STATE GOVERNMENTS AND COMMUNITY DISASTER RECOVERY: A CRITICAL ROLE
EXECUTIVE SUMMARY

STATE GOVERNMENTS AND COMMUNITY DISASTERS: A CRITICAL ROLE

Two goals concerning community disasters are fundamental. The first is to take action before the extreme event that triggers the disaster in order to reduce the consequences of the event on the community. Should the disaster occur despite our precautions, the second is to help the community recover. Achieving these twin goals requires action and commitment by the federal government, state governments, local governments, and the private sector.

The states have the lead role in two major areas. First, the states will continue to be primarily responsible for ensuring that local governments and residents take appropriate steps to reduce the consequences of extreme events for themselves and their communities. Second, the states are primarily responsible for guiding and facilitating recovery efforts in disasters that spill across local boundaries and for helping local governments when the disaster overwhelms their capacity to mount an effective recovery effort.

The states have, of course, played and continue to have an important role in reducing the consequences of extreme events. They create the context within which local governments prepare for, respond to, and attempt to recover from the effects of extreme events. They do this by enacting building codes, regulating construction in dangerous places, inspecting bridges and dams, and undertaking a host of other policies intended to protect public health and safety. However, not every state has done as much as every other state to prepare for disasters they are likely to experience. Some states take the lead in the efforts necessary to prepare for and recover from extreme events. Some lead in a few areas, and others have yet to confront some critical aspects of likely disasters.

This paper reports on the first part of a two-step program conducted by the Business Civic Leadership Center. It identifies the “Top Ten” policies that state governments should have in place to accomplish the twin goals of reducing the consequences of extreme events for a community and of helping communities recover from the ensuing disaster. The second part of the program, to be undertaken in the future, will evaluate the states in terms of where each stands with respect to adopting those policies and implementing those practices.
THE ANATOMY OF LONG-TERM COMMUNITY DISASTER

HOW EXTREME EVENTS TURN INTO DISASTERS

Extreme events are not, in and of themselves, disasters. They trigger consequences that result in disasters. The immediate consequences of an extreme event are injuries, deaths, and damage to the built and natural environment. The nature and extent of the immediate consequences are, in part, a function of the event’s strength, severity, duration, and proximity to the community. But the immediate damage also depends on how much of the community is exposed to the event and the extent to which the exposed portions of the community are vulnerable to the forces unleashed by the event.

The most easily observed consequences of extreme events are the immediate damages to the built and natural environment. If those are the only consequences, the community faces time-consuming and costly clean-up and rebuilding. Often, however, the immediate damage triggers serious adverse economic, social, political, and environmental consequences that cascade through a community, unfolding in the weeks and months that follow. Those cascading consequences can include widespread short or long term unemployment, numerous small business failures, persistent housing shortages, unfortunate changes in community demographics, and social and even political disruption. Communities already suffering from chronic unemployment and social problems are particularly vulnerable to cascading consequences.

Cascading consequences spell bad news for the community. They often mean that community recovery is long and arduous. Complete recovery is not guaranteed.

PREVENTION IS THE BEST MEDICINE

When it comes to community recovery, just as in health care, prevention is the best cure. The best way to recover from a community disaster is not to have one. We cannot usually prevent an extreme event from occurring, but we can make our communities more resistant. Taking steps in advance of an extreme event to lessen its adverse consequences is, by far, the most cost-effective approach to recovery.

Reducing the direct effects of extreme events means fewer and less pernicious cascading consequences. The fifty states are in a unique position to implement programs that will reduce significantly the direct effects from extreme events, thus reducing the extent of cascading consequences. They are also positioned to enact policies that will reduce the exposure of people and the built
environment to extreme forces, and, finally, for that which remains exposed, they can enact policies that reduce vulnerability to the extreme forces.

THE CONSEQUENCES OF EXTREME EVENTS: AN OVERVIEW

The immediate consequences from extreme events occur because of the power, proximity, and duration of the event. They result in injuries and death and damage to the built and natural environment. Consequences triggered by immediate consequences subsequently unfold in the community system, cascade through it, and break down the patterns and relationships that comprise the living community.

IMMEDIATE CONSEQUENCES OF EXTREME EVENTS

Injuries and Death

_Extreme events almost always put some people in immediate danger_ of injury or death. Even when warned of a pending event, people may believe they have taken ample precautions, but find themselves in great peril. Or, they may fail to take precautions for other reasons. As a consequence, injuries and deaths occur because of the immediate force of an extreme event, as well as from consequences, like fire that often follows the event, and from lingering exposure in the aftermath of flood, hurricane, or storm.

Damage to Community Infrastructure

_Infrastructure is almost always damaged_ by a significant natural hazard event, industrial accident, or willful or mindless act of destruction. Damage can occur to some or all of the following: airport facilities; bridges, surface, and underground segments of road and rail systems; dams, levees, and floodwalls; electrical power generation and distribution systems; gas distribution facilities; broadcast and telephone communication systems; harbor and port facilities; waste water collection and treatment facilities; and water purification and distribution facilities.

Damage to Buildings

One recurring consequence of disasters is that they damage or destroy housing, churches, distribution and collection facilities, education and healthcare facilities, police and fire stations, retail facilities and offices, manufacturing facilities, government offices, and virtually any other kind of building. The loss of any of these buildings has consequences for long term recovery.
Housing is a linchpin in recovery. Without adequate housing at affordable prices, people leave and do not return to the community. Damaged and destroyed housing contributes to and compounds other problems. Widespread damage to housing inevitably results in housing shortages, which often means a shortage of labor for businesses and industries trying to reestablish operations.

Communities do not exist without an economic base. That base may be industrial, commercial, governmental, or recreational. Extreme events often damage or destroy a significant proportion of the inventory and production or service capacity or the amenities that comprise so much of a community's economic base. Rebuilding the structures that house production or service facilities and trying to restore community amenities does not, however, guarantee economic recovery.

Damage to the Natural Environment
Natural hazard events, particularly, have consequences for the natural environment that sometimes complicate community recovery efforts. Land areas are often reshaped, sometimes dramatically. Rivers sometimes change their course permanently. Depending on the event, there may be considerable pollution of both ground and surface water. Waste water treatment facilities, usually in or near the lowest parts of cities, spill contaminants when damaged or destroyed. Habitat and ecosystem are damaged and people suffer for a lifetime.
Generation of Immediate Emergency Needs

In the immediate emergency period surrounding an extreme event, people have needs urgent needs: warm dry clothes, medical attention, shelter from the storm, and help reconnected with family and friends. Local governments run short of body bags and temporary morgue space. Local governments and individuals are rarely prepared to meet those needs.

CASCADING CONSEQUENCES: THOSE THAT UNFOLD IN THE WEEKS AND MONTHS FOLLOWING THE EXTREME EVENT

Family and Community Disruption

Confusion typically reigns during disasters and in the aftermath. Friends and families are separated. Familiar activities and patterns of interaction have been interrupted. Even those who remain in the community through the disaster and its early aftermath often have relatively little information about what’s happening around them. Often, they do not know where to get the supplies and services they need or when they will become available. Some people often find themselves unemployed and facing extraordinary expenses. Those who have lost their belongings or their job wonder what they should do and how they should move forward. Those who lost loved ones or have their lifelong dreams shattered and find themselves without hope struggle to go on.

Figure 2. Consequences That May Cascade From Immediate Consequences of an Extreme Event
Changes in the Local Economy

The local economy always suffers some disruptions following an extreme event. At the very least, there are shifts in consumer demand. Building supplies are in great demand, luxury goods are not. Local consumer demands change as consumer priorities change and as consumers may move from one location to another or leave the community altogether. Major employers may close temporarily or permanently, move facilities elsewhere, or defer decisions about whether to reinvest in the area. Local economic support activities may be slow to reestablish themselves; e.g., restaurants, banks, grocery stores, gasoline stations, and hardware stores. Finally, and perhaps most difficult to overcome, the community may have been suffering even before the event from economic stagnation or decline.

Changes in the Population

It is not surprising that there are significant demographic changes in communities either following or just preceding disasters. What is surprising is that there has been little effort to understand the dynamics of population and demographic change in communities as a consequence of extreme events. One could hypothesize why people leave communities that experience disasters. People presumably leave one place for another when they expect that their lives will be better in the new place than in the old, given that they have the wherewithal to leave.

Local Government Financial Problems

Following an extreme event, local governments face extraordinary workloads, unusually high costs, and diminished revenues. As expenses increase dramatically, revenues to support increased demand for routine government activities go down. Project plans are required for virtually every federal loan or grant, and the expenditures are reimbursed: little or no money is provided “up front.” Local governments, almost always limited by state law to having small, specialized reserves, find themselves struggling to find financing that bridges the current need and the ultimate reimbursement. When buildings are destroyed and economic activity slows, local government revenue suffers badly. Real property tax revenue dips when there is little left to tax. Shared taxes and state government grants usually decline. Sales tax revenue declines, at least for a while, and state assistance to local schools, if formula-based, usually declines if the autumnal student count declines.

THE RECOVERY CHALLENGE

Community recovery is a complicated process. Recovery certainly does not mean reestablishing what existed before the disaster, because that rarely, if ever, can happen. At the very simplest level, recovery might have two meanings. For communities that were socially, economically, and politically viable before the disaster, recovery may mean returning to their pre-event trajectory and making up
for losses incurred by the disaster. For stagnant or declining communities, it means reversing the pre-event trajectory to create new vitality and new viability. If reversing the trajectory from decline is not possible, then there is no recovery, at least in the traditional sense. New goals must prevail.

Community recovery is further complicated because the path to recovery, while there are commonalities among communities, is different for every community depending on what the community was like before the disaster, the nature and extent of immediate loss from the event, and the subsequent consequences that unfold in that community. Community recovery is particularly complex because communities are largely self-organizing systems: given the same circumstances and the same post-event interventions to facilitate recovery, the outcomes are rarely, if ever, the same. Nothing we do can determine or control the choices that residents and interested parties outside the community choose to do or where or how they choose to do it. However, it is possible to “seed” the system to facilitate recovery.

Both the immediate consequences of extreme events and the consequences for the community that unfold in the weeks and months that follow are the principal obstacles to community recovery. It is also true that very few local governments are equipped to address the many and diverse problems associated with recovery without help from their state government.

State policies and practices can make an extraordinary difference in reducing the consequences of extreme events and they can be a powerful force in removing the obstacles to community recovery.
Injuries and death
Family and community disruption
Housing damaged or destroyed
Changes in the population
Damaged business and industrial assets
Damaged transportation, communication, utilities
Lost jobs and economic disruption
Shortage of disposable income
Shortage of investment income
Shortages of services, commodities, and supplies
Civil disorder and criminal activity
Educational and health care facilities damaged
Local government financial crisis

Figure 3. Standing Between Us And Community Recovery
“TOP TEN” STATE COMMUNITY DISASTER POLICIES

Some communities struggle with recovery, but others recover their positive pre-disaster trajectory fairly easily. Community recovery always requires special efforts, but recovery is much simpler, easier, and more likely in some communities than in others. Why is this? Research over the past decade or so provides us with important insights:

1. The difficulty of achieving recovery in any given community is largely dependent on the nature and extent of both the initial and the cascading consequences of the extreme event, on the pre-event social, economic, and political strength of the community, and the appropriateness of post-event interventions intended to spur recovery. **The best way to ensure “recovery” is to prevent initial losses.**
2. Recovery is generally much more likely in communities that suffer relatively little initial damage. Thus, **it makes sense to make communities more disaster-resistant.** State policies make communities more disaster-resistant when they require state agencies, local governments, and private parties to build resistance into the community.
3. Communities in which losses by government and private parties are covered by insurance recover much more quickly than communities left without the resources necessary for rebuilding. **State governments have the dual responsibilities of regulating insurers and ensuring the availability of appropriate coverage to residents, business owners, and local governments.**
4. When disasters do occur, despite precautions, the state and local governments are the first responders. **The states have a critical role** in ensuring the ability of local governments to respond and the dominant role in ensuring cooperation across local boundaries.

Based on these lessons, state governments have three critically important roles in disaster. The first is in disaster reduction: the states should enact and implement policies to ensure that state agencies, local governments, and private parties take the basic precautions to protect people and property from extreme events. The second role is to respond effectively during the emergency. The third is to facilitate recovery should the precautions prove to be inadequate. The states should adopt policies and implement programs to ensure that state agencies, local governments, federal agencies, and private organizations are positioned to respond
appropriately to extreme events and to work effectively toward community recovery. We describe policy clusters in each of these categories: (1) protecting against initial adverse consequences; (2) responding effectively to the emergency, and (3) facilitating post-disaster recovery.

**STATE POLICIES TO PROTECT AGAINST INITIAL ADVERSE CONSEQUENCES**

Preventing major initial losses is the best strategy for ensuring the continued viability of communities following an extreme event. The states’ role is critical because the states create the policy context within which state agencies, local governments, and private organizations make choices that affect directly the safety of both people and property.

**1 REDUCE EXPOSURE TO EXTREME EVENTS.**

The first order of business in protecting people from extreme events is to, where possible, reduce their exposure to those events. Some places are more exposed to extreme events and are, therefore, inherently more dangerous than others. Keeping people from building in dangerous places is politically difficult. Getting them to take responsibility for the consequences, for taking adequate precautions, and for maintaining adequate insurance, is just as difficult. However, building in dangerous places without taking personal responsibility for the consequences is irresponsible. Nonetheless, one very effective way of reducing injuries, deaths, and losses to property is to keep people from building in places where we can logically expect extreme events. An array of state level policy options exists to help accomplish that objective.

**Identify and Assess the Risks**

States should conduct risk assessments to identify hazardous areas and to learn more about them. These risks should be communicated to residents. Identifying the hazardous sites in a state, understanding the implications of permitting development on them, and communicating that to the public is fundamental to reducing the exposure of the population to extreme events.

**Ensure that Consumers are Aware of Hazards**

Consumers need information about risks to make rational choices about whether and how to avoid them. If we want people to reduce their exposure to extreme events, they have to 1) know they exist, 2) know what they can do to protect themselves, 3) believe that taking action now is in their best interest, and 4) have the wherewithal to take appropriate action. If those prerequisites are not met, it is futile to expect people to reduce their exposure to extreme events.
Manage Development in Flood Plains and Other Hazardous Areas

States are empowered to regulate land use under powers reserved to them by the United States Constitution. Some of the states have enacted policies to limit construction in some or all of the most dangerous locations in those states, including flood plains, dangerous beaches, areas subject to wildfire, and in areas subject to extremely hazardous earth movement. The states can regulate land use directly or enact legislation that enables local governments to do it.

REDUCE VULNERABILITY TO EXTREME EVENTS

In the United States, each level of government has a role in ensuring that the built environment is safe from design and construction flaws and from all but the most severe extreme events. State governments, particularly, have a critical role in creating a safe built environment to protect people from flood, fire, windstorm, earthquake, snow load, and even from blast. States can require that buildings and other structures are safe against all but the most extreme forces to which they will be subjected. Many state level tools exist for reducing the vulnerability of homes, commercial and industrial buildings, bridges, pipelines, and other structures. Some states employ most of those tools, while others employ only a few of them.

Enact Contemporary Building Codes and Ensure Code Enforcement

The states have the authority to enact building codes. These codes compel builders to comply with pre-established standards of materials and construction. A significant number of states have adopted statewide building codes and require all construction within the state to meet those or more stringent standards if individual communities enact them. Some state building codes have special provisions for special buildings (e.g., hospitals, schools). Effective code enforcement is critical. Adequate enforcement requires highly trained building officials with integrity. It also requires quality assurance to guarantee uniformity in implementation.

Establish Requirements for Building Resilient and Resistance Infrastructure

State governments regulate the design of certain public facilities (e.g., waste water treatment and collection facilities). It is common for infrastructure projects to be evaluated in terms of whether they can be expected to meet performance standards and their environmental impact. It is less typical that they are evaluated for their resistance to extreme events. Coupled with effective building codes, infrastructure design requirements can enhance public safety considerably.

Inspect and Maintain Critical Structures

The Federal government finances construction of critical structures (e.g., dams, levees, bridges), but the states generally build and maintain them. States already have significant responsibilities for infrastructure inspection. State level inspection and either state or local maintenance are critically important to ensure the continued reliability of bridges, causeways, dams, and levees. It is appropriate that inspections, at least, are the responsibility of state government to ensure
uniformity of inspections that require considerable expertise and because many facilities cross local government jurisdictions.

3 BUILD RESISTANCE AND RESILIENCY INTO THE COMMUNITY

Build Congruent, Supportive State Agencies and State Agency Projects
In addition to requiring local governments and private parties to reduce their exposure and their vulnerability to extreme events, State governments should build its projects to comply with standards of resistance and resiliency. State agencies should incorporate policies supportive of local government and private efforts to make communities safer.

Provide Technical Assistance and Incentives to Enhance Resistance and Resilience
The states may not be able to afford grant programs as incentives to build greater resistance and resiliency into local government and private projects, but they can provide technical assistance, ensure that regulations are congruent with the goal, and provide a variety of incentives to local government and private parties.

STATE POLICIES TO CREATE AND MAINTAIN EFFECTIVE EMERGENCY RESPONSE SYSTEMS

4 CREATE AND MAINTAIN CAPABLE, EFFECTIVE EMERGENCY RESPONSE SYSTEMS

Extreme events place people in immediate danger of injury or death. Even with advance warning of an extreme event, people may mistakenly believe they have taken ample precautions and find themselves in desperate peril. As a consequence, people are injured and killed from the initial forces, from almost immediately triggered subsequent events, and from lingering exposure in the aftermath of flood, hurricane, or storm. In the United States, despite the fact that we experience many strong and diverse extreme events, we have found ways to reduce the number of injuries and deaths to relatively small numbers compared with other, less fortunate places. The states have played and continue to play an important role in further reducing injuries and deaths from extreme events.

Define response Protocols and Procedures for Coordination and Control Among State Agencies and With Local Governments for Emergency Response
It is essential that states create plans specifying the process and procedures that will be in place during the disaster and in the aftermath. To help address coordination and control issues, the Department of Homeland Security created,
through FEMA, a **National Incident Management System** (NIMS), which, it is hoped, will provide the guidance necessary to facilitate coordination and control in disasters and imminent disasters. State governments facilitate and reinforce NIMS' adoption and application with training programs and financial incentives for participating governments that meet acceptable levels of performance. The states might also establish statewide protocols for badging and credentialing people entering disaster sites.

States can mandate that local governments have adequate emergency staffing and training. State governments can facilitate the creation of **mutual aid agreements** among local governments so that, when emergencies stretch the capacity of a single local government, others will come to its aid. Similarly, state governments are able to ensure the development of response protocols that spell out intergovernmental roles and specify decision roles and rules governing response to emergencies that occur at local government boundaries or that cut across local boundaries. The states also play an extremely important role of providing training and establishing performance and staffing standards.

**Establish Effective Inter-Agency and Intergovernmental Communication Systems and Procedures**

Effective interdepartmental and intergovernmental communication requires both appropriate behaviors and appropriate technology. Discussions about communication issues in emergency response agencies tend to focus on technology. Law enforcement and public safety personnel are often unable to communicate with one another easily and directly because their communication technologies are not interoperable. Interoperability problems are typically exacerbated because state agencies and local governments often cannot agree among themselves about which system or systems will be used.

**Ensure that State Agencies and Local Governments have Highly Competent Emergency Response Teams**

States should establish standards for emergency response organizations and staff and ensure that they have adequate training and equipment.

**Protect Citizen First Responders and ”Good Samaritans”**

Citizens are often the first responders, especially in extreme events, yet few of them are trained to perform necessary and rudimentary services. States might work to ensure training programs for citizen volunteers, but they should protect good Samaritans and others providing help from subsequent suits or penalties for their good faith efforts.
ESTABLISH SYSTEMS TO PROTECT PEOPLE IN HARM’S WAY

Ensure Adequate Warning Systems
Seeking safety is, of course, each person’s responsibility, but state government can and should facilitate their efforts. *State government can support and facilitate public awareness and education programs and adequate warning systems.* States can create warning systems, ensure that they are working effectively, and ensure that people know what to do when the warning system is triggered. People need to know about the hazard, know what the warning will be, and know what to do and how to do it to protect themselves when they hear or see the warning. Not only must warning systems be in place, but they must be in working order and be triggered when needed. The states can help to ensure that systems are in place for detecting and communicating threats to our well-being.

Educate Residents and Visitors on How and When to Shelter in Place
Community shelters and shelter plans are essential when evacuation is not practical. State governments can mandate local governments to create shelter programs to ensure the availability of adequate facilities and supplies. *States can take the lead in training people about extreme events* and about how and when to take immediate shelter in place or in community shelters. States can also subsidize the development of safe rooms in homes and commercial buildings through tax incentives, accelerated depreciation, and free, readily available building plans. States can provide tax incentives for homeowners and builders to the creation of safe rooms in homes and offices in areas subject to tornadoes.

When Possible, Remove People from Harm’s Way
When there are longer warning periods, the potential exists for evacuating people from the area in danger. State governments have to *develop and maintain effective evacuation plans,* procedures, and facilities coupled with other means of providing safe havens. Few states have multi-jurisdictional plans for marshalling ambulances, busses, and other kinds of vehicles for transporting those who are unable to transport themselves. Evacuation invariably requires crossing local jurisdiction boundaries, so the state must work to ensure the development of action plans that ensure cooperation and coordination. With an eye toward community recovery, the state should also work to ensure a safe and effective trip back home.

Care for Survivors
Extreme events almost always require emergency medical treatment and emergency supplies of food, water, and shelter. *State and local governments are responsible for immediate response, rescue efforts, and care for the survivors,* assisted by not-for-profit organizations such as the Red Cross. Because they cover more geographic area than local governments and are likely to have emergencies occur somewhere within the state comparatively frequently, it makes sense for the states to position themselves to backstop local governments with the more
specialized resources needed in large emergencies. The states have to be prepared to act.

STATE POLICIES TO ADOPT NOW TO FACILITATE POST-DISASTER RECOVERY

ENSURE THE AVAILABILITY OF ADEQUATE INSURANCE

People and organizations lose assets during and following extreme events. Buildings, production facilities, inventory, homes, and automobiles are damaged or destroyed. Rebuilding and recovering require money. To the extent that assets are lost and cannot be covered by savings or insurance, recovery for individuals and businesses is slowed. State governments can help preserve assets by ensuring the availability of appropriate property and casualty insurance policies offered by viable firms in their states.

Ensure Local Government Participation in the National Flood Insurance Program

Every year, thousands of homes are flooded and the owners find themselves uninsured or underinsured for their losses. The National Flood Insurance Program was created by the Federal government in 1968 to offer heavily-subsidized flood insurance to homeowners and renters. When uninsured or underinsured homeowners and renters suffer losses in floods, they almost invariably look for someone to compensate them for their losses. Usually, they look to the Federal government. The Federal government sometimes comes through for them, creating a powerful incentive for people to avoid the costs of insurance in favor of an expected bailout. State governments should ensure that local governments within their boundaries enroll in the National Flood Insurance Program. This can be accomplished by offering a combination of incentives and sanctions.

Ensure the Availability of Property and Casualty Insurance Policies from Viable Insurers Operating in the State

Insurance and other risk financing mechanisms are critical components of a comprehensive disaster risk management strategy. The fundamental goal is to enable viable insurers to provide disaster coverage to homeowners and renters at rates acceptable to both buyer and seller. It is in the interests of all parties -- the insurance industry, state governments, state and federal taxpayers, and residents of areas frequented by devastating events -- to devise solutions to the property and casualty insurance dilemma. States, insurers, and reinsurers, and probably federal officials, have to work collaboratively to reach workable solutions in the several states.

DEVELOP DISASTER RECOVERY PLANS IN CONCERT WITH LOCAL GOVERNMENTS
Develop Statewide Disaster Plans Outlining Who Will Do What and How They Will do It in Response to an Extreme Event

A few states have developed disaster plans. Some of those plans are much better than others. No one knows what the precise consequences of any extreme event will be, so it is impossible to outline exactly what will be done to recover from them. In addition, the most likely consequences of the most likely extreme events can be identified and plans made to respond to them.

After the Disaster, Work With Local Governments to Map Out Regional Recovery Strategies

States can provide technical assistance in one more important way. Disasters almost always spill across local boundaries. Local government’s maps rarely extend beyond their boundaries, evidence of their focus on what happens within their boundaries. Regional planning agencies sometimes exist and some are more useful than others. The states can arrange before disasters to work collaboratively with localities and federal officials to devise metropolitan or regional recovery strategies – strategies for areas that correspond to the physical and economic community that almost never corresponds to the boundaries of any given local government. These strategies can create synergies from the money spent on a host of projects. The state can provide financial incentives for cooperation and collaboration and can ensure that important regional recovery activities are funded.

Provide for the Continuity of Local Government Operations Following a Disaster

Ensure Municipal Financial Viability Following Disaster

Following extreme events even prudent local governments often face fiscal crises. There are three main reasons: expenses skyrocket, revenues decline, and the workload increases geometrically. The high expenses are the result of having to take on tasks for which funds are rarely budgeted. Debris must be removed, utilities must be restored, infrastructure must be rebuilt, public safety must be assured, rebuilding and recovery plans have to be developed, and on and on. Unfortunately, disasters usually have huge adverse impacts on local government revenues. People stop paying ad valorem property taxes when the property is no longer there. If the local government gets an annual share of sales taxes generated in the community, that share almost invariably declines dramatically immediately following a disaster. State aids to schools are usually based, at least in part, on enrollments counted shortly after the beginning of the school year. When the disaster forces families to move away, even temporarily, enrollments can plummet, just when the local government most needs the funds.

Since every state is subject to extreme events, provisions should be enacted for the state to help local governments address the financial demands occasioned by disasters for which federal disaster reimbursement is not available, including bridge financing.
Ensure Information Security

Extreme events often have disastrous effects on vital information. Extreme events play havoc with paper and other 'hard copy' documents as well as electronic files. The states can take the lead in ensuring the safety and security of important records from all levels of government within the state. Standards should be established for storing and maintaining critical records and information and for backing up that information in safe locations.

The federal government provides considerable assistance when an extreme event results in a Presidential disaster declaration. FEMA helps rebuild public infrastructure and helps some not-for-profit organizations rebuild or repair their facilities. The Department of Housing and Urban Development provides housing vouchers and Community Development Block Grants. The Economic Development Administration in the Department of Commerce funds projects for economic development. The Small Business Administration provides low interest loans to businesses. Federal programs are invaluable for supporting response and rebuilding the physical environment.

The problem is that no one at the federal level is responsible for integrating those projects into a cohesive recovery strategy. No one looks across local boundaries at metropolitan or regional recovery, and there is little support for repairing the nonstructural parts of the community system. Most local officials have had very little experience in facilitating community recovery. Local governments are usually well-equipped to deliver services and to manage construction, but they are rarely staffed with the requisite skills for “mending” a broken community. State governments can greatly assist local governments to facilitate community recovery by providing technical and temporary support staff, ensuring that Federal funds are directed to the areas critical for recovery in disasters that cross local boundaries.

Provide Support Staff and Technical Assistance

Local governments find themselves facing extraordinary demands following a disaster, with each vying for immediate attention. Damaged parts of the community require attention to clear debris and restore services. Those areas of the community not damaged still require regular community services. Someone has to inventory the sources of state and federal assistance and familiarize themselves with both their substantive and procedural requirements. Lengthy and often complex forms must be completed to request funds under the auspices of various programs. Information must be retrieved from files to support requests. Federal agencies want to get the funds to the cities and the state, but are, of course, concerned that the administrative rules for each program are complied with fully. Unfortunately, few of the programs have exactly the same rules. One thing they all have in common is that virtually every dime for which a local government seeks reimbursement must be eligible and must be accounted for. Larger and more sophisticated local governments usually have accounting systems that can accommodate that requirement; less sophisticated governments often do not. Some states provide temporary staff assistance to local governments to help meet the
urgent demands and increased workload. States can also facilitate arrangements for having unaffected local governments provide temporary assistance. FEMA will reimburse disaster related costs, so the “lending” government can be reimbursed for its costs.

Some states also provide specialized technical support in addressing a host of problems. The states can help with paperwork, installing new procedures, helping with strategic analyses for community and economic development, identifying possible sources of funds, and, later, working to help ensure the emotional and mental health of survivors with problems. States that experience extreme events on a regular basis will presumably be better equipped to provide such technical assistance than states where extreme events are rare.

Help Local Areas with Disaster Recovery Funds
Although states may not be able to provide much in the way of financial assistance to local governments and private organizations in the aftermath of a disaster, they can collect donations and other funds that are not earmarked for specific activities and direct those funds to the highest priority needs for which other funding is not readily available.

9 REPAIR OR REBUILD STATE INFRASTRUCTURE AND OPERATING FACILITIES IN THE COMMUNITY AND, IF APPROPRIATE, ACCELERATE PROGRAMMED INFRASTRUCTURE PROJECTS IN AFFECTED AREAS

State governments should have policies in place to enable them to expedite building, rebuilding, or repairing critical infrastructure components in and near damaged communities. In addition, states generally have capital improvements and other programs programmed for development over a period of years. Accelerating projects in damaged areas can facilitate recovery. The projects should be congruent with the regional recovery strategy.

Repair or Rebuild Damaged State Infrastructure Quickly
The State of California took extraordinary steps immediately following the 1994 Northridge Earthquake to repair extensive damage to Interstate 10 (the Santa Monica Freeway). The freeway was and is critical to commuting and shipping in Southern California. The damage to it created huge costs in increased transportation time and burdened local streets significantly. The consequences of down-time for the economy were staggering. The State took imaginative steps to allow contracts with private firms for repair include major incentives for early completion. The freeway was reopened in record time.

This example indicates the importance of having policies and procedures in place for initiating rapid action to repair or replace critical state owned infrastructure in the wake of damage.
Accelerate the Construction of Programmed Capital Facilities and Infrastructure in the Damaged Communities and in Undamaged Communities Bearing Direct Costs from the Disaster

In many communities, extreme events lead to economic problems. If it does not exert excess strain on the construction or financial industries in the area, it makes sense for states to accelerate already planned improvements in the damaged community to stimulate local economic activity.

Some communities that are undamaged by the event, suffer from the event. Baton Rouge, Louisiana, for example, suffered major school and traffic overloads because so many people left New Orleans and reestablished there for months and even years. Baton Rouge's infrastructure was severely taxed and needed help, but was not focused upon. States need to realize the needs of communities where people evacuate to, and take efforts to provide assistance where needed.

Assist with Financial Resources for Disaster Recovery

Because state government budgets are tight, it is unlikely that any of them will create large grant programs to help build disaster resistance into communities unless the money is initially granted to the state by the federal government. States have, however, created revolving loan funds with subsidized rates for a wide range of local government activities. It would be a relatively simple matter to place conditions on the use of the money, with stipulations that the projects receiving support from the revolving loan fund meet disaster resistance standards. The state can also place requirements on federal “pass through” grants to local entities to provide incentives for building a more resilient, resistant community. States might also condition disaster relief funds on local governments including disaster resistance into rebuilding and having disaster insurance.

States are able to establish quasi-governmental organizations to receive gifts from individuals and corporations for the purpose of disaster relief and recovery. Such quasi-governmental organizations could prioritize investment needs for specific communities working to recover from a disaster. The organization could then provide that information to potential donors for them to decide what they might want to finance. Or the organization could pool donor funds to work directly from the list of priorities to fund priority projects. It would be appropriate for the board of directors of such an organization to include representatives of donor organizations as well as public officials.

EXPEDITE PERMITTING AND LICENSING ACTIVITIES

In almost every disaster site, large numbers of people arrive from outside the community to help clean up and rebuild. These include employees of large firms with government contracts to remove debris and clear building sites as well as sole proprietors and self-employed workers that move from disaster to disaster. They include volunteers from religious groups, colleges, and neighboring towns. Experts from communities far from the disaster arrive to help restore power, relieve
emergency workers, and operate water and sewage treatment facilities. FEMA and Red Cross workers arrive.

Permitting and Inspecting Businesses that are Needed Now

All of these people need food and shelter, just like the survivors. Restaurants, gasoline stations, pharmacies, grocery stores, hotels, motels, and day care centers are high priorities in the first few days following a disaster. Most of those kinds of businesses require local and/or state inspections before they open for business. All this means that inspections and permits must be expedited. States can facilitate this process in a number of ways without jeopardizing health and safety. One way, when state approval is needed, is to provide “front of the queue” processing for specified kinds of permit and inspection requests in disaster areas. A second way is to help local governments staff up by ensuring that local governments get staffing help from neighboring jurisdictions and from the state itself. A third way is to devise contingency procedures for inspection and permitting to be implemented during disaster recovery.

Licensing Contractors and Specialty Trades

It is not only important to get certain kinds of businesses open soon after the disaster. It is important to license contractors needed to help clean up and rebuild. In most communities, electricians, builders, and others can do business in the community only if they are licensed by the local government or by a state agency. The state can greatly assist local governments license individuals and firms by working with the local governments to conduct background checks and test applicants. It may be appropriate for the state to actually take on the function of licensing contractors for certain kinds of activities, especially in cases in which statewide codes exist.

CONCLUDING COMMENTS

THIS IS STEP ONE

This is the first step in a larger project. For this report, we looked at how extreme events can lead to community disasters and how the consequences of extreme events became obstacles to recovery. Then we used that information to identify important steps that state governments can take to reduce adverse impacts from extreme events, and prepare themselves and their constituent local governments for responding to and recovering from disasters. This report identifies the “Top Ten Policy Clusters in which states can act to make a major difference in protecting their communities and, if the protection is not adequate, to help them recover from disaster.
THE NEXT STEP

The next step in the larger project is to learn what the states are actually doing in terms of the “Top Ten Policy Clusters.” The research team will identify and describe the best practices that one or more states may employ in the various policy clusters. The team will learn the extent to which all of the states have chosen to create policies and enact programs in these top ten policy areas. The resulting “Community Disaster Recovery Policy Score Card,” coupled with the best practices information, will provide officials and disaster preparedness advocates with the means for knowing what remains to be done in the various states.
STATE GOVERNMENT: 
A CRITICAL ROLE IN COMMUNITY DISASTER RECOVERY

Every year, American communities experience floods, tornadoes, hurricanes, earthquakes, wildfires, and many other kinds of extreme events. Community disasters occur in every state in the union and almost every week somewhere in America. Frankly, no one knows how much they cost because there are complex measurement issues, but we’ve heard estimates from knowledgeable people that they cost Americans about a billion dollars a week.

Two goals are fundamental to community disasters. The first is to take action to reduce substantially the adverse consequences of the event on the community before the extreme event that triggers the disaster. The second, should the disaster occur despite our precautions, is to facilitate community recovery. Achieving these twin goals requires action and commitment by the federal government, state governments, local governments, and the private sector. None can do it alone.

Notwithstanding its role in preventing terrorist attacks and in helping to build resilient communities, the federal government’s primary role in community disasters has been and will continue to be financing post-disaster clean-up and rebuilding of public sector and not-for-profit buildings and infrastructure.

State governments have the lead role in two major areas. First, the states will continue to be primarily responsible for ensuring that appropriate steps are taken by government and residents to reduce the likely consequences of extreme events. Second, the states will be primarily responsible for guiding and facilitating recovery efforts in disasters that spill across local government boundaries and for helping local governments when the disaster overwhelms their capacity to mount an effective recovery effort.

Despite the obvious good sense of taking steps before an extreme event to reduce its consequences, proposals to prevent disasters and to facilitate recovery seldom make their way to the top of state government agendas until just after a disaster occurs. As a consequence, few states have all of the critically important policies and practices in place before a major disaster occurs. Then, when one does occur, there is almost always a rush to do the right thing.

The states have played and continue to play an important role in reducing the adverse consequences of extreme events. They create the context within which local governments prepare for, respond to, and attempt to recover from the effects of extreme

We can accomplish the twin goals of disaster prevention and disaster recovery only with the combined efforts of all levels of government and the private sector. The states have the lead role in two main areas.
events. They have done this by enacting building codes and regulating construction in
dangerous places, inspecting bridges and dams, and undertaking a host of other policies
intended to protect public health and safety against extreme events. However, many states
have not done as much as others to prepare for disasters they are likely to experience.
Some states lead the effort to prepare for extreme events and for recovery in many areas,
some lead in a few areas, and others have yet to confront critical aspects of likely
disasters.

When state officials are confronted by disasters for which they are not fully
prepared, they often look to see what other states have done and wonder whether they
should have similar policies and programs in place. Residents voice dismay that the state
did not take the appropriate precautions. State legislators, eager to help their constituents,
usually offer a host of hastily-prepared legislative proposals. Once adopted, many do not
work as anticipated, sometimes having unexpected and dysfunctional side-effects. It is no
wonder that every undergraduate political science student has come to know the old
proverb “Legislate in haste, repent at leisure.”

This paper reports on the first part of two step program conducted by the Business
Civic Leadership Center. It attempts to identify the “Top Ten” policies that state
governments should have in to accomplish the twin goals of reducing the consequences
of extreme events for a community and, should the precautions prove to be inadequate, of
helping communities recover from the ensuing disaster. It is intended to provide a concise
source of information about policies that have been enacted or that are under
consideration in one or more states.

The second part of the program is to evaluate the states in terms of where each
stands with respect to adopting those policies and implementing those practices. That step
has yet to be initiated.

The Basic Approach Taken to Developing the List of Policies

For more than a decade, the research team has been studying each of more than
two dozen disaster sites in an attempt to attempt to understand recovery processes and to
identify conditions that either contribute to or hamper community recovery. The team
studied most of the sites over a period of years, returning frequently to observe changes,
conduct interviews, and compare the community with others. In addition, the team has
studied a growing body of scholarly literature about disasters and recovery with
contributions from economists, sociologists, political scientists, urban planners, and
public policy analysts written over the past half century. The policies and programs
recommended in this report are based on that research.

How the Report is Organized

This body of the report is organized in terms of the authors’ understanding of how
extreme events lead to community disasters, of policy interventions that are effective in
reducing the probable consequences of a given event, and of interventions that have
demonstrated themselves to be effective aids to recovery, other things being equal. The
report begins with a discussion of both the initial, immediate consequences of extreme
events and of consequences that unfold in the aftermath. We have chosen to label these
subsequent consequences as cascading consequences or systemic consequences. The
initial consequences are injuries and deaths and damage to the built and natural
environment. The nature and extent of cascading consequences depend on the initial consequences, the condition of the community immediately before the event, and the choices made after the event by hundreds or thousands of decision makers about what to do, how to do it, and where to do it.

The report goes on to discuss the major complexities of the recovery process. Recovery is not assured. It does not proceed linearly or on some universal timetable. Nor is it a case of recovering or not recovering; there can be different levels of recovery. Then, based on an analysis of how and why adverse consequences unfold, the report identifies two kinds of important state level policies. The first set of policies has to do with creating communities with characteristics that reduce the probability of initial damage from extreme events. The second set of policies is concerned with responding effectively to emergencies. The third set, which should also be enacted and implemented before the next extreme event, is aimed at facilitating community recovery.
THE ANATOMY OF LONG-TERM COMMUNITY DISASTER

HOW EXTREME EVENTS TURN INTO DISASTERS

Extreme events are not, in and of themselves, disasters. They generate consequences that result in disasters. The immediate consequences of an extreme event are injuries, deaths, and damage to the built and natural environment. The nature and extent of the immediate consequences are, in part, a function of the event’s strength, severity, duration, and proximity to the community. The nature and extent of the immediate damage also depends, however, on the extent to which the community is exposed to the event and the extent to which the exposed portions of the community are vulnerable to the forces of the extreme event. That is, the immediate consequences are the outcome of the event, the exposure of some or all of the community to it, and the vulnerability of that which is exposed.

The most frequent and most easily observed consequences of extreme events are the damages to the built and natural environment. If those are the only consequences, though, the community might be considered fortunate. It faces time-consuming and costly clean-up and rebuilding. With sufficient resources and resolve, communities can repair or replace the built environment in the wake of an extreme event. Often, however, damage to buildings and infrastructure, especially when coupled with many injuries and deaths, results in subsequent consequences that unfold and cascade in the weeks and months that follow and that spell bad news for the community.

If, however, the immediate damage triggers cascading consequences with serious adverse economic, social, political, and environmental effects, then the extreme event results in a serious disaster. In those instances, community recovery is often long and arduous, and complete recovery is not guaranteed. Those cascading consequences can include widespread unemployment, small business failures, persistent housing shortages, unfortunate changes in community demographics, and social and even political disruption. Communities already suffering from chronic unemployment and social problems are particularly vulnerable to cascading consequences. Repairing and replacing buildings and infrastructure is always a daunting challenge, but mending the badly-torn community fabric of a community may pose intractable challenges.

It isn't the hurricane, flood, earthquake or tornado that is the disaster; the disaster results from the adverse consequences generated by and unfolding after the event.

It is the many, interrelated, pernicious, and persistent consequences of extreme events that stand most steadfastly in the way of community recovery.
COMMUNITY RECOVERY

Despite precautions that may have been taken against the eventuality of an extreme event, many communities suffer extraordinary immediate losses to life and property as well as extraordinary cascading consequences. Taking precautions is important, but they are not always sufficient. Inevitably, some extreme events are more destructive than our precautions are protective. A building designed to withstand the forces of a moderate earthquake is likely to fail during a very powerful earthquake. A levee built to hold back water 20 feet above flood stage is not much help against water that is 25 feet above flood stage.

When disaster strikes, recovery requires much more than mourning the dead, caring for the injured, and repairing or restoring the built environment. When there are cascading consequences, it requires mending or replacing a complex community system.

Community disaster recovery is a complex process about which relatively little is understood. If all that were required for recovery was simply cleaning up the debris, repairing or replacing buildings, restoring public services, and reopening shops and businesses, recovery would be relatively simple and, perhaps, almost inevitable. Communities are, however, are much more than bricks and mortar and people that inhabit the space. They are made up of people and organizations with established relationships with one another. The patterns of interactions, the relationships, and the shared experiences within the built environment are what comprise the community.

Thus, a community is not like an automobile, which, having been involved in a collision, can be simply repaired with the aid of an instruction manual and some replacement parts and be as good as new. Communities are, in fact, complex, self-organizing systems. They undergo some changes every day. The changes are the outcomes of the choices and actions taken every day by hundreds and thousands of people both in the community and by people outside the community, but within its relevant economic, social, and political environment. A community is a synergistic system; it is more than the sum of the individuals and organizations that comprise it.

This way of seeing a community has extremely important implications for those concerned with post-disaster community recovery. First, there is no fixed formula for community recovery. Every community is unique. Every disaster is unique. If we were somehow able to clone a specific community and a specific disaster, and if government and others trying to facilitate community recovery did exactly the same thing in and for each of the cloned communities, it is still extremely unlikely that the long term outcomes in any one of the communities would duplicate those of any of the others. The reason is simple: we could never hope to replicate or control the decisions made by all of the independent members of the community, and of those outside the community that make decisions affecting the community, about what to do, how to do it, and where to do it.

Second, community disasters tend to have threads in common with one another and that become more or less apparent in the days, weeks and months following the
extreme event. There are many of those threads. Extreme events place people in immediate danger of injury and death. They generate family and social disruption, emotional and psychological disorders, and changes in the demographic composition of the community. Housing is damaged or destroyed along with business inventory and production facilities. That sometimes results in staggering losses of savings and equity. Public facilities, too, may be damaged or destroyed, including roads and bridges and other transportation facilities, communication facilities, public utilities, and even city hall itself may be destroyed.

Many who suffered losses find that they have insufficient insurance, savings, or access to capital to rebuild damaged structures and facilities. People lose jobs temporarily or permanently. The provision of goods and services is usually disrupted, at least for a while: Where will I get gasoline, prescription medicines, food, and materials to fix my home? Local merchants will find that consumers have changed their buying habits dramatically; their focus will be on repairing their homes and on replacing what was lost. They are likely to defer visiting the optometrist, the brake repair shop, hobby shops, and jewelers, reducing significantly the income of those who own and work in those places.

Health care and educational facilities will be damaged or destroyed and those who staff those institutions may have left town. Local governments will find themselves short of cash and long on increased expenses. Local officials will learn that the federal government reimburses expenses and does not advance cash to meet unexpected needs. Finally, it doesn’t follow as night follows day, but looting and civil disorder sometimes follow in the wake of disasters. On occasion, criminal behavior has even hampered rescue and firefighting efforts during extreme events.

Third, the fact that there are common threads among communities in terms of both immediate and cascading consequences provides us with focal points for action to both lessen the impact of extreme events and to facilitate disaster recovery.

**PREVENTION IS THE BEST MEDICINE**

When it comes to community recovery, just as in health care, prevention is the best cure: the best way to recover from a community disaster is not to have one. We cannot usually prevent an extreme event from occurring, but we can make our communities more resistant to them. Taking steps in advance of an extreme event to preclude or to lessen its adverse consequences is, by far, the most cost-effective approach to recovery.

For example, California earthquakes are as powerful as those that occur anywhere else. However, fewer buildings fail in California during those temblors than in most other places and, consequently, fewer people are injured and killed. This is because California has, for more than seven decades, required that buildings be designed and built to resist earthquake forces. Lessening the direct effects of extreme events means fewer and less pernicious cascading consequences. The states are in a unique position to implement programs that will reduce significantly the nature and extent of direct effects from extreme events, thus reducing the nature and extent of cascading consequences. They are also positioned to enact policies designed that will result in reducing the exposure of people and the built environment to extreme forces, and, finally, for that which remains
exposed, they can enact policies that result in reduction in vulnerability to the extreme forces.

THE CONSEQUENCES OF EXTREME EVENTS: AN OVERVIEW

We have separated the consequences of extreme events into two categories. The first category is made of up of the consequences that occur because of the power, proximity, and duration of the extreme event on the living and on the built and natural environment. The second category comprises what we have concluded are the consequences from which it is most difficult for a community to recover. These are the consequences that unfold, largely as a result of immediate consequences, in the community system and that work to break down the patterns and relationships that comprise it.

Not all of the immediate and cascading community consequences occur in every community following every extreme event. In fact, the communities that appear to recovery most quickly seem, based on our research, to be those that suffer immediate consequences with relatively few subsequent, cascading consequences.

IMMEDIATE CONSEQUENCES OF EXTREME EVENTS

Injuries and Death
Extreme events almost always put some people in immediate danger of injury or death. Earthquakes, tornadoes, and flash floods strike with little or no warning. Even when warned in advance of an event, people may believe they have taken ample precautions, but find themselves in great peril. Or, they may fail to take precautions for other reasons. As a consequence, injuries and deaths occur during an extreme event, as well as from immediately subsequent events, like fire that often follows the earthquakes and floods and from lingering exposure in the aftermath of flood, hurricane, or storm.

In the United States, we experience many strong and diverse extreme events, but we are fortunate to have found ways to reduce the number of injuries and deaths to relatively small numbers when compared with many other places. Not only do we have the know-how, but we also have sufficient resources, if not sufficient resolve, to take the necessary steps.

Damage to Community Infrastructure
Infrastructure is almost always damaged by a significant natural hazard event, industrial accident, or willful or mindless act of destruction. Damage can occur to airport facilities; bridges, roads, and underground segments of road and rail systems; dams, levees, and floodwalls; electrical power generation and distribution systems; gas distribution facilities; broadcast and telephone communication systems; harbor and port facilities, waste water collection and treatment facilities, and; water purification and distribution facilities.
In recent decades, larger cities in California have taken action to make infrastructure more resilient against earthquakes. Most places in the United States have not taken similar precautions against the hazards that pose danger to them.

Figure 1. Illustrative Direct Consequences of an Extreme Event, Given Highly Exposed and Vulnerable Structures.

**Damage to Buildings**

One recurring consequence of floods, hurricanes, earthquakes, tornadoes, and most other extreme events is damage to housing, churches, distribution and collection facilities, education and healthcare facilities, police and fire stations, retail facilities and offices, manufacturing facilities, government offices, and virtually any other kind of building.

Widespread damage to housing contributes to and compounds other problems, not the least of which is housing shortages. Prices for remaining housing often rises substantially, at least for the short term. Housing shortages often mean a shortage of labor for businesses and industries trying to reestablish operations. Housing shortages are sometimes exacerbated by shortage of construction workers and materials, which occurs most often when an event like Katrina generates regional demands in excess of supply. In such cases, costs often increase significantly.

Homeowners who were not insured for losses and who had most of their assets in the form of home equity are particularly hard hit by extreme events. They typically find themselves owing money on a mortgage for a house that may or may not still exist and, at
the same time, paying for rental housing and repairs to their former home. For these people, the disaster is amplified by the prospect of imminent financial ruin.

All in all, housing shortages triggered by extreme events constitute a proverbial chicken and egg problem. They are the result of some problems and the cause of still others. They are difficult to deal with because they are intertwined with other problems triggered by the event.

Housing is a recovery linchpin. Without adequate housing at affordable prices, people leave and do not return to the community. This creates labor shortages if, indeed, employment is available. If labor is not available, employment opportunities may decline, further complicating the recovery puzzle. Since government can do things to help make housing available, housing is probably a first order priority in recovery.

Another chicken and egg problem emerges when business and industrial assets are damaged or destroyed. Communities do not exist without an economic base. That base may be industrial, commercial, governmental, or recreational. Extreme events often damage or destroy a significant proportion of the inventory and production or service capacity or the amenities that comprise much of a community’s economic base. Rebuilding the structures that house production or service facilities does not, however, guarantee economic recovery. No community is free from competition from some other communities. When New Orleans was badly damaged, Las Vegas benefited. When the Gulf Coast beaches in Mississippi and Alabama were covered with debris, Florida benefited. Industry is not alone in losing customers from disasters. Local merchants often find that their customers moved away, have less disposable income, or are spending their income on different goods and services – on those things lost or destroyed in the disaster. Places that exist to serve the needs of a community of retirees, for example, may find that those retirees have moved wholesale to another place following a disaster.

Damage to the Natural Environment

Natural hazard events, particularly, have consequences for the natural environment that sometimes complicate community recovery efforts. At one extreme, land masses are often reshaped, sometimes dramatically, and rivers change their course. There may be considerable pollution of both ground and surface water. Waste water treatment facilities are usually in or near the lowest parts of cities. Katrina, the Iowa floods of 2008, and a host of other water related disasters result in raw sewage being discharged directly into the environment, sometimes for weeks or months. Industrial accidents, like the poison gas release at Bhopal and the nuclear accident at Chernobyl have serious and long-lasting consequences. Habitat and ecosystem are damaged and people suffer for a lifetime.

Generation of Immediate Emergency Needs

In the immediate emergency period surrounding an extreme event, people have needs for which they themselves are seldom prepared: warm, dry clothes, medical attention, shelter from the storm, and ways to communicate with family and friends.
Local governments, too, often have emergency needs, including body bags and temporary morgue space.

CASCADING CONSEQUENCES: THOSE THAT UNFOLD IN THE AFTERMATH OF THE EXTREME EVENT

Family and Community Disruption

Confusion typically reigns during disasters and in the early aftermath. It is understandable. Friends and families are separated, sometimes for weeks or months. Familiar landmarks may have been destroyed. Familiar activities and patterns of interaction are likely to have been disrupted. Those who remain in the community through the disaster and the early aftermath often have little information about what’s happening around them. Rumors, some of them patently outlandish, spread rapidly, creating further confusion. When damage to the built environment is widespread and severe, community connections sometimes begin to unravel at more fundamental levels. People often find themselves unemployed and facing extraordinary expenses. Those who remain in the community often do not know where to get the supplies and services they need or know when they will become available. Those who have lost their belongings or their job wonder what they should do and how they should move forward. Those who lost loved ones or have their lifelong dreams shattered struggle to go on.

Months after the extreme event, the visible effects of the disaster begin to disappear, but individual and family problems are likely to develop. Disasters are extremely stressful for. Individuals manifest symptoms of post-traumatic stress disorder and depression. Almost everyone is susceptible. Individual problems sometimes lead to family problems. Divorces are likely to occur as a direct consequence of the event. Paying attention to longer term individual, family, and community health issues is as important to community recovery as providing for immediate needs even as the dust is settling and the mud dries.

Changes in the Local Economy

The local economy always suffers some disruptions following an extreme event. At the very least, there are shifts in consumer demand. Building supplies are in great demand, luxury goods are not. Local consumer demands change as consumer priorities change and as consumers may move from one location to another or leave the community altogether. Major employers may close temporarily or permanently, move facilities elsewhere, or defer decision about whether to reinvest in the area. The local recovery challenge is often exacerbated when the community’s major employer or employers are not locally owned or have other strong ties to the community. Major employers may move for many reasons: the labor force may no longer be adequate, critical infrastructure may be nonfunctional for extended periods, or the competitive advantage of the location may have become reduced, perhaps irreparably. Investors may lose confidence in the viability of the place. Local economic support activities may be slow to reestablish.
themselves; e.g., restaurants, banks, grocery stores, gasoline stations, and hardware stores. Employers may lose market share to other places because rebuilding is not sufficiently rapid, adequate, or appropriate to enable them to retain their pre-event market share. Finally, and perhaps most difficult to overcome, the community may have been suffering even before the event from local or regional economic stagnation or decline.

Changes in the Population

In Homestead, Florida, a large proportion of the middle class left town just in advance of Hurricane Andrew and did not return. Many of these people were refugees from harsh northern winters. Others were military dependents and retirees who left because Homestead Air Force Base was closed just hours before the hurricane struck and was not reopened. Others left just to escape future hurricanes. Following the hurricane, the Department of Housing and Urban Development made large numbers of housing vouchers available in Homestead. New apartments were built, but the former residents were gone. The resulting availability of apartments attracted people to the community, but most of them were low income and lacked education and job skills. In Northridge, California, as many as 20,000 people moved away from the community following the 1994 earthquake and did not return. Many of these were middle class people who found themselves facing early retirement as employment in the defense industry declined in the San Fernando Valley and as their homes declined in value. Early retirement, declining
home values, and widespread earthquake damage prompted many to move away. Large numbers, it is said, moved to Nevada. Others moved elsewhere. They were replaced in Northridge by recent arrivals from Mexico and Latin America and from Korea, thus changing the community significantly.

It is not surprising that there are significant demographic changes in communities following disasters. After all, Americans have moved in great numbers from place to place and from region to region ever since colonial days. What is a little surprising is that there has been very little effort made to understand the dynamics of population and demographic change in communities as a consequence of extreme events. Thus, it came as a surprise to many when a very large number of people who evacuated New Orleans chose not to return.

People presumably leave one place for another when they expect that their lives will be better in the new place than in the old and if they have the wherewithal to leave. It seems likely that people who move from someplace to a community that experienced a recent disaster do so for the same reasons. People move to the site of recent disasters because they expect that they will improve their lives by doing so. Of course, the choice of moving presumably depends, in part, on other variables, including the availability of a place to live and a source of income.

**Local Government Financial Problems**

Following an extreme event, local governments face extraordinary workloads and unusually high costs. Local officials often sleep in city hall for weeks following a disaster, tending to the community’s needs while their own families are left pretty much to fend for themselves. The workloads are enormous and continually changing, ultimately involving virtually everyone in local government. The first demands are made on public safety personnel, then on public works to clear debris and rebuild infrastructure, then on inspectors and those who issue permits and licenses, and, from beginning to end, on top management and finance officers.

Even as expenses increase dramatically, revenues to support increased demand for routine government activities go down. The federal government does not give local governments a blank check and tell them to do whatever they think is needed. Almost no money is available to local governments to help pay for “routine” operations following a disaster. The money is available only for expenditures that can be related directly and immediately to the disaster. Project plans are required for virtually every loan or grant, and the expenditures are reimbursed: little or no money is provided “up front”. Local governments find themselves struggling to find financing that bridges the current need and the ultimate reimbursement. When buildings are destroyed and economic activity slows, local government revenue suffers badly. Real property tax revenue dips when there is little to tax. Shared taxes and state government grants usually decline. Sales tax revenue declines, at least for a while and state assistance to local schools, if formula-based, usually declines if the autumnal student count declines. A hurricane in September almost always means lower enrollment counts in October.

**THE RECOVERY CHALLENGE**

Community recovery is a complicated process. It is made more complicated because, while everyone speaks as though we all understand what it means, there is no
standard definition. Recovery certainly does not mean reestablishing what existed before the disaster, because that rarely, if ever, happens. At the very simplest level, recovery might have two meanings. For communities that were socially, economically, and politically viable before the disaster, recovery probably means returning to that pre-event trajectory and making up for losses incurred since the disaster. For stagnant or declining communities that experience an extreme event, it may mean reversing the pre-event trajectory to create a new vitality and a new viability. If reversing the trajectory from decline is not possible, then neither is recovery possible and must be replaced with a different set of goals.

Community recovery is further complicated because the path to recovery is different for every community. It depends on what the community was like before the disaster, the nature and extent of immediate loss from the event, and the subsequent adverse consequences that unfold in that community.

Finally, community recovery is made more complex because communities are largely self-organizing systems: given the same circumstances and the same post-event interventions to facilitate recovery, the outcomes are rarely, if ever, the same. Nothing we do can determine or control the choices that residents and interested parties outside the community choose to do or where or how they choose to do it.

Myths abound concerning business and community recovery in the wake of a disaster. There is no “universal” community recovery timetable. No one can tell you how long it will take because recovery does not operate on a schedule. Recovery is neither certain nor guaranteed. Recovery does not follow rebuilding structures as night follows day. It does not make sense for all kinds of businesses to reopen as quickly as possible.
following an extreme event. Some kinds should open as soon as they can. Others should bide their time until they have completed a post-event feasibility study and rewritten their business plan. No agency in the federal government is responsible for community recovery: several are responsible for helping to finance rebuilding the physical artifact.

What is true is that both the immediate consequences of extreme events and the consequences for the community that unfold in the weeks and months that follow are the principal obstacles to community recovery. It is also true that very few local governments are equipped to address the many and diverse problems associated with recovery without help from their state government.

State policies and practices can make an extraordinary difference in reducing the consequences of extreme events and they can be a powerful force in removing the obstacles to community recovery. Just how that can be done is outlined in the next section.
“TOP TEN” STATE COMMUNITY DISASTER POLICIES

Community recovery always requires special efforts, but recovery is simpler, easier, and more likely in some communities than in others. Some communities ravaged by tornadoes have restored themselves to their pre-tornado social and economic conditions quickly. That does not mean that bad memories do not live on in St. Peter, Minnesota, and Barneveld, Wisconsin, but both communities did recover. Most California communities rebound from wildfires within a few years and most of Florida’s Gulf Coast communities are doing well following a series of powerful hurricanes. Other communities languish for years and decades following a disaster. Why is this?

The “why does it happen that way?” question is critically important. As yet, we have no general theory of community recovery. Even so, research over the past decade or so provides us with important insights.

● The difficulty of achieving recovery in a community is dependent on the nature and extent of both the initial and the cascading consequences of the extreme event, on the pre-event social, economic, and political strength of the community, and on the timing and appropriateness of post-event interventions intended to spur recovery.

● Recovery is generally much more likely in communities that suffer relatively little initial damage. Thus, it makes sense to make communities more disaster-resistant. State policies make communities more disaster resistant when they require state agencies, local governments, and private parties to build resistance into the community.

● Communities in which losses by government and private parties are covered by insurance recover much more quickly than communities left without the resources necessary for rebuilding. State governments have the responsibility to regulate insurers and to ensure the availability of appropriate coverage.

Based on these lessons, state governments have three critically important roles in disaster. The first is in disaster reduction: the states should enact and implement policies to ensure that state agencies, local governments, and private actors take precautions to protect people and property from extreme events. The second role is to respond effectively to emergencies. The third is to facilitate recovery should the precautions prove to be inadequate. The states should adopt policies and implement programs to ensure that state agencies, local governments, federal agencies, and private organizations are positioned to respond appropriately to extreme events and to work effectively toward community recovery. The states are uniquely positioned to make the difference in each area.

Three sections follow. The first is about policies that states should have in place to reduce initial losses to extreme events. The second addresses policies that the states should have in place to facilitate effective response. The third and last comprises state policies that should be in place before the next extreme event to facilitate response and post-event recovery.
STATE POLICIES TO PROTECT AGAINST INITIAL ADVERSE CONSEQUENCES

Preventing major initial losses is the best strategy for ensuring the continued viability of communities following an extreme event. Recovery is seldom easily achieved and never guaranteed. Preventing, or at least mitigating, the immediate consequences of extreme events helps preclude cascading consequences for the community. The state role is critical because the states create the policy context within which state agencies, local governments, and private organizations make choices that affect directly the safety of both people and property.

The most fundamental policies that states can adopt with regard to extreme events is to encourage and support enhanced resiliency and resistance in their communities. This can be done through laws, programs, and practices that reduce the exposure to and the vulnerability to extreme events. Communities that are safe from natural hazard events, willful or mindless acts of destruction, and large accidents are built one decision at a time. The states are able to ensure that public and private decisions take resistance and resilience into account.

POLICY 1: REDUCE EXPOSURE TO EXTREME EVENTS.

The first order of business in protecting people from extreme events is, where possible, to reduce their exposure to those events.

Some places are more exposed to extreme events than others and are, therefore, inherently more dangerous. Unfortunately, the most dangerous locations are often the most attractive places to live. People love to live at the beach, at the shore, in California foothills and canyons, and on bluffs with great views. Sometimes, they choose to live in areas subject to frequent flooding or even in coastal areas below sea level, protected only by ever-fallible dams, levees, and floodwalls.

People who live in inherently dangerous places have subjected themselves to recurring hurricanes, storm surge, flooding, landslides, wildfires, volcanic eruption, tsunamis, or earthquakes. They have, implicitly or explicitly, made a tradeoff between the increased risk and the pleasure they derive from living there. Some apparently believe that the extreme event will not happen in their lifetime, or, if it does, that they will somehow be spared. Either way, it is a little like working on a high wire without a net. Too often, their calculus is based on the assumption that the rest of us will be there to catch them when they fall.

One very effective way of reducing injuries, deaths, and losses to property is to keep people from building in places where we can logically expect extreme events: in flood channels and flood plains, on unstable bluffs, on beaches subject to frequent and/or severe hurricanes and storm surges, on known active earthquake faults, and the like. An array of state level policy options exists to help accomplish that objective.

1.1 Identify and Assess the Risks

States should conduct risk assessments to identify hazardous areas and to learn more about them. These risks should be communicated to residents. In California, for
example, earth scientists detect earthquake faults, identify their seismic potential, and identify “return periods” – how much time usually elapses between temblors on the fault. The State uses that information to classify the state into “seismic zones.” Identifying the hazardous sites in a state, understanding the implications of permitting development on them, and communicating that to the public is fundamental to reducing the exposure of the population to extreme events.

1.2 Ensure that Consumers are Aware of Hazards

Consumers need information about risks to make rational choices about whether and how to avoid them. If we want people to reduce their exposure to extreme events, they have to 1) know they exist, 2) know what they can do to protect themselves, 3) believe that taking action now is in their best interest, and 4) have the wherewithal to take appropriate action. If those prerequisites are not met, it is futile to expect people to reduce their exposure to extreme events.

This point has not been missed by various governments. Some California cities have flirted with the idea of posting plaques on buildings that identify the extent to which that building is built to resist earthquakes. And, in Los Angeles, every restaurant displays a letter grade in its window, such as A, B, or C, reflecting the score it received from government health inspectors. Restaurant goers appear to pay attention to that score when choosing where to eat.

1.3 Manage Development in Flood Plains and Other Hazardous Areas

States are empowered to regulate land use. Some states have enacted policies to limit construction in some or all of the most dangerous locations in those states, including flood plains, dangerous beaches, areas subject to wildfire, and in areas subject to extremely hazardous earth movement. The states can regulate land use directly or enact legislation that enables local governments to do it.

Some local governments have acquired land subject to frequent floods and turned it into parks, greenways, and golf courses. Six feet of water on a soccer field is not nearly as bad as six feet of water in a shopping center or nursing home.

Some states have made some flood plains into permanent habitat for migratory birds and other animals. Managing ecosystems, particularly along shorelines, contributes to risk reduction. Well-managed ecosystems can reduce the impact of floods, storm surges, landslides, and hurricanes. In addition, they provide important habitat for wildfowl, songbirds, and animals and can also improve surface water quality significantly.

Natural defenses exist for some kinds of natural hazard events. Swamps and marshes absorb and detail flood waters. Barrier islands reduce the impact of hurricanes on the shore. Brush-covered or forested hillsides protect against landslides and mud flows. State and local governments have critical roles in protecting and maintaining these natural features that mitigate against the severity of extreme events.

**POLICY 2: REDUCE VULNERABILITY TO EXTREME EVENTS**

Almost no place in North America is safe from natural hazard events, willful or mindless destruction, or large accidents. Some locations are, however, more likely to experience one or another events than are other places. So, while reducing exposure of
people and structures to the events we can expect in a particular area, such as flood, wildfire, earthquake, or volcanic eruption is important, reducing the vulnerability of that which remains exposed is extremely important.

People are injured or killed when a bridge collapses in Minnesota, when an earthquake topples an elevated freeway in Oakland, when apartment buildings collapse in Northridge, when snow loads collapse a supermarket in New York, and when levees fail in Louisiana. In the United States, each level of government has a role in ensuring that the built environment is safe from design and construction flaws and from all but the most severe extreme events. Hurricane Andrew destroyed a 35 mile swath across south Florida in 1992. Despite the fact that Dade County, where most of the damage occurred, had perhaps Florida’s most rigorous building code at the time, post-hurricane evaluations revealed shoddy workmanship and materials. Lax code enforcement, coupled with unscrupulous builders, was blamed. Records show that one local government building official had “inspected” as many as 80 buildings in a single day.

State governments have a critical role in creating a safe built environment to protect people from flood, fire, windstorm, earthquake, snow load, and even from blast. We all know that no building can be made “earthquake proof,” and it has been said that there are only two kinds of levees: those that have failed or been overtopped and those that will be. The States are in a position to require that buildings and other structures are safe against all but the most extreme forces to which they will be exposed.

2.2 Enact Contemporary Building Codes and Ensure Code Enforcement

The states have the authority to enact building codes that require builders to comply with pre-established standards. A significant number of states have adopted statewide building codes and require all construction within the state to meet those or more stringent standards if individual communities enact them.

States that enacted statewide codes historically based them on model codes. For a century, the model codes were based on three regional codes. Those developed by Building Officials Code Administrators International (BOCA) were used in the East and Midwest. The Southern Building Code Congress International (SBCCI) codes were used in the Southeast and the codes published by the International Conference of Building Officials (ICBO) were used mostly on the West Coast. In 1994, the three groups joined forces to form the International Code Council (ICC). The first ICC code was published in 1997. It has been adopted by a number of states where it applies to local governments as well. In some state, general purpose municipal governments may enact a more stringent code.

Some state building codes have special provisions for special buildings. California may well lead the nation in the quality of its building codes, largely because of its efforts to reduce damage from its frequent earthquakes. Buildings created in the more dangerous seismic zones must meet higher standards than those built in less dangerous areas. In addition, schools and hospitals must meet still higher standards than other buildings. They require state agency approval of plans, a state-issued permit for construction, and inspection by state officials during construction. This has been done to ensure uniformity in applying provisions of the code.

Effective code enforcement is critical, as demonstrated by the terrible experience in south Florida’s Hurricane Andrew. Adequate enforcement requires well-trained
building officials with integrity. It also requires quality assurance to guarantee uniformity in implementation. The states have obvious roles to play in both training and quality assurance.

2.2 Establish Requirements for Building Resilient and Resistant Infrastructure

State governments regulate the design of certain public facilities. In most states, waste water treatment and collection facility plans, for example, must be submitted to one or more state regulatory agencies for evaluation and approval before construction begins. It is common for infrastructure projects to be evaluated in terms of whether they can be expected to meet performance standards and in terms of their environmental impact. It is less typical that they are evaluated for their resistance to extreme events, although, again, in California, seismic resistance is a criterion. It is appropriate that facilities be evaluated in terms of their resistance to flooding, storm surge, extreme winds, ice shoves, landslides, blast, and other extreme events. Coupled with effective building codes, infrastructure design requirements can enhance public safety considerably.

Often, the tendency is to rebuild quickly after a disaster, duplicating what existed before the disaster. That is frequently a big mistake. The rebuilding should incorporate resistance and resiliency into buildings and infrastructure. The state can help guarantee that this happens. When local governments submit plans to the state to replace damaged or destroyed facilities to the state for review and approval, the state can require that they be made disaster resistant. Local jurisdictions can comply by locating the facilities in safe locations or by designing them to be more disaster resistant. State governments assist local governments by providing engineering and design support. They can also require disaster resistant designs for projects that it helps to finance by making disaster resistance a condition of state financial assistance for the project.

2.3 Inspect and Maintain Critical Structures

The American Public Works Association reports that 59 percent of our roads are in poor to fair condition, 31 percent of bridges are deficient or obsolete, and 12 percent of dams are high hazards due to deterioration. The information is based largely on the continuing National Bridge and the National Dam Inventories. When dams and levees fail, people die. When bridges fail, people die, and when bridges and roads are inadequate, simply getting from here to there, much less evacuating people in times of danger, is more difficult.

The Federal government often finances construction of these facilities, but the states generally build and maintain them. States already have significant responsibilities for infrastructure inspection. For example, as a condition of receiving federal construction funds, states are required to inspect bridges more than 20 feet long every 24 months, with extensions sometimes given to 48 months. State level inspection and either state or local maintenance are essential to ensure the continued reliability of bridges, causeways, dams, and levees. It is appropriate that inspections are the responsibility of state government. They can ensure uniformity of inspections that require considerable expertise and because many facilities cross local government jurisdictions.

Inspections are necessary but not sufficient to provide bridge and dam safety. Inspections must be accompanied by maintenance and replacement and, for too many years in too many places, maintenance has been deferred. Maintaining adequate...
infrastructure is critical, not only for economic growth, but for protecting the public against extreme events. High-head dams and transportation nodes are not exempt from willful acts of destruction with extraordinary consequences. New designs and new standards can reduce their vulnerability.

POLICY 3. BUILD RESISTANCE AND RESILIENCY INTO THE COMMUNITY

3.1 Build Congruent, Supportive State Agencies and State Agency Projects

These days, most state governments are seriously strapped for money. Many are struggling simply to balance budgets. Unlike the Federal government, they have limited ability to run deficits and debt. This makes it extremely difficult for states to create reserves that might be used to provide low interest loans and/or grants to governments and critical industries to help them recover from a disaster.

Raising taxes to generate funds for making communities more resistant to disasters does not look promising. In 2008, California’s Governor Schwarzenegger proposed a “fire tax” to help finance the extraordinary efforts there to fight wildfires, but the proposal appears to have fallen flat, despite an extraordinary series of fires that year. Raising taxes to create disaster reserves is not likely to find much support.

State governments can, however, support local efforts at disaster resistance in other ways. One way is by designing state projects with local efforts in mind. When the state establishes routes for highways, it can locate them to complement local plans to divert flood waters or other goals. Various state agencies can participate in such efforts. State recreation and natural resource agencies can ensure wetland protection by funding local governments from multiple sources to accomplish multiple objectives in the flood plain areas. For example, the land might be used for both wildlife habitat and hiking or biking trails, both of which are often funded, but from different pockets.

3.2 Provide Technical Assistance and Incentives to Enhance Resistance and Resiliency

Because state government budgets are tight, it is unlikely that any of them will create large grant programs to help build disaster resistance into communities unless the money is initially granted to the state by the federal government. States have, however, created revolving loan funds for a wide range of local government activities. Typically, the funds are loaned to local governments with interest rates below market rates. It would be a relatively simple matter to place conditions on the use of the money, in this case, with stipulations that the projects meet disaster resistance standards.

The state can also place requirements on federal “pass through” grants to local entities to provide incentives for building a more resilient, resistant community. States might also condition disaster relief funds on local governments building disaster resistance into rebuilding and to having disaster insurance.

For many people and smaller organizations, increasing the resistance of their home or business may look like an expensive process. For some changes, it is, relatively simple and inexpensive ways exist to improve safety and resistance. States can prepare and disseminate information on how to do it. Some states with universities having extension and outreach programs in counties may be able to use them to get information
to households in dangerous locations. States with fairly substantial disaster management budgets are in a position to do much more in terms of providing technical information to private organizations and providing training to professional designers and builders. Both private and public universities in many states conduct research on various hazards, including earthquake engineering, wind hazards, hurricanes, floods, tornadoes, and so on. These universities frequently provide training programs in addition to publishing extensively on their research.

The Federal government provides rarely provides support for investor-owned businesses following disasters. If two damaged hospitals are next door to one another, the one that is not-for-profit or owned by a local government can receive aid for repair, rebuilding, and mitigation. The one owned by investors is ineligible for assistance. It is important that investor-owned facilities and organizations themselves become disaster resistant and the states can provide incentives for them. States that levy corporate income taxes can provide tax credits, accelerated depreciation, and other benefits to provide incentives for those firms to take precautions against disaster.

States are also in a position to help individuals and businesses in other ways. States subject to frequent tornadoes might exempt the value of safe rooms built into home and places of business from ad valorem property taxes. Or, the state might provide tax credits against state levied income taxes for funds used to construct safe rooms. In states with frequent earthquakes, the same might be done to provide an incentive for owners to bolt buildings to their foundations or otherwise reduce their susceptibility to earthquakes.

STATE POLICIES TO CREATE AND MAINTAIN EFFECTIVE EMERGENCY RESPONSE SYSTEMS

Extreme events place people in immediate danger of injury or death. Earthquakes, tornadoes, and flash floods strike with little or no warning. Even with advance warning of an extreme event, people may mistakenly believe they have taken ample precautions, but find themselves in desperate peril. As a consequence, people are injured and killed by the initial forces, by subsequent events triggered by the extreme event, and by lingering exposure in the aftermath of flood, hurricane, or storm.

In the United States, despite the fact that we experience many strong and diverse extreme events, we are have found ways to reduce the number of injuries and deaths to relatively small numbers compared with other, less fortunate places. The states have played and continue to play an important role in further reducing injuries and deaths from extreme events.

POLICY 4. CREATE AND MAINTAIN CAPABLE, EFFECTIVE EMERGENCY RESPONSE SYSTEMS

Protecting people during extreme events begins long before the event itself. State governments can ensure that both they and local governments have capable, effective emergency response systems and that the various agencies and local governments are able to work together effectively and efficiently in emergencies.

Without adequate coordination and communication, even common events can result in serious situations. In January 2008, thousands of motorists were stranded for up to
eight hours on an interstate highway leading from Madison, Wisconsin, to Chicago, Illinois. A winter storm resulted in two trucks jack-knifing on a large hill, blocking traffic. Despite hundreds of 911 calls from stranded motorists with cell phones, the Wisconsin State Patrol, a division of the State’s Department of Transportation, responded slowly and poorly, exacerbating the situation greatly. For an extended period, for example, the patrol refused to allow Department of Natural Resources staff to use snowmobiles on the roadway and right of way to provide information and help to the stranded motorists. Since then, the State of Wisconsin has attempted to remedy the situation with new procedures and protocols, but it should have never happened.

4.1 Define response protocols and procedures for coordination and control among state agencies and with local governments

Cooperation among state agencies, between local governments, and between local governments and state agencies is necessary for effective emergency response. Similarly, state governments are able to ensure the development of response protocols that spell out intergovernmental roles and specify decision roles and rules governing response to emergencies that occur at local government boundaries or that cut across local boundaries. And, they can do this before the emergencies occur so that valuable time is not wasted wondering who should do what as the fire crackles or the flood waters rise.

Coordination and control at disasters have been a persistent problem. The terrorist attacks in the United States over the past decade further complicated matters. Emergency personnel and rescue workers are constrained when the disaster site is also labeled a crime scene. To help address coordination and control issues, the Department of Homeland Security created, through FEMA, a National Incident Management System (NIMS), which, it is hoped, will provide the guidance necessary to facilitate coordination and control in disasters and imminent disasters.

Incident management has been used for some time by some fire departments and is increasingly used by the United States armed services to coordinate activities across the services in combat. Adoption of the Incident Management System is moving steadily forward among governments. State governments facilitate and reinforce its adoption and application with training programs and financial incentives for participating governments that meet acceptable levels of performance. The states might also, for example, establish statewide protocols for badging and credentialing people entering disaster sites.

A very important part of defining response protocols and procedures is to fix both responsibility and accountability for taking on activities and ensuring their completion. It is easy, in a time of emergency, for things to be fall into the cracks and be overlooked until the smoke clears and it is too late. Assigning responsibility and accountability requires collaboration between agencies and levels of government.

4.2 Establish effective inter-Agency and Intergovernmental Communication Systems and Procedures

Effective interdepartmental and intergovernmental communication requires both appropriate behaviors and appropriate technology. A big part of the snowbound problem in Wisconsin was behavioral. Effective communication plans, defined role responsibilities, and decision protocols were not in place when they were needed.
Discussions about communication issues in emergency response agencies, however, tend to focus on technology. Too often, law enforcement and public safety personnel are often unable to communicate with one another easily and directly because their communication technologies are not interoperable. The rapid growth of communication technology has led to a hodgepodge of communication technologies, crowded bandwidths, and a host of related problems. Some regions have serious dead spots from which emergency personnel cannot communicate with one another. Sometimes, even fire and police departments within a given jurisdiction cannot communicate directly.

Interoperability problems are typically exacerbated because state agencies and local governments cannot agree among themselves about which system or systems will be used. Agencies that have already made a significant investment cite their sunk costs and their reluctance to spend more. Others fall victim to the “not invented here” syndrome. Still others are simply unwilling or unable to spend money on new systems. All of this results in stalemates, hard feelings, wasted money, and continued communication problems.

4.3 Ensure that State Agencies and Local Governments have Highly Competent Emergency Response Teams

States can mandate that local governments have adequate emergency staffing and training to deal with emergencies. They can facilitate the creation of mutual aid agreements among local governments so that, when emergencies stretch the capacity of a single local government, others will come to its aid. And, states can ensure that they have appropriate emergency response teams.

Training is critical. For years, police, fire, and emergency management personnel have had access to advanced training programs operated by FEMA and the FBI, but not everyone gets to go. It is an honor reserved for a few top performers. Still, training is needed for every emergency worker. The states play the crucial role of ensuring training and establishing performance and staffing standards.

4.4 Protect Citizen First Responders and “Good Samaritans”

In the United States, the first responder to an emergency is often a citizen. Americans respond to emergencies around them almost automatically and instantly. Sometimes, the responder doesn’t have the requisite skills, but, other times, he or she has exactly the skills needed at the time. Official emergency responders often work to clear the area of volunteers so they can do their work, but, when the event is extreme, there are rarely enough professionals to go around. The big questions surrounding citizen volunteers are how best to use them and how to ensure a pool of citizens trained to do jobs that need to be done, such as providing CPR and first aid before medical workers arrive, helping flood victims, and so forth. Planning for effective response to extreme events must include consideration of how best to integrate civilian responders into the system.

At the same time, state policies should protect those citizens who help victims, either in the midst of the disaster or in the aftermath, from subsequent suits or penalties for their good faith efforts.
POLICY 5. ESTABLISH SYSTEMS TO PROTECT PEOPLE

Despite precautions taken to prevent or reduce the consequences of extreme events, those events sometimes overwhelm the precautions or come as a complete surprise. At those times, it is essential that policies and procedures are in place to protect those people in danger.

5.1 Ensure Adequate Warning Systems

Not everyone heeds warnings. People go swimming when dangerous rip currents are in evidence. Not everyone gets a flu shot. People still smoke and obesity is not going away. Some people even approach tornados to get a better photo and others hold “hurricane parties.” In Crescent City, California, a few lost souls went down to the beach to watch the oncoming tsunami triggered by the great Alaskan earthquake in 1964. Even so, most of us are generally rational. When warned of an imminent danger, we take at least some precautions.

States can create warning systems, ensure that they are working effectively, and ensure that people know what to do when the warning system is triggered. Tornado warning systems are almost always operated by local governments, but states are in a position to make sure those systems are in place and working. Hawaii has an excellent warning system for tsunamis. Television and radio stations announce the possibility of a tsunami when certain events occur and issue warnings as soon as they are received. People at beaches are warned to leave them. Bus drivers are trained. They know to load up and take people to designated places on higher ground. If you don’t know what to do or where to go, broadcast stations advise you to look inside the first few pages of your telephone book. No matter where you live on the islands, the information in the telephone book advises you of what to do and where to go.

State governments can ensure that adequate warning systems for a variety of extreme events. Warning systems include more than sirens. People need to know about the hazard, know what the warning will be, and know what to do and how to do it to protect themselves when they hear or see the warning. Not everyone is good at looking a cloud conditions and knowing whether a tornado is likely. Everyone who can hear it, though, can be taught what a tornado siren sounds like and how to take cover.

Not only must warning systems be in place, but they must be in working order and be triggered when needed. The broadcast media and the internet are important vehicles for passing on warnings of flash floods, rising water, approaching severe storms, and chemical and biological threats. The states can help to ensure that complementary systems are in place for detecting and communicating threats to our well-being.

Seeking safety is, of course, each person’s responsibility, but government can and should facilitate their efforts. State government can support and facilitate public awareness and education programs. People need to know what the danger is, what to do when it threatens, and when to take action. Given Americans’ mobility, millions of us find ourselves in new places with new risks every year and need to learn about them.

5.2 Educate Residents and Visitors on How and When to Shelter in Place

When evacuation is not practical because the extreme event comes without warning or because there is nowhere to go, people must know how to shelter in place at their homes, workplace, or school, and in community shelters. State governments can
mandate local governments to create shelter programs to ensure the availability of adequate facilities and supplies for those hoping to escape floods, severe heat or cold, strong storms, industrial accidents, and other hazards. State governments can conduct public information campaigns alone or in concert with others.

Shelter in place programs are particularly effective in emergencies that unfold rapidly or that do not hold the likelihood of complete destruction. The prerequisites for seeking shelter are to know that the event is imminent, to know what to do and how to do it, to understand that now is the time for action, and to be able to take action. Sometimes, the best one can do is to drop to the floor and crawl under a desk or table. With a little more warning, one can take shelter in a storm cellar, a safe room, or in an inside room with sturdy walls and no windows.

States can take the lead in training people about how and when to take immediate shelter in place or in community shelters. States can subsidize the development of safe rooms in homes and commercial buildings through tax incentives, accelerated depreciation, and free, readily available building plans. In cooperation with others, they can also hammer home the need to keep emergency supplies in the home, at least during the most critical months for given kinds of disasters. The media are usually willing helpers in campaigns of this nature.

5.3 When Possible, Remove People from Harm’s Way

A drive east along Highway 90 from Pass Christian to Ocean Springs, through Gulfport and Biloxi, Mississippi is convincing evidence that it is impossible to protect the built environment from the ravages of huge natural hazard events, such as Hurricane Katrina’s storm surge. Sheltering in place along the shoreline was not a viable option when the storm surge from the Gulf of Mexico was 28 feet high and moving fast when it slammed into Gulfport. The surge crashed through both new and century old buildings as though they were made of cards, carried the debris inland for blocks, and then dragged it back along with even more debris, destroying whatever was left, as the water drained back into the Gulf and littered the beach with the remnants of what had once been.

Longer and increasingly reliable warnings hold the prospect for making evacuation of large numbers of people from the area in greatest danger. Evacuating large metropolitan areas has proven particularly difficult for both behavioral and technical reasons. People are generally reluctant to leave until they are convinced the danger is palpable and, even then, some refuse to leave despite reliable assurances of dire consequences. Others are unable to do so on their own. And then, most American urban and inter-urban transportation facilities are neither sized for nor designed for mass evacuation in a short period. Consequently, evacuation routes become extraordinarily congested, traffic slows to a crawl, and people may find themselves simply exposed to danger on the highway rather than at home. Only rarely are plans made for where people should go when they do evacuate, so hotels and motels fill quickly and people are generally left to their own devices to “wait out the storm” and, ultimately, return to whatever may be left of their homes.

The attempted evacuations of Houston from Hurricanes Rita and Ike demonstrate the extraordinary difficulty, perhaps futility, of evacuating a large urban area. It did not work. Then, too, as in New Orleans, thousands are left without the means to evacuate and no place to go, even were they able to leave. These included the poor, many of the frail
elderly, and those who were hospitalized and nonambulatory. We have not devised means for addressing those problems in our metropolitan areas, but they do have to be addressed and the states have to take the lead.

State governments will be held responsible for taking the lead in developing effective evacuation plans, procedures, and facilities coupled with other means of providing safe havens. Few states have multi-jurisdictional plans for marshalling ambulances, busses, and other kinds of vehicles for transporting those who are unable to transport themselves. Gasoline and other supplies must be available along evacuation routes to keep traffic moving. Evacuation invariably requires crossing local jurisdiction boundaries, so the state must work to ensure the development of action plans that ensure cooperation and coordination of local public entities.

Providing for evacuation is rarely, if ever, included in the design criteria for highways, mass transit systems, and airports. It makes sense to incorporate that need into the design of transportation facilities in areas of the country where they are most needed.

Care for Survivors

Extreme events almost always require emergency medical treatment and emergency supplies of food, water, and shelter. Despite common perceptions, FEMA is not a first responder and has never been intended to be. FEMA’s job is to help when disasters overwhelm or look like they are going to overwhelm local and state capability. State and local governments are responsible for initiating immediate response, rescue efforts, and care for the survivors. They are assisted by not-for-profit organizations such as the Red Cross.

Recent disasters make it clear that local governments rarely have everything they need to respond to emergencies that are out of the ordinary. Support has to come from neighboring communities and from the state. Extreme events are more likely to occur in a state than in any given local jurisdiction, so it makes sense for the states to position themselves to backstop local governments with the more specialized resources needed in large emergencies. Few local governments maintain, for example, highly trained search and rescue teams, complete with dogs trained to find survivors or bodies. Such teams exist in most states, however, and the states should take the lead in supporting them so they are available to be called in to help early in the disaster. Local governments or hospitals may not stock emergency, mobile medical treatment facilities, but the state can do so, perhaps through its National Guard contingent. Similarly, few local jurisdictions will maintain materials to care for large numbers of dead. Thus, it is probably up to the states to maintain an inventory of body bags and to arrange for transportation of the dead when local resources are strained, to assist with the creation of temporary morgues, and to facilitate identifying the dead.

There is no guarantee that FEMA will be able to respond even within the first few days of a disaster, particularly if the disaster covers a large area or if there are multiple, simultaneous disasters. Thus, the states have to be prepared to act to ensure the availability of emergency food, water, and shelter and to assist survivors in the efforts to reconnect with family and friends.
The federal government provides considerable assistance when an extreme event results in a Presidentially-declared disaster. FEMA helps rebuild public infrastructure and helps some not-for-profit organizations rebuild or repair their facilities. It provides temporary housing for residents. The Department of Housing and Urban Development provides housing vouchers and Community Development Block Grants to help households and communities. The Economic Development Administration in the Department of Commerce funds projects for economic development. The Small Business Administration provides low interest loans to businesses affected by the disaster. The federal programs are invaluable for supporting response and rebuilding the physical environment.

The problem is that, while there is lots of support for rebuilding, there is little support for repairing the nonstructural parts of the community system. Local officials are responsible for making plans and for cobbling together projects that may be funded by various agencies in their attempts to rebuild the community system and to make the community viable in the post-disaster milieu. Unfortunately, local governments are only rarely in a position to do that by themselves.

Most local officials have had very little experience in facilitating community recovery. Local governments are usually well-equipped to deliver services and to manage construction, but they are rarely staffed with the requisite skills for “mending” a broken community. State governments can greatly assist local governments to facilitate community recovery by providing technical and temporary support staff, ensuring that Federal funds are directed to the areas critical for recovery in disasters that cross local boundaries.

**POLICY 6. ENSURE THE AVAILABILITY OF APPROPRIATE INSURANCE FROM VIABLE INSURERS AND ACTIVELY ENCOURAGE INDIVIDUALS AND ORGANIZATIONS TO INSURE AGAINST LOSSES DUE TO EXTREME EVENTS.**

People and organizations lose assets during and following extreme events. Buildings, their contents, production facilities, and inventory are damaged or destroyed. Homes and dishwashers become unusable and wet carpets unsalvageable. Soaked or crushed automobiles are useless. In New Orleans, piles of expensive boats along the shore and smaller boats randomly distributed throughout the flooded areas represented more lost assets.

Rebuilding and recovering require money. To the extent that assets are lost and cannot be covered by savings or insurance, recovery for individuals and businesses is slowed dramatically. State governments can be the most help in preserving assets by ensuring the availability of appropriate property and casualty insurance policies offered by viable firms in their states and by actively encouraging individuals and organizations to insure themselves against losses from extreme events.
6.1 Ensure Local Government Participation in the National Flood Insurance Program

Traditional home owner and renter policies do not cover losses due to flooding. Every year, thousands of homes are flooded and the owners find themselves uninsured or underinsured for their losses. If the losses are exceptional and the home is in a particularly dangerous area, the owner may benefit from a “buy-put” program. The federal government finances local government buy-outs of property in dangerous areas and property damaged in more than one extreme event. The home is razed and the land is converted to nonstructural uses. The owner may thus recover some or all of his or her losses. Those who are not bought out and uninsured or underinsured are left to suffer.

The Federal government responded to the inability of private insurers to profitably provide flood insurance by creating the National Flood Insurance Program in 1968. It offers heavily-subsidized flood insurance to homeowners and renters. About five million policies are in effect, partly because homes in places designated as Special Flood Hazard Areas whose owners seek federally insured mortgages must purchase flood insurance as a condition of obtaining the mortgage. For homeowners and renters to buy NFIP flood insurance policies, the local jurisdiction within which they live must be a program participant. Recent research indicates that just about half of the homes located in Special Flood Hazard Areas have flood insurance programs. The highest participation rates, about 60 percent, are in the West and the South. The Midwest, where only about 22 percent of homes in Special Flood Hazard Areas have flood insurance is the lowest participating area in the nation.1

When uninsured or underinsured homeowners and renters suffer losses in floods, they almost invariably look for someone to bear their losses. Usually, they look to the Federal government. Sometimes the Federal government comes through for them, inadvertently creating a powerful incentive for people to avoid the costs of insurance in favor of an expected bailout.

It is incumbent on the state governments to ensure that local governments within their boundaries enroll in the National Flood Insurance Program. This can be accomplished by offering a combination of incentives and sanctions. Ensuring that everyone in the state is eligible to buy flood insurance will help reduce raids on the Federal treasury and make funds available for other critical disaster recovery purposes.

6.2 Ensure the Availability of Property and Casualty and Business Insurance from Viable Insurers and Actively Encourage Owners to Obtain Insurance

Insurance is a critical component of a comprehensive disaster risk management strategy. It can play an important role in disaster risk reduction when insurers provide incentives for risk reduction. The fundamental goal is to enable viable insurers to provide disaster coverage to homeowners, renters, businesses, and local governments at rates acceptable to both buyer and seller. However, it has proven difficult in the private market to provide such insurance at rates customers can afford and insurers are willing to offer it. It is in the interests of all parties -- the insurance industry, state governments, state and federal taxpayers, and everyone who needs insurance -- to devise solutions to the property and casualty insurance dilemma.

The dilemma can be stated simply. Insurers base premiums on anticipated claims. For events like automobile accidents, actuaries can establish frequency distributions and
probabilities of how many accidents and will occur and claims will be made on any given day. The same is not true for extreme events. When a catastrophic event occurs and triggers claims from many or most of the policy holders, few firms have the reserves to cover the claims even when supported by reinsurance. Moreover, those attempting to calculate rates for floods, earthquakes, and hurricanes find themselves in a small boat in rough water. It is essentially impossible to predict when they will occur with any reliability and, when they do occur, they generate massive claims. Moreover, the market for automobile insurance is nationwide, but the demand for earthquake and hurricane insurance is limited geographically. The only people who will buy such policies are those most at risk. It is as though the only drivers who buy insurance are those most likely to have accidents. Thus, it is extremely difficult for insurers to offer appropriate insurance at premiums those who want to be insured can afford. The problem has yet to be solved, but remains critically.

The states, so far, have a pivotal role because insurance regulation is primarily a state responsibility. Serious problems have arisen in the states most subject to extreme events, particularly hurricanes and earthquakes. State officials want to be responsive to the needs of voters, so they work hard to ensure low rates and broad coverage. Insurers want to make a profit, so they are reluctant to offer policies at low rates and, thus, expose themselves financial ruin when a catastrophic event occurs. This sometimes leads to dysfunctional behaviors. Some insurers have played a risky game, offering insurance against extreme events at prices inadequate to cover claims, should the event occur while they insure the property. In Florida, eleven insurance companies failed in the wake of Hurricane Andrew in 1992, leaving many policy owners in desperate straits. On the other hand, states have sometimes required insurers to offer disaster insurance if they want to sell other kinds of insurance in the state. Florida has attempted to deal with the challenge by creating its own insurance program for hurricane damage, but some have raised questions about the ability of the state program to cover the losses when an event occurs.

The issues surrounding the availability and pricing of insurance against disaster should be of concern to all of us. Insurance companies work hard to ensure that they can offer policies and remain solvent when a large extreme event occurs or in the event that two or more extreme events should occur in a short time period. One strategy has been to limit the number of policies sold in any specific geographic area. Another is to purchase re-insurance from international firms that specialize in insuring insurers. Even so, insurers are at risk of failure if there are multiple extreme events in a relatively short time period. This affects us all. If property and casualty insurers become insolvent, it will become difficult to build schools and hospitals, for example, because insurance firms comprise a large market for the bonds sold to finance construction of those schools and hospitals and because the schools and hospitals need insurance to protect themselves from the normal array of claims against them.

Local governments also need insurance. Self-insurance too often means no insurance at all. Self-insurance by individual governments is generally unworkable unless the individual government maintains a stop-loss policy with an insurance underwriter. Thus, it makes good sense for local governments to develop cost-effective means for insuring themselves. In Florida, the cities of Stuart and Port St. Lucie and the counties in which they exist, St. Lucie and Martin, team up to jointly seek insurance to protect
themselves in the event of hurricanes. By creating a larger pool with more buying power, they are able to obtain appropriate insurance not long before they were damaged by Hurricane Wilma.

The disaster insurance dilemma must be resolved. Devising a workable solution will require a collaborative effort of state regulators, insurers and reinsurers, and, most likely, the federal government. Resolution may require that the federal government create a reinsurance or stop-loss program in which it steps in to cover claims in excess of what the insurers are able to provide, given some level of premiums. In any event, the dilemma must be resolved.

POLICY 7. DEVELOP DISASTER RECOVERY PLANS IN CONCERT WITH LOCAL GOVERNMENTS

7.1 Develop a statewide disaster plan outlining who will do what and how they will do it in the event of an extreme event.

Most states have emergency operations plans. Some have disaster recovery plans. Disaster recovery plans do not detail what a community should do following a disaster. Instead, state disaster recovery plans are essentially guides on roles, processes, and activities during the recovery effort. That makes sense, since each disaster is unique, and developing specific recovery strategies must follow the event. The North Carolina Disaster Recovery Guide, for example, “provides an overview of the state’s responsibilities in providing long-term recovery assistance after a major disaster. It provides a resource to guide and directs the long-term recovery, rebuilding, and redevelopment in the days, weeks, months, and years after a disaster.” The most current version of the Recovery Guide can be found on the Internet (http://www.osbm.state.nc.us/disaster).

The South Carolina Recovery Plan is quite similar. It was “developed for use by the State and local governments and volunteer organizations to ensure a timely recovery from emergencies that affect the State of South Carolina. This plan identifies actions to be taken and the assistance available to support the citizens of South Carolina and to return the State to normal conditions.” The guide provides basic information on the responsibilities of federal, state, local governments, and nonprofit and private organizations as they pertain to disaster recovery.

Florida is perhaps the most advanced state in terms of planning for post-disaster recovery. Florida has learned a great deal from what happened following Hurricane Andrew and has taken important steps to improve both its resistance to extreme events and its recovery processes. The state’s Department of Community Affairs initiated and supports a post-disaster redevelopment planning process in both the state’s coastal and inland communities. The effort is truly intergovernmental, involving federal, state and local government, state universities and Florida planning organizations.

7.2 Following a disaster work with local governments and private organizations to map out regional recovery strategies.

Extreme events almost always occur across local government boundaries, spilling into two or more jurisdictions. Yet, most recovery planning is done by individual local government entities without much thought to what is required for recovery beyond their
immediate borders. The states can work collaboratively with localities to devise metropolitan or regional recovery strategies – plans for areas that correspond to the physical and economic community, but almost never correspond to the boundaries of any given local government. In so doing, the state can provide financial incentives for cooperation and collaboration and can ensure that important regional recovery activities are funded.

It is easier for the states to support its metropolitan or regional recovery strategy when the Federal government provides Community Development Block Grant Disaster Recovery funds directly to the state. These funds are made available from the Department of Housing and Urban Development to state governments, general purpose local governments, and Indian tribes where an extreme event results in a Presidential Disaster Declaration.

In some states, all the Community Development Block Grants (CDBG) go to the state. Local governments then apply for funds from the state’s allotment. The arrangement works well when the state is able to survey the entirety of a disaster that cuts across jurisdictional lines or that is regional in scope. Under such circumstances, the state is able to allocate funds so that problems cutting across political boundaries can be addressed appropriately. Problems occur when the state is slow to allocate money or when the allocations are based more on political than on problem-driven criteria. Underrepresented groups and communities have suffered when funds go to more vocal and influential communities.

In every disaster, debris removal becomes a problem. Most communities have the technology and skills needed to collect debris or to contract to have it done. Agreeing on how and where to dispose of that debris is often another matter, and it can be quite contentious. Not all debris is as benign as branches from healthy trees. Some is downright biologically or chemically hazardous. Resource recovery is often a consideration. And, unless there are county-wide or regional sites agreed upon for disposal, individual municipalities in a metropolitan area may be left to their own devices to find a suitable place and suitable procedures for disposal. The state can be of great assistance in identifying procedures and sites. Similarly, the states, counties, and municipalities should agree in advance as to who will pay for and arrange for removing debris from various streets and highways. It is too important a point to waste time after the disaster to allocated responsibilities within various communities for debris removal.

Very early after the immediate emergency, it is important to begin the process of identifying immediate and system consequences for the community and the region. One important element of that reconnaissance is an assessment of the economic consequences. Only if the consequences are understood, can a sensible strategy and set of activities be outlined to facilitate stabilization and, then, recovery. One should fully expect consequences to unfold for weeks and months after the disaster, but the intelligence-gathering function should begin almost at once. That way, steps may be taken almost immediately to reduce the extent or likelihood of cascading economic consequences.

“Path dependency” is an important consideration in initial steps to reduce cascading economic consequences or to stimulate the local economy. Path dependency means that subsequent steps are greatly influenced by preceding steps. Short term interventions may have important long term consequences. Thus, it becomes important
for those devising strategies and economic interventions to foster local economic recovery pay particular attention to the likely longer term consequences of their actions.

**POLICY 8. PROVIDE FOR THE CONTINUITY OF LOCAL GOVERNMENT OPERATIONS FOLLOWING A DISASTER**

8.1 Ensuring Municipal Financial Viability Following Disaster

Following extreme events, even prudent local governments often face fiscal crises as expenses skyrocket and revenues decline. Increased expenses are the result of having to take on tasks for which funds are rarely budgeted and demand for regular activities typically increases, often dramatically. If the event is designated by the president as a disaster, the Stafford Act provides that up to 75 percent of eligible costs (and sometimes more) will be reimbursed by the federal government. One problem is that financial assistance from the federal government is reimbursed, not advanced, and local governments rarely have the reserves to bridge the gap between when the money is needed and when it is reimbursed. Moreover, the local government must demonstrate that the costs were generated directly by the disaster because routine operations are not reimbursed by the federal government.

At the same time, disasters usually have huge adverse impacts on local government revenues. People stop paying ad valorem property taxes when the property is no longer there. If the local government gets an annual share of sales taxes generated in the community, that share almost invariably declines dramatically in the immediate aftermath of a disaster. State aids to schools are usually based, at least in part, on enrollments that are counted shortly after the beginning of the school year. When the disaster forces families to move away, even temporarily, enrollments can plummet, just when the local government most needs the funds.

Almost immediately after Hurricane Andrew, the Florida State legislature enacted a law to help local governments in Dade County hard hit by Andrew. State officials reasoned that all the work necessary to clear South Dade and to rebuild it would generate enormous sales. The state pledged the bulge in sales tax revenue to the South Dade communities for a period of three years. It turns out, in the case of Homestead and nearby communities, that three years was not long enough. Still, the policy was an innovative and useful way to address a difficult problem.

Other states have responded in different ways. Following extensive flooding in Grand Forks, North Dakota, the state Department of Public Instruction asked all North Dakota school districts to accept children who were displaced by the flood for the balance of the school term. The state assured school districts that they would receive financial assistance for those students enrolled at their schools. The Department also reached agreement with officials in the neighboring states of Minnesota and South Dakota to admit displaced students to their schools regardless of their state of residence.

Iowa has enacted formal rules for local school districts when counting students following disasters, including the following:

- Districts should ascertain whether displaced families intend to return within a reasonable period of time to their pre-disaster resident district so the district can gauge the likelihood of their return.
• The students of displaced families who intend to return and who will continue their education in their home district without interruption are to be included on the certified enrollment of the resident district.

• The students of displaced families who intend to return, but whose education will be provided in the district where the family lives temporarily are to be included on the certified enrollment of their home district. The home district will reimburse the serving district amount for the days served.

• Families are not to use open enrollment for these situations; open enrollment funding does not include all of the funding that accrues to a district per certified enrollment of a resident student. II

Since every state is subject to extreme events, it is important for each state to devise standard operating procedures concerning students who are displaced by those events and to enact legislation to help both the districts that lose the students and those that accept them temporarily with the financial implications. Similarly, provisions should be enacted to help local governments address the financial demands occasioned by disasters for which federal disaster reimbursement is not available, including bridge financing.

It is not just the communities that are hit by extreme events that find themselves in financial straits in the aftermath. Baton Rouge, Louisiana, for example, had extraordinary post-Katrina costs because so many people and businesses that left New Orleans evacuated to that community. Baton Rouge experienced massive increases in school enrollments, traffic, traffic accidents, crime, and demand for housing without benefit of assistance from the outside. Another example centers on hospitals in suburban New Orleans. They found themselves inundated by the poor and uninsured that were displaced by the flooding in Orleans Parish. Hospitals in New Orleans had received payments from the State of Louisiana to care for the indigent, but those payments did not follow the poor to the suburban hospitals. The financial consequences for those hospitals have been severe.

8.2 Information Security

Extreme events often have disastrous effects on vital information. The water and mold from Katrina destroyed medical records, school records, law enforcement records, court records, and driver's license records in Louisiana, Mississippi, and Alabama. Without them, Katrina survivors had trouble proving where they lived, what they owned, or even their identity. IV Extreme events play havoc with paper and other ‘hard copy’ documents as well as for electronic files.

Without accurate information and ready access to it, business and governments grind to a crawl. The states can take the lead in ensuring the safety and security of, at least, important records from all levels of government within the state. Standards should be established for storing and maintaining critical records and information and for backing up that information in safe locations. It has been demonstrated time and time again that, without such guidance, people and organizations do foolish things with important documents and information.
8.3 Provide Support Staff and Technical Assistance

Local governments face extraordinary demands following a disaster, with each vying for immediate attention. Debris must be removed, utilities must be restored, infrastructure must be rebuilt, public safety must be assured, rebuilding and recovery plans have to be developed, and on and on. Not long after the dust settles or the mud begins to dry, requests for building and restaurant permits and inspections will soar, overwhelming local building and health departments. Lengthy and often complex forms must be completed to request funds under the auspices of various programs. Information must be retrieved to support requests. One thing all federal assistance programs have in common is that virtually every dime for which a local government seeks reimbursement must be eligible and accounted for. If the procedures are not followed or the money cannot be accounted for in the desired form, the federal agencies will ask for the money back. Few local governments are staffed to meet these demands.

Here’s what state government can do. Some states provide temporary staff assistance to local governments to help meet the urgent demands and increased workload. States can also facilitate arrangements for having unaffected local governments provide temporary assistance to those in need of help. FEMA will reimburse disaster related costs, so the “lending” government can be reimbursed for its costs.

Some states also provide specialized technical support to address specific problems. The State of Georgia, for example, provided at least one small community with a full time staff member for more than a year to help the community work its way through the Federal paperwork maze. In Minnesota, state staff helped communities ravaged by floods devise a program for building new housing to meet urgent demands. The states can help with paperwork, installing new procedures, helping with strategic analyses for community and economic development, identifying possible sources of funds, and, later, working to help ensure the emotional and mental health of survivors with problems.

8.4 Help Local Areas with Disaster Recovery Funds

States may not be in a position to augment federal assistance by providing major grants to local governments, business and not-for-profit organizations, and individuals to facilitate recovery. However, states are able to establish quasi-governmental organizations to receive gifts from individuals and corporations for the purpose of disaster relief and recovery. Such quasi-governmental organizations could prioritize investment needs for specific communities working to recover from a disaster. The organization could provide that information directly to potential donors for them to decide what they might want to finance. Or the organization could pool donor funds to work directly from the list of priorities to fund priority project. It would be appropriate for the board of directors of such an organization to include representatives of donor organizations as well as public officials.

POLICY 9. REPAIR OR REBUILD CRITICAL STATE-OWNED INFRASTRUCTURE RAPIDLY AND, IF APPROPRIATE, ACCELERATE PROGRAMMED INFRASTRUCTURE PROJECTS
Following the Northridge Earthquake, California state government took unprecedented steps to rebuild the badly damaged Santa Monica Freeway (“The 10”) quickly. The freeway was vital to both commuters and shippers. Every day it could not be used resulted in large losses of time and money. Contracts that included major financial incentives for speedy rebuilding were let and the freeway was quickly repaired and back to full capacity.

The states can help speed community economic recovery by rapidly repairing or rebuilding important infrastructure and by working to reestablish full employment at its facilities within the affected areas. Policies should be in place to facilitate accelerated repair or replacement.

Following extreme events, economic stimuli may be particularly desirable in affected areas. In such cases, state should be prepared to accelerated projects already programmed for those areas. Even though the projects may not yet have been budgeted, funds may be available through block grants, other federal programs, or other sources.

**POLICY 10. EXPEDITE PERMITTING AND LICENSING BUSINESSES NEEDED SHORTLY AFTER THE EXTREME EVENT**

In virtually every community experiencing a disaster, large numbers of people arrive from outside the community to help clean up and rebuild. They include employees of large firms with contracts to remove debris, clear building sites, and create new buildings. They also include sole proprietors and self-employed workers who move from disaster to disaster to remove mold, plaster, and mud. They include volunteers from religious groups, colleges, and neighboring towns who come to help. Experts from communities far from the disaster arrive to help restore power, relieve emergency workers, and operate water and sewage treatment facilities. FEMA and Red Cross workers arrive.

**10.1 Licensing Retail and Service Organizations**

All of these people need food and shelter, just like the survivors. That means that restaurants require inspections and permitting so they can open to serve the swarms of workers. Opening restaurants, gasoline stations, pharmacies, grocery stores, hotels, motels, and day care centers are high priorities in the first few days following a disaster. Most of these kinds of businesses require local and/or state inspections before they reopen for business. Normally, permits and inspections take some time, but, during the early recovery stage, any delays are particularly difficult for all concerned.

All this means that inspections and permits should be expedited. States can facilitate this process without jeopardizing health and safety. One way, when state approval is needed, is to provide “front of the queue” processing for specified kinds of permit and inspection requests in disaster areas. A second way is to help local governments staff up by ensuring that local governments get help from neighboring jurisdictions and from the state itself. A third way is to devise contingency procedures for inspection and permitting to be implemented during disaster recovery.

**10.2 Licensing Contractors and Specialty Trades**

Following a disaster, local construction crews and other people with special skills can rarely fill the demand for their services, particularly if the disaster covers a
significant geographic area. That usually means that workers and contractors arrive in the community ready to work, often without required licenses. In most communities, electricians, builders, and others can do business only if they are licensed by the local government or by a state agency. Some individuals and firms should be licensed, but some should not. Every disaster brings unqualified workers and charlatans ready to prey on unsuspecting homeowners who are impatient to have mold eradicated from their homes, their roofs repaired, or their wiring made usable. And, in every disaster, scams are commonplace.

The state can greatly assist local government license individuals and firms by working with local governments to conduct background checks and test applicants. It may be appropriate for the state to actually take on the function of licensing contractors for certain kinds of activities, especially in cases in which statewide codes exist.
CONCLUDING COMMENTS

THIS IS STEP ONE

This is the first step in a larger project to help state governments protect their communities from extreme events and, if the protection proves inadequate, to help them recover from disaster. This report identifies the “Top Ten” disaster prevention and recovery policies each of the states should have in place before the next inevitable disaster strikes.

For this report, we looked at how extreme events can lead to community disasters and how the consequences of extreme events became obstacles to recovery. We used that information to identify important things state governments can do to take precautions to reduce adverse impacts from extreme events, prepare themselves and their constituent local government for responding to disasters and helping communities recover from disasters. The Top Ten policies flowed from that analysis.

THE NEXT STEP

The next step in the project is to learn what the individual states are actually doing in term of the top ten policy clusters. The research team will identify and describe the best practices among the states for each policy clusters. The team will assess the extent to which each of the states has created the disaster-related policies and enacted programs to implement them. The resulting score card, coupled with the best practices information, will provide officials and disaster preparedness advocates with the means for knowing what remains to be done in the various states.

This second step requires devising criteria for evaluating the extent to which each state is prepared to respond to a disaster and to help with recovery. The team must identify which states are doing what, which states have the best programs, and learn where the various states stand in terms of mitigation, preparedness, and their ability to help communities recover from extreme events.

This next step is not an easy one, nor can it be done in a few weeks, but when completed, it will provide a wealth of important and useful information to those who need it most.

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\(^i\) Lloyd Dixon, Noreen Clancy, Seth Seabury, and Adrian Overton, The National Flood Insurance Program’s Market Penetration Rate, Santa Monica: RAND, TR-300-FEMA, 2006,

\(^ii\) The South Carolina Recovery Plan, Appendix 6, South Carolina Emergency Operations Plan (SCEOP).

\(^iii\) E-mail conversations with Gary D. Schwartz, Finance, Facilities and Operations Services, Division of School Support and Information, Iowa Department of Education, Grimes State Office Building, 400 East 14th Street. Des Moines, Iowa 50319-0146.

\(^iv\) Nikki Swartz, Information Management Journal, Tuesday, November 1, 2005.