disasters becomes important. Unless communities incorporate an awareness of their hazards into their long-term planning, they may not confront the fact that land-use choices greatly affect the outcomes with their resulting losses of lives and property. Planning for setbacks is an essential ingredient of resilience. What distinguishes disasters from most other setbacks in a community is the speed of their occurrence and the compressed time frame in which recovery must occur. Thus, the important focus is on the problem of anticipating disruption by disasters and planning to minimize their detrimental impacts.

### State Roles in Recovery Planning

States control the statutory framework for local planning and zoning authorities. This has some bearing on the state role in influencing local planning for post-disaster recovery, but so do emergency management policies. The most common feature of states is that their planning institutions are not set up in a fashion that is parallel to those in cities, counties, and regions. Often there is no state planning office or function, although states perform numerous other functions that have a direct bearing on planning, and particularly on hazard identification and post-disaster recovery. States also act as agents of numerous federal programs, often acting with authority delegated to them from federal agencies.

### Resilient Management

The most essential element of resilient management may be a purely human one: the courage to make tough decisions. Without that, all else may fail. But it is also important to perceive the city as a system of systems, within which resilience can be embodied at a number of levels. Resilient systems have identifiable characteristics that include diversity, redundancy, decentralization, transparency, collaboration, grace in failure, flexibility, and foresight.

Risk management, closely related to resilient management, can be achieved through cost-benefit analysis. The Governmental Finance Officers Association has established a framework for such analysis to help ensure that communities have the resources to overcome foreseeable setbacks.

Risk management also occurs through mitigation, which in part is a matter of properly investing resources to achieve risk reduction, for instance, by removing homes from the floodplain and thus reducing the amount of vulnerable property in need of protection. The challenge with hazard mitigation as a risk reduction tool lies in incorporating it into the rest of the planning process rather than isolating it. It is equally important for a community to understand how to incorporate mitigation into the recovery planning process.

It is important to build resilience capacity in communities. This capacity is most likely to manifest itself in greater flexibility and ability to adapt.

### The Planner's Role

In some states, the planner's role is made clear through state requirements to include some type of hazards-related element in the local comprehensive plan. California provides one example, where state law mandates the inclusion of a "safety" element, which has evolved to cover numerous hazards, such as floods and earthquakes. California is one of at least ten states with mandates or prescriptions for such elements.

Even without such prescriptive requirements, planners have skill sets that are vital in designing processes for public participation in hazards planning, including plans for post-disaster recovery. They are or can become familiar with specific kinds of scenario planning and visualization software that can help make public participation more meaningful. The array of these tools is almost certain to grow in the future.

### Plans for Recovery

There are distinct advantages for communities that take the trouble to plan for and assess their recovery needs ahead of an actual event. These can be summarized as:

- building a local culture of disaster awareness
- providing a focus for pre-disaster exercises
- establishing clear lines of responsibility
- considering and reviewing financial needs
- assessing overall preparedness stance

This report offers a three-part typology of recovery plans, based on their focus and whether they are prepared prior to or after disasters:

1. Operational (limited pre-disaster)
2. Policy (pre-disaster)
3. Recovery (post-disaster)

The first is primarily rooted in a focus on short-term recovery and emergency management needs. The second, based on recent Florida practice, takes a much broader approach in attempting to establish the organizational framework for managing recovery and creating certain policies that will guide redevelopment decisions after a disaster. Organization and policy seem to be the primary areas of good practice in pre-disaster planning. Recovery plans developed after a disaster, ideally, will then focus on the physical and urban design needs precipitated by a documented pattern of damages known after the disaster has occurred.

## **DISASTER RECOVERY PLANNING: EXPECTATIONS VERSUS REALITY**

Disasters can provide valuable planning lessons and are increasingly likely to become part of planners' experiences during their careers. Learning from others may ease the stress of learning on the job, but reality will often depart from what can be anticipated. It is thus important to review the ground rules of disaster management as they apply to planning.

### **Components of Disaster Management**

The traditional model of the disaster management cycle involves four phases: mitigation, preparedness, response, and recovery. All are interconnected, but mitigation can help reduce requirements of the others. Moreover, for best outcomes, mitigation and recovery should be integrated through effective planning because they reinforce each other. If possible, they should both also happen before a disaster, as well as after. Federal law provides much of the funding after disasters, but it is important that a community develop a more long-term perspective. This point is illustrated by case examples from Florida of the value of pre-event planning for recovery.

### **New Dynamics of Organizational Relationships**

One salient feature of such plans is the emphasis on coordination and integration among city departments involved in recovery. APA has previously explored the same theme with regard to mitigation, but it becomes even more important in recovery because of the compressed time frame within which planners must act, a point reinforced by the case study of Cedar Rapids, Iowa, following the 2008 floods. Equally important are the city's relationships with relevant state and federal agencies, which are best established in a

pre-disaster time frame. These relationships are essential in allowing a community to take charge of its own recovery.

### **Where Anticipation and Reality Part Company**

There are fundamentally two ways of trying to anticipate the issues a community is likely to face in recovering from a major disaster. One is to focus on the probabilities of events of various types and magnitudes (probabilistic risk assessment) and to concentrate on the most likely scenarios. The other is to focus on the worst possible case, or worst-case scenario, and try to imagine what precautions would be necessary to minimize its impact. Each has its limitations. Increasingly, planners have access to sophisticated software tools to facilitate such analyses.

### **Understanding the Scale and Spectrum of Damages**

A key starting point in recovery planning is the ability to characterize a disaster event in terms that directly identify the severity and extent of damage, death, and destruction in order to determine processes, general levels of effort, sources of financing, and likely duration of recovery. With the help of an analytical matrix, planners can identify differences between "restoration" and "redevelopment" in recovery, with the latter following disasters involving substantial destruction of physical structures and replacement of existing buildings. The classification system also designates differences in scale ranging from neighborhoods to entire regions. These differences indicate major differences in recovery strategy. In addition, there can be differences between urban and rural settings, wealth and poverty, and other factors.

### **Institutional Learning after Disasters**

Disasters afford opportunities for communities to learn from their experiences and those of others. Those opportunities can take a number of forms related to all elements of the disaster management cycle and ideally will lead to the creation of a sustainable recovery management framework, including a recovery management organization and a recovery plan. A number of balancing considerations need to be part of this learning process.

## **FEDERAL FRAMEWORK OF DISASTER RECOVERY**

It is important for planners to learn about the national system of disaster management before a disaster happens in their own communities. A number of key federal laws directly address

disaster management, as do secondary laws largely administered by agencies other than FEMA that have some bearing on disaster assistance. Such agencies include the Small Business Administration, the U.S. Department of Transportation, and the U.S. Department of Housing and Urban Development, whose Community Development Block Grants for Disaster Recovery are playing an increasingly prominent role in recent recoveries.

The two dominant laws involving FEMA are the National Flood Insurance Act and the Stafford Act. Each has engendered numerous reforms and revisions over the decades following their original enactment. What is important for planners is not to assume that it is solely the job of the local emergency manager to understand how all this works. Planners who know ahead of time what to expect and what to do when a disaster strikes can make a real difference during recovery. They are far better positioned to assist the community in accomplishing a faster, more complete recovery than those who are initially unaware of this system and must learn on the job after a crisis has struck.

It is also important to be aware of the evolution of federal administrative policy related to disasters and how that has shaped the current structure of the National Preparedness Goal, under which the National Disaster Recovery Framework is now one of five mission areas. It is also important to recognize that there are wide differences in planning capabilities among states and communities, resulting in inevitable tensions within the federal system, including unreasonable demands and resistance to new ideas. In the end, recovery planning demands patience and a steady vision, as well as a willingness to engage meaningfully with the public.

## LONG-TERM RECOVERY PLANNING: GOALS AND POLICIES

The fundamental purpose of planning for disaster recovery is to improve the quality and efficiency of the community's recovery over that of an ad hoc approach. A local recovery plan provides a basis for requesting resources in a coordinated manner as well as a demonstration of capability to maintain local control. It also provides an opportunity for public input. Through planning, a community's stakeholders can determine their vision for the recovered community, identify obstacles and opportunities they may encounter in reaching that future, and measure their progress in achieving recovery as they defined it.

## Goals

The following three overarching goals inform almost all recovery plans.

### Increase the Speed of Recovery

The speed of recovery is essential to many businesses reopening, the amount of population loss the community might experience, and the psychological well-being of residents. This does not mean a community cannot also acknowledge the downfalls of rapid restoration in situations where redevelopment should be thoughtfully considered for its long-term repercussions on sustainability.

### Effective Use of Resources

The recovery plan can help by providing implementation organization as well as a guiding policy framework for focusing and prioritizing local resources. A community should not think only of FEMA and disaster-specific sources of funding but look at bigger community goals beyond the disaster situation. The National Disaster Recovery Framework also embraces the idea of effectively using various sources of assistance, and the expanded organization of the agencies associated with the Framework's Recovery Support Functions should assist in better coordination of resources less traditionally used in disasters in the future.

### Increased Opportunity for Community Betterment

Ideally, the community will want to emerge from the disaster as a more resilient and sustainable place as a result of recovery programs. This goal can also identify other aspects of whole community recovery, such as seeking sustainable industries as part of economic recovery initiatives or assisting community organizations to increase the resilience of socially vulnerable populations.

Together, these three goals will in most cases form the foundation of more community-specific recovery goals whether a community creates its recovery plan pre- or post-disaster.

## Policy Areas

Long-term recovery planning is similar to comprehensive planning in the breadth of topics that must be addressed, such as land use, infrastructure, and housing. Many different aspects of a community may have to be simultaneously restored or redeveloped since each is dependent upon the others. While it is not necessary to follow the grouping of six policy areas outlined in this report, which

mirror those in the National Disaster Recovery Framework, they may be helpful. All, however, should somehow revolve around a seventh concern, hazard mitigation, which should occupy a central role in any recovery plan. The following discussion touches on the importance of each policy area.

### **Post-Disaster Hazard Mitigation**

Including hazard mitigation in recovery projects will in most cases require additional time for planning; communities that have developed recovery plans before a disaster will be at an advantage in seizing opportunities for hazard mitigation during reconstruction. Communities with local hazard mitigation plans that have examined post-disaster opportunities for mitigation will also reap benefits.

### **Land-Use and Reconstruction Standards**

Addressing land-use and reconstruction standards will almost certainly be the most controversial component of the recovery planning process, but it could also be the most substantial in working towards a goal of community betterment. Land-use policy considerations are typically complex and include several key considerations with regard to recovery, such as:

- timing of reconstruction
- quality of reconstruction
- redevelopment patterns

This short list, however, is far from exhaustive and does not include various special considerations such as treatment of historic structures, sustainable building practices, and placemaking goals, among others.

### **Infrastructure and Transportation Restoration**

While these issues are often addressed in response and short-term recovery plans, those mostly deal with stopgaps rather than long-term considerations relevant to larger disasters. These include:

- short-term restoration decisions that may impact long-term community recovery
- regional interdependencies
- opportunities to improve infrastructure and transportation services
- post-disaster changes in service demands or locations

### **Housing Recovery**

Providing emergency sheltering and safe temporary housing is commonly the first recovery priority after a disaster and it is therefore not a coincidence that it is one of the most examined aspects of post-disaster recovery planning. However, returning citizens to permanent housing is an underpinning for the success of whole community disaster recovery. Various policy considerations include:

- temporary or interim housing
- transitioning to permanent, affordable housing

### **Economic Redevelopment**

The return of jobs, tourism, and other indicators of economic health are intertwined with housing recovery, infrastructure restoration, and health and social service provision. Sustainable and resilient economic recovery planning should focus not only on the rebuilding of damaged structures but also issues like the resumption of business activity and retention of the local workforce. This should be done in a pre-disaster mode. Considerations include:

- business resumption
- workforce retention
- advancement of sustainable economic development goals
- image, rebranding, and tourism

### **Environmental Restoration**

Environmental restoration is often not a high-priority goal after a natural disaster due to more immediate needs. Degraded ecosystem services, though, can impact the health, economy, quality of life, and hazard protection levels of the recovering community. Precautions should be included in recovery planning. These include:

- contamination and post-disaster pollution
- habitat restoration
- new parks and conservation properties

### **Health and Social Recovery**

A key determinant of successful community recovery is the level of social vulnerability that exists and the extent to which health and social services are effectively provided. Access to health care, lifelines, and social capital are all important factors. Considerations include:

- public health during recovery
- reopening schools and childcare programs
- increased and extended social service provision
- quality of life and healthy, safe communities

Resilience is best accommodated by communities being proactive and pre-planning for disaster. It requires the integration of ideas across the functional areas of concern.

## LONG-TERM RECOVERY PLANNING: THE PROCESS OF PLANNING

An overall framework for the recovery planning process lays out key steps and stages as well as describing the benefits and challenges involved in undertaking recovery planning both before and after disaster strikes. Several crucial aspects of the planning process deserve special attention: leadership and collaboration, public input, and “visioning.”

### Recovery Planning Process

There are few regulatory triggers for the decision to prepare a pre- or post-event recovery plan. Recovery planning has largely been a function performed by communities affected by significant disasters but has also been undertaken, in far fewer instances, by communities that faced significant and imminent threats. However, federal and state initiatives have made these efforts more frequent in recent years. The National Disaster Recovery Framework is likely to further such efforts. Factors in the recovery planning process that should be considered carefully include:

- organizing public participation
- conducting research and analysis
- facilitating input
- developing and adopting the plan
- implementing the plan

### Planning before Disaster Strikes

Pre-disaster recovery planning can help a community to accelerate the recovery process once disaster strikes by pre-defining roles and responsibilities and, through the planning process itself, building the institutional and community awareness and capacity to engage in recovery efforts. Pre-disaster recovery plans, along with other plans, can also provide a strong foundation for post-disaster reconstruction planning and implementation. Disaster-affected communities with well-established planning functions have tended to be the most effective at managing reconstruction. Pre-disaster plans are also important in recovery because they represent consensus policies about the future and demonstrate that the community has an active planning process, active

channels of communication, and strong planning tools and documents.

### Planning after Disaster Strikes

While pre-disaster planning is recommended, it will not always happen. There are nonetheless some opportunities in post-disaster recovery planning that have resulted in success. The challenge is that all previous and new plans following disasters will compete with the image in residents’ minds of the city as it existed before disaster struck. Extensive damage may render such rebuilding impossible. Successful disaster recovery plans and processes find a way to effectively attain a baseline of community recovery while also moving the community’s vision forward in adapting to the “new normal” and taking advantage of post-disaster opportunities to transform and thrive. The post-disaster period can be a time to promote more sustainable rebuilding, generate new ideas, and assess alternative recovery strategies. However, the biggest challenge to such planning is the compressed timeframe within which this must happen. Thus, it remains the case that pre-disaster planning buys valuable time for deliberating and planning more efficiently and effectively after the disaster. To save time otherwise, three general approaches have been most successful in the post-disaster period:

1. Decentralized planning with many planning efforts going on simultaneously
2. Increased planning capacity with a surge in planning and decision making resources
3. Iterative planning

### Ensuring Buy-In and Adoption

Strong, collaborative leadership is critical to recovery and to planning for recovery. Collaboration is common among planners and in comprehensive planning, and it may well explain how local planners quite often take on significant leadership roles once the long haul of post-disaster community recovery begins.

Broad community leadership support for recovery planning requires earnest engagement with all the community leaders who may be involved in a key aspect of disaster recovery and its successful implementation. Key positions of leadership include the local governing body, a local recovery planning task force, and a stakeholder group, which can provide a critical feedback loop for planning and communication design. Two considerations regarding that group’s composition are the following: (1) Whose participation is essential for

guaranteeing technical accuracy and thoroughness? and (2) Whose participation and support will enhance the plan's political acceptability?

Broad public participation is important because plans are unlikely to succeed if imposed from the outside or lacking broad community support. These efforts necessarily make planning more complicated, but community consensus can increase the speed of reconstruction. Best practice recommendations include the following:

- See public participation as a core mechanism that drives the recovery planning process forward.
- Develop a public participation and communications strategy for the recovery planning process.
- Ensure broad and inclusive involvement.
- Set and maintain the planning focus on disaster recovery.
- Balance communicating the big picture with an astute focus on priority issues.
- Design meaningful discussions on alternatives.
- Ensure a full and final round of public input into the recovery plan.

Finally, a clear and inspiring planning vision can significantly motivate many actors in the process. It should be inspirational, even a challenge to attain, but not so lofty that it seems unrealistic, naïve, or disingenuous. Recovery planning can be a unifying element and a guiding light that captures the public's imagination. This can occur at two levels: catalyzing projects and visionary planning outcomes.

### **Making It All Work Together**

Recovery plans can take the form of either a standalone plan or a plan integrated into existing plans. Both have their advantages; the critical factor is to take stock of the various plans that may be linked to recovery. Recovery plans and the process of building public consensus can restore collective faith in the community, but holding onto the vision of recovery can be challenging.

### **PLAN IMPLEMENTATION: THE LONG, HARD ROAD OF RECOVERY**

The collective understanding of the planning implementation phase of post-disaster recovery is far more limited than the understanding of the planning processes. In part, this

is because government programs rarely work in practice as envisioned. What is uniquely different post-disaster is that all these activities are now happening concurrently, and a community, which previously took years and even generations to build, now wants to be restored within a matter of months to years. This pace varies considerably both spatially across the community and in time. This in turn creates unevenness and allows some urban activities to get out of order compared to normal times. Among the broad considerations planners must keep in mind:

- Early decisions can impede or undermine long-term recovery priorities.
- Competing demands for limited resources can exacerbate pre-disaster inequities.
- Mismatches exist between the flow of money and the pace of recovery.
- Bureaucracies do not adapt well to the post-disaster decision environment.
- The rules keep changing because post-disaster challenges require significant adaptations.

### **Gearing Up for Implementation**

Several recovery-related planning actions should be taken before a disaster. These include:

- adopting necessary rebuilding policies and procedures
- conducting additional studies on specific hazards and regulatory matters
- developing advance contracts and mutual aid agreements
- training staff on elements of the plan
- reviewing and maintaining the plan regularly

Planners must also anticipate certain implementation needs—most notably whether, when, and how activation of a recovery plan must take place. It may be useful to have some recommended triggers as well as the decision authority defined in the recovery plan or the implementing ordinance. The activation process needs to include a process for reviewing and modifying pre-disaster recovery plans once the actual damage patterns, estimated local revenue impacts and recovery costs, and other implementation issues resulting from the disaster have been considered.

If planning is undertaken post-disaster, there will need to be a final review and formal adoption process by the appropriate elected bodies. Once the plan is adopted, it is important to commemorate this important post-disaster milestone. Finally,