

## Assessing and Managing Environmental Risk: Connecting Local Government Management with Emergency Management

### Academic–Practitioner Exchange: Environmental Emergency Management at the Grassroots

*Ensuring that a community is prepared to deal with a disaster is among the many tasks public managers are charged with addressing. Disaster preparedness and response requires adherence to standard planning practices, yet disasters are typically unpredictable. Dealing with disasters, therefore, requires a blend of traditional management skills and improvisation. Furthermore, like other aspects of administrative leadership, the top administrator must blend initiation and responsiveness in interactions with elected officials and a careful delineation of responsibility in handling actual emergencies. This article discusses how local administrators assess risk and balance preparedness needs within a universe of daily operational needs. Managing environmental risk is also explored from a political and legal context.*

Recent events have raised the centrality and importance of emergency management as part of the responsibilities of local government managers. Still, for most local governments most of the time, emergencies are an unlikely development. There is an inherent inconsistency between “management” and “emergency.” Management seeks to control and regularize activities. It seeks to reduce variation across a wide range of occurrences and to achieve optimal conditions. In contrast to normal management problems, emergencies are rare and unique. Some aspects of emergencies can be “managed” in a traditional sense, but anticipating emergencies takes managers into the realm of uncertainty, and responding to emergencies requires creativity and flexibility in dealing with circumstances that cannot be fully anticipated.

Three aspects of emergency management are considered in this essay. First, how do local government managers anticipate the unpredictable and assess risk? What is the extent of resources that should be devoted to preparing for emergencies and mitigating hazards? How much is

enough? What is the level of “acceptable” risk? Addressing these questions is a prime example of how top administrators help elected officials and the community understand the big issues that affect the future of the community—that is, the determination of the “mission” of the city or county government (Svava 1985, 1999). Elected officials ultimately will determine goals, the scope of services, and broad approaches to allocating resources, and they depend heavily on professional staff to raise issues, identify needs and trends, and formulate strategies. It is a professional responsibility to engage in the practice of taking a long-term and community-wide perspective (Keene et al. 2007). Emergency preparedness must be part of providing for the long-term welfare of the community.

Second, how do local government managers handle the aspects of emergencies that can be regularized? Leaders in local government can plan for and establish procedures and systems for managing emergencies that will be used when an emergency occurs, but they do not necessarily do so. The need for emergency management planning and preparations that are so obvious once a crisis occurs may easily be overlooked in normal conditions when the prospects of a crisis seem remote.

The third aspect of emergency management is handling the emergency itself. Preparations are critically important, but the ultimate test is how officials and the community are able to respond when an emergency occurs. Top administrators are generalists and cannot focus on emergency management exclusively. They must integrate the anticipation and management of emergencies into their overall leadership and management roles.

Top administrators in local government—city managers, chief administrative officers, and county

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administrators—advise elected officials in formulating policy and determining services; uphold the law, implement policy, and deliver services; and direct or coordinate the administrative structure and manage the resources of the organization. They balance responsiveness to the preferences of elected officials and demands from citizens with a commitment to promote the public interest for the community as a whole and to advance professional standards and successful practices (Svara 2006). Often, there are tensions between responding to the aspirations and pressing needs of the moment and addressing important potential problems and long-term needs. The creative tension between “political” and “professional” accountability embodies the continuing challenge of reconciling these perspectives (Romzek and Dubnick 1987). City and county managers set the tone for their organizations and help shape organizational culture and values (Denhardt and Denhardt 2001). Their leadership in all its dimensions affects how capable the people and the systems of the organization are to respond to adversity and unexpected events. Examining approaches to emergency management highlights the essential issues in achieving responsible professional leadership.

### Assessing Environmental Risks to Cities and Towns

Disasters take many forms, including natural (e.g., earthquakes, hurricanes), economic-technical (e.g., power failures, chemical spills), social (e.g., riots, violent labor strikes), and political (e.g., terrorism or armed strife) (Kim and Lee 2001). Hurricanes Katrina and Rita, the 2003 blackout in the Northeast, the Watts riots in Los Angeles, and terrorist attacks in Oklahoma City and on September 11, 2001, provide memorable examples of the power that disasters have over people and their handicraft. These events varied greatly, however, in their predictability based on standard risk analysis.

Communities differ in their exposure to environmental risks (Lindell, Prater, and Perry 2006). Risk assessment is a mixture of science and judgment concerning other factors. On the basis of laboratory and field research, “risk assessment is a process in which information is analyzed to determine if an environmental hazard might cause harm to exposed persons and ecosystems” (EPA 2004, 2). Beyond the quantitative factors included in scientific research, there are a variety of other factors that influence risk assessment. Some of these other factors include the following:

- Economic factors—the costs and benefits of risks and risk mitigation alternatives
- Laws and legal decisions—the framework that prohibits or requires some actions
- Social factors—attributes of individuals or populations that may affect their susceptibility to risks from a particular stressor

- Technological factors—the feasibility, impact, and range of risk management options
- Political factors—interactions among and between different branches and levels of government and the citizens they represent
- Public factors—the attitudes and values of individuals and societies with respect to environmental quality, environmental risk, and risk management (EPA 2004, 3–4)

These other factors can, in turn, be related to awareness and emotion. A basic rule of risk management theory is that in order for people to take protective actions, they must have a perception of risk (Macdonald 2006). Naturally, the awareness level is highest immediately after a crisis, and attention is likely to be focused on preparing for the recurrence of the same kind of problem, whether it is an earthquake (e.g., Northridge, California, in 1994), a terrorist attack, or a hurricane. Unfortunately, official attention can be overly concentrated on the types of crisis that occurred previously rather than other possible threats, and public awareness of risk can quickly fade. Despite experience with wildfires in developed areas of California, for example, in 1961 (Bel Air in Los Angeles), 1977 (Sycamore Canyon in Santa Barbara), and 1990 (Painted Cave in Santa Barbara), most of the risk factors remained when a firestorm hit the East Bay hills of Berkeley and Oakland in 1991 (Sullivan 1993).

On the other hand, the public can react irrationally to risk, allowing the fear of remote threats to lead to exaggerated protective reactions, as evidenced in a response labeled *panicology* (Briscoe and Aldersey-Williams 2008). Gardner, in *Risk: The Science and Politics of Fear* (2008), offers evidence from psychological research that shows that humans often respond to threat with their gut in a visceral “fight or flight” reaction that overrides the rational calculations of their head. The nature of the brain, along with distortions by the media and organizations that sensationalize fear, cause many of “history’s safest people” to exaggerate some risks and ignore the actual likelihood of occurrence (Gardner 2008, 307–8). Using popular opinion as a guide to risk assessment can lead to under- or overreaction.

A related problem with perception is that as protective measures are taken, the perception of risk decreases. In a longitudinal study that examined how risk perceptions and risk behaviors affect one another (Brewer et al. 2004), the results support two hypotheses: (1) Behavior motivates people to take protective action against risk, and (2) when people take protective actions they deem to be effective, the perception of risk decreases. Translated into disaster preparedness terms, high levels of perceived risk are related to early mitigation projects. As mitigation methods (such as

levees) are completed, however, the perception of risk decreases.

City and county managers must concern themselves with areas of their city and with populations that are susceptible to the impacts of environmental hazards. They also must be concerned with the potential economic and political implications of managing hazards. A hazard vulnerability analysis is a structured approach to determining which hazards pose a significant threat to a community (McLaughlin 2001). This involves identifying the types of large-scale emergencies that might occur in a jurisdiction. The analysis identifies possible natural, technological, and human events that could occur. For each, an assessment of probability, type of risk (e.g., loss of life, threat to health), and preparedness for handling that possibility is conducted.

Combining all of the results can help prioritize the areas where action is needed. The basic tension, however, between probability and severity remains. It may be useful to identify anything that could possibly go wrong, particularly when the consequences would be severe and the costs of prevention are low—for example, putting barriers in front of a 911 call center on a busy street in Philadelphia (Sostek 2006). It is important to exercise appropriate caution in the face of possible threat. Whiteside (2006) argues that, compared to Europeans, Americans are less likely to apply the “precautionary principle” when considering accepting changes that could produce unknown hazards—an example is Americans’ and Europeans’ differing responses to genetically modified organisms. The principle argues that “when in doubt, take protective action,” a lesson that was followed by county officials in China who warned residents to vacate buildings prior to the Tangshan earthquake in 1976 but was not followed in deciding whether to order a mandatory evacuation of New Orleans before Hurricane Katrina (Col 2007). There is a possibility that heightened attention and precaution will immobilize officials as they try to anticipate and prepare for all risks or that unnecessary actions will be taken in the face of extremely unlikely threats. Judgment and intuition always must accompany precise analysis.

It is the city manager’s responsibility to ensure that the emergency management program is “scaled right.” The city manager is the person who needs to be looking broadly at how much of the total budget is given to emergency management, taking into account the hazard environment. Beyond allocating material re-

sources, managers signal the relative importance of emergency management by the way in which they allocate attention and priorities. For many of the emergency management functions described in later sections, cost is not the critical limiting factor.

If the top administrator does not take these responsibilities seriously, there is little chance of commitment from department managers who do not deal with the everyday emergencies that occur in local government (fires, traffic accidents, crime). If managers do not stress a comprehensive approach, many departments will assume they are not a part of emergency management response. To a majority of municipal department heads, emergency management preparedness activities may seem incidental or even peripheral to the organization’s mission, taking resources away from more immediate needs. Senior officials need to reinforce the recognition that all departments provide essential functions that are vital to

local recovery efforts and the restoration of the social and economic environment after disaster (Bolin 1990; Tierney, Lindell, and Perry 2001; Ward, Morris, and Carlile 1989).

A number of factors contribute to public managers’ disinterest in emergency management activities. Grant (1996) lists (1) a lack of awareness of their emergency management role, (2) a tendency to focus on matters deemed to be higher priorities, (3) a low perception of risk, and (4) a lack of emergency management courses in mainstream public administration curriculum and training. Other factors are the low priority assigned to emergency management by the public and elected officials, the low prestige of emergency managers in their communities, and a lack of resources and staffing for emergency preparedness functions (Labadie 1984; Rossi, Wright, and Weber-Burdin 1982; Tierney, Lindell, and Perry 2001). The issue for top administrators is whether they can offset these factors and maintain an appropriate level of interest and involvement across the government.

### **Responding to Emergencies: Being Prepared but Spontaneous and Creative**

The major crises listed in the previous section illustrate the importance of emergency operations planning to ensure the continuity of local government operations, particularly in support of response and recovery efforts. While all of these events had national implications, in a very real sense—both politically and managerially—“all disasters are local” (Dynes, Quarantelli, and Kreps 1972). During any crisis that affects a city, citizens and business look to the top executive for leadership.

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To be meaningful, leadership must be more than symbolic; it must ensure effective coordination of response and recovery efforts. Emergency response traditionally follows a bottom-up approach (Schneider 1995; Waugh 1996), whereby local government agencies are expected to plan for and mitigate the majority of emergencies in their jurisdiction. Toward this end, municipalities provide a variety of first-responder services such as police and fire protection and emergency medical services, as well as support services such as transportation and public works. Local government officials must deal with the immediate consequences of the disaster. State governments coordinate the development and implementation of comprehensive disaster response and recovery plans and provide additional resources and personnel, often by activating the National Guard. When both state and local governments find themselves overwhelmed by an event, the federal government may step in with financial assistance and can deploy national urban search and rescue assets. The problem is that many local governments place a low priority on emergency management (Wolensky and Wolensky 1990), thereby expanding their reliance on assistance from higher government. Additionally, local governments with lower revenue-generating capacity than higher levels of government may not have adequate resources to prepare for or respond to emergencies on their own (Tierney, Lindell, and Perry 2001).

Schneider emphasizes that “higher levels of government are not intended to supersede or replace the activities of the lower levels” (1995, 28). Inappropriate reliance on higher levels reduces the effectiveness of the intergovernmental response to disasters because there is more likelihood of a greater “gap” between bureaucratic norms—the “standard operating procedures, routine policies, and institutional processes that are supposed to address every possible contingency” (Schneider 1995, 6)—and emergent norms—institutional patterns and behaviors that arise because of unexpected complexity or scope of an event. In the aftermath of Hurricane Katrina, for example, there was a substantial gap in the response of many Federal Emergency Management Agency (FEMA) staff, in contrast to the integration of bureaucratic and emergent norms demonstrated by the U.S. Coast Guard (Morris, Morris, and Jones 2007).<sup>1</sup>

Generally, the perceived effectiveness of the response tends to be judged more favorably when it is largely under the control of local government, whereas intervention by higher government often creates more complicated and confusing emergency management operations, resulting in poor perception of government performance. It is appropriate for higher levels of government to get involved when local governments are overwhelmed by challenges they cannot handle (Col 2007). Local government managers can

provide the focused leadership needed to keep their governments from being overwhelmed. In so doing, more emergency functions are performed locally, and there is less dependence on higher governments.

### Legal Requirements and Expectations

It is important for city managers to be aware of their legal responsibilities with regard to state and federal legislation, consensus standards, and administrative regulations. It is not possible here to comprehensively review the laws applicable to local emergency preparedness or disasters. However, it is important to understand that laws create specific liabilities for public officials in terms of mandatory community preparedness and mitigation activities and seek to structure local government planning practices.

Two important pieces of legislation are the Superfund Authorization and Reauthorization Act (SARA) and the Stafford Act. The SARA is one of the longest established programs affecting local government planning. Its key provisions are found under Title III, “Emergency Response Planning and Community Right to Know.” The approach under SARA’s Title III requires the establishment of State Emergency Response Commissions (SERC) and Local Emergency Planning Committees (LEPC) to focus on planning for hazardous materials events. The act mandates that industry disclose the types and quantities of extremely hazardous substances to SERC and LEPC organizations (Perry and Lindell 2006). This information is then used by the SERC and LEPC to identify potential community health and safety hazards (hazard and vulnerability assessments), take actions to minimize those risks (mitigation measures), and prepare comprehensive emergency plans and acquire resources to respond to potential releases of hazardous materials (emergency preparedness).

The Stafford Act provides federal funding for post-disaster hazard mitigation planning.<sup>2</sup> At a minimum, hazard mitigation plans must include an evaluation of regional hazards; an analysis of state and local hazard mitigation policies and programs; the development of strategies, programs, and actions to reduce vulnerability; and annual updates of mitigation plans (Godschalk et al. 1999). There is a virtual maze of other disaster-preparedness-related federal laws that city managers need to be familiar with, including, but not limited to, the Comprehensive Environmental Response, Compensation and Liability Act (section 105); the Clean Water Act (section 311); and the 1980 Nuclear Regulatory Commission Appropriation Act (which, along with Executive Order no. 12148, requires off-site emergency preparedness for nuclear facilities), to name a just a few.

Since September 11, 2001, a myriad of new federal laws, Presidential Decision Directives, and executive

orders have been promulgated that affect state and local emergency preparedness activities. Many focus on planning for terrorist incidents involving weapons of mass destruction. Principal among these new laws are the Defense Against Weapons of Mass Destruction Act, which assigns rights, obligations, and resources relative to a weapons of mass destruction event; Homeland Security Presidential Directive 8, Annex 1, which establishes a standard approach to national planning in accordance with the Homeland Security Management System in the National Strategy for Homeland Security of 2007; and Homeland Security Presidential Directive 5, which mandated the creation of the National Incident Management System (NIMS). The NIMS imposes a national model for disaster management and planning on state and local governments. An important point regarding federal legislation enacted after 9/11 is that it tends to be focused on a single threat—terrorism—and does not appear to take full advantage of existing emergency management structures (Tierney 2005).

City managers also must be familiar with state statutes related to disaster planning and mitigation in areas such as planning, zoning, budgeting, taxation, public works management, and transportation (Grant 1996, 319). These general-purpose laws also have applications to hazard mitigation. For example, land-use planning and zoning ordinances can be used to mitigate hazards by keeping development away from areas such as flood zones (Godschalk et al. 1999). Although local land-use planning for floodplain management is consistent with the National Flood Insurance Act (established in 1968), noncompensated land-use regulations for hazard mitigation remain controversial and often are seen as government “taking” private property under the Fifth Amendment to the U.S. Constitution (Platt 1999).

Finally, many consensus standards organizations have created documents highlighting best practices for cities related to disaster preparedness. Such standards generally do not have the force of law, unless a local government body adopts them. Regardless of whether the jurisdiction has adopted standards as local code, standards frequently are cited in court cases. For many years, the National Fire Protection Association (NFPA) has developed consensus standards that regulate municipal fire services (Kramer and Bahme 1992), and in 1991, NFPA 1600 established a set of criteria for developing and assessing emergency management and business continuity programs, including vulnerability analysis, resource management, planning elements, and disas-

ter command and control functions (NFPA 2004, 1). Ultimately, NFPA 1600 can be used to measure the adequacy of local government disaster plans and continuity of operations plans in civil claims against the municipality following a disaster.

City managers must be concerned with issues of liability, particularly as they relate to emergency response and preincident planning (Lindell, Prater, and Perry 2006). Certainly, there are times when elected officials and public managers are not liable for injuries or private losses resulting from a disaster. Statutory immunity for the federal government exists in the Federal Tort Claims Act, the Stafford Act, and the Homeland Security Act of 2002. Similarly, all states have some provision for sovereign immunity established in their emergency management statutes. Such immunity is waived, however, where there is evidence of misfeasance or nonfeasance. City managers are well advised to ensure that subordinates develop emergency plans in accordance with industry standards and federal mandates. Even when such mandates do not exist, liability could be established if it can be shown that a specialized local hazard existed, creating a circumstance in which a mandate *should* have been in force and a plan *should* have existed (Perry and Lindell 2006). Attention must be given to identifying and planning for localized hazards, even in the absence of federal mandates, and city and county managers should document the rationale used to develop emergency plans—for example, by reference to community hazard vulnerability analysis, recurring training sessions, and disaster exercises.

### **Establishing and Maintaining a Commitment to Social Equity**

Beyond local officials’ legal commitments, there is the ethical responsibility to prepare for and respond to emergencies in ways that protect the poor, the disadvantaged, and the vulnerable. Concern for social equity has been a well-established responsibility of administrators at least since the New Public Administration movement, and it is central to comprehensive definitions of sustainability. The Hurricane Katrina disaster was a particularly dramatic demonstration of the failure to anticipate (to some extent) and execute disaster response in ways that addressed the needs of poor African Americans in New Orleans (Stivers 2007). However, similar racially disparate impacts were observed in the effects of the extreme heat wave in Chicago in 2005 (Enarson 2007). If an accepted professional practice is to promote equitable outcomes and processes (Keene et al. 2007), city and county managers have an obligation to ensure that the needs of some groups are not ignored in the

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preparation, mitigation, warning, response, and recovery phases. A careful, comprehensive, and compassionate social vulnerability analysis must be conducted by the local government (Enarson 2007).

### **Emergency Management Issues: Foci for Local Managers**

There are seven broad areas on which local government managers should focus attention in order to ensure the appropriate handling of emergency management. These are generic areas of responsibility for local government managers that have specific content related to this area of management.

#### ***1. Shaping the agenda and focusing attention.***

Knowledge concerning factors that encourage preparedness among organizations is far from comprehensive, though considerably more is known about public sector preparedness (Tierney, Lindell, and Perry 2001). As noted earlier, the elements of effective emergency preparedness are far more likely to be present if there is support among senior local officials, and Scanlon (1996) has demonstrated the importance of mayoral involvement in community preparedness. According to Kartez and Kelley (1988), executive support for emergency preparedness influences public managers' perceptions of the importance of such policies and practices. Historically, however, many city managers have placed a low salience on emergency management and planning (Sutphen and Bott 1990).

***2. Hiring and developing professional staff.*** The practice of emergency management has been evolving over the past half century from a field largely dedicated to Cold War civil defense to all-hazards planning and preparedness. Throughout these changes, practitioners and academics dedicated to emergency management have sought to redefine their field, transforming it from an occupation into a profession. The increasing importance of emergency management in public administration is evidenced by a greater focus in academic and professional certification programs. Previously, most training programs were designed for fire officers working on disaster planning and response (Kramer and Bahme 1992). Prior to 1983, there were no emergency management degree programs in the United States, and by 1995, there were only three degree programs and two certification programs (Lindell, Prater, and Perry 2007). Within two years of the terrorist attacks on 9/11, there were 111 collegiate emergency management programs: 47 offered certificates, diplomas, or minors; 19 offered associate of arts degrees; 10 offered bachelor's degrees; 27 offered master's degrees; and 7 offered doctoral degrees (Blanchard 2004). Blanchard notes that in 2003, a total of 96 institutions had programs under investigation or in development, with strong projected growth.

While education programs in emergency management have certainly progressed, efforts to standardize these programs have yet to mature into a reliable system of accreditation. Kaplan warns that with the "pent-up demand for trained staff, the certification industry—those companies that administer or provide training for exams—has created a bevy of new certifications" (2004, 1). The proliferation of such programs leads to the problem of determining which represent meaningful certification and which are the equivalent of "diploma mills." Local government managers must promote training while attempting to ensure that it is sound. They also must be able to scrutinize applicants' credentials and determine which have training that produces the knowledge and skills to handle jobs in the field.<sup>3</sup>

***3. Promoting intra- and interorganizational cooperation and coordination.*** The challenge for city and county managers is to anticipate active and especially passive resistance to local-level preparedness efforts and to develop a strategy for overcoming such obstacles. Given the relative disinterest of government officials in preparedness activities, it is clear that many department heads will not want to participate in emergency preparedness activities, while others will resist the process (Auf der Heide 1994; McEntire 2003; Quarantelli 1982). The literature on emergency management suggests that preparedness activities require strong support from three sources on the local level (Perry and Lindell 2006). First, the city manager has the power to successfully influence subordinates' participation in preparedness activities, including the statutory authority of the formal leadership position (legitimate power), the ability to deliver penalties (coercive power), and the opportunity to reward those who actively and productively participate in the process (reward power). Second, Birkland (1997) discusses the policy entrepreneur. Because of their political connections and technical expertise, policy entrepreneurs have had significant influence on local-level disaster mitigation policies (Wood 2001). Policy entrepreneurs can be external (consultants, interest groups) or internal (city manager, elected official). A study by Olson and Olson (1993) documented how a mayor's entrepreneurial leadership revived seismic mitigation and preparedness efforts following a 1975 earthquake in Oroville, California. A third source of support stems from interorganizational or regional planning committees, which help focus efforts on emergency preparedness efforts. Resistance to collaborative activities from department heads can threaten preparedness objectives (Hass and Drabek 1973) as managers seek to preserve their autonomy.

***4. Determining approach to planning and organization.*** A fundamental assumption of community response planning must be that the majority of emergency events should be handled at the local

level (Schneider 1995). Even when the impact of an event begins to exceed local agencies' capacity to respond effectively, local officials must assume they will have to sustain operations in order to handle increased service demands for some time. The National Response Framework advises that federal support for state and local governments is minimally 72 hours away (U.S. Department of Homeland Security 2004).

For decades, emergency managers have supported the "all-hazards" approach to emergency preparedness and to the Integrated Emergency Management System (IEMS). Rather than planning and preparing for different types of events individually, all-hazards planning focuses on the generic functions of emergency management, with the unique characteristics of different types of events (e.g., a blackout, nuclear release, terrorist attack) covered in more detail in hazard-specific appendices. The IEMS was developed to guide governmental agencies through the four basic functions of emergency management: planning, mitigation, response, and recovery. The IEMS provided for "effective assignment of duties for managing emergencies in a rational context in a given community . . . without imposing a rigid system that may be inappropriate for the community, or the emergency at hand, or both" (Guiffrida 1985, 2).

**5. Planning for response and continuity of government.** Among the more tangible products of the preparedness process is the emergency response plan. Researchers and practitioners in the field of disaster management have long emphasized the need to plan for unexpected events (Drabek and Hoetmer 1991; Dynes and Drabek 1994; Dynes and Quarantelli 1975; Gillespie and Banerjee 1993; Kartez and Lindell 1987, 1989; Lindell and Meier 1994; Quarantelli 1988). There are many types of emergency operations plans. Generically, such plans must clearly identify the duties and responsibilities of each local department during an emergency, including the role of elected officials. Approved in local ordinances, disaster plans with functional and hazard-specific appendices give agencies within a jurisdiction the authority to carry out their assigned functions (Kramer and Bahme 1992).

Maintaining essential operations is the focus of continuity of operations (COOP) planning. It "refers to the internal effort of an organization, such as a branch of government, department, or office, to assure that the capability exists to continue essential operations in response to a comprehensive array of potential operational assumptions" (Petersen 2005, 1). The terrorist attacks of September 11, 2001, created a sense of urgency in the federal government to create such plans.<sup>4</sup> State and local governments have moved more slowly, although the importance is rapidly being real-

ized (Hoene, Baldassare, and Brennan 2002). In California, for example, Governor Arnold Schwarzenegger issued Executive Order no. S-04-06, directing the Governor's Office of Emergency Services to promulgate and provide guidance on a mode of continuity of government and continuity of operations planning for use by the state and local governments (California Governor's Office of Emergency Services 2003). Federal guidance on creating continuity of operations plans has come in the form of the *Interim Guidance on Continuity of Operations Planning for State and Local Governments* prepared by FEMA (2004b). This document provides a detailed planning guide that addresses the planning process, plan content and implementation (including templates for assessing risk and identifying essential functions), and a COOP Planning Guidance Toolkit.

FEMA's Federal Preparedness Circular no. 65 recommends that all elements of a continuity plan be operational within 12 hours of activation and capable of providing sustained operations for up to 30 days (FEMA 2004a). A complete continuity plan must identify and prioritize the essential functions of an organization, as well as establish the concepts, actions, and procedures for providing continued performance of the organization's essential functions. A completed COOP plan also incorporates unambiguous lines of succession for key personnel; authority delegations and identification for emergency decision makers; selection and preparation of alternate work facilities; establishment of reliable, interoperable communications; protection of vital records and databases; provisions for logistical support; and security measures for personnel, facilities, and critical resources.

**6. Practicing and fine-tuning plans.** Of course, written disaster plans are worthless unless everyone—including city and county managers and top officials—regularly practices them (Kettl 2005). Broadly speaking, *exercises* represent constructed opportunities to test the operating procedures specified under a plan and taught in the training phase. Exercises are considered a form of training in the sense that individuals are rehearsing response measures. Ultimately, however, exercises provide a forum in which to test the effectiveness of both the training program and the plan, as well as the ability of personnel to execute the plan (Somers and Perry 2008). The creation of meaningful disaster exercises demands that the event test personnel, operating procedures, and equipment. The management of an exercise is somewhat similar to a major stage production in that there must be realistic actors and props and detailed stage directions, and the utility of the exercise depends, in part, on the extent to which participants find the activity believable or compatible with their knowledge of potential events. Exercises usually are generated with specific goals and objectives that are carefully related to the

hazard vulnerability profile and planning activity of a given jurisdiction. The conclusion of an exercise should include a senior-level critique. The discussion should center around which objectives were met and which elements of the plan or the execution of the plan need improvement. Exercises that revealed gaps in preparations in New Orleans, for example, did not lead to corrective action (Cigler 2007, 68; Col 2007, 118).

**7. Developing an Incident Management System and Emergency Operations Center.** City and county managers need to be versed in the fundamentals of an Incident Management System (IMS). Effective management of emergencies requires the nontraditional linking of agencies at different levels of government, as well as in the private sector. An IMS is a functionally based approach to management that establishes clear lines of authority, unity of command, an effective span of control, and defined paths for the flow of information. The advantage of the IMS lies in its flexible, scalable structure, which can adapt to incidents of any size, scope, or nature. Thus, IMS functions address the most routine local incidents as effectively as large, complex, multijurisdictional events. The IMS was developed in the early 1970s, largely to address the challenges of managing large-scale, wildland fires (Brunacini 2002), but it has long been adapted by fire departments for use in responding to all types of local hazards (Perry 2003). Over the years, the IMS has been adapted to meet agency specific needs, and it is used by police, public health, and public works agencies, among others. It has proven to be a highly effective management tool for organizing operations in complex and volatile task environments (Bigley and Roberts 2001).

In response to the intergovernmental and interorganizational challenges of 9/11, the federal government created a national model for incident management, the National Incident Management System (NIMS, now referred to as NIMS ICS). Under Homeland Security Presidential Directive 5, all federal agencies are required to adopt and implement NIMS. In addition, the Department of Homeland Security requires state and local governments to train and certify personnel in NIMS as a prerequisite for accepting homeland security funding. NIMS has generated some controversy “with national standards and protocols that supersede local preferences” (Christen 2004, 96). On a practical level, it is difficult to ascertain whether NIMS will be effectively implemented by local agencies. To Perry, “the veneer of nominal adoption and the reality of an executable capability at the local level are by no means the same” (2006, 25). City and county managers must make a significant commitment to ensure that NIMS is implemented appropriately and that personnel are trained and exercised in its use.

Once the scope and complexity of an incident have expanded beyond the capacity of an on-scene incident commander to effectively manage it, the chief executive officer must activate the local Emergency Operations Center. Day-to-day municipal operations are conducted from departments that are widely dispersed throughout the city. When a major emergency or disaster strikes, centralized emergency management is needed. This facilitates a coordinated response by the top administrator, emergency management staff, and representatives from city/county and outside organizations. The Emergency Operations Center provides a central location of authority and information and allows for face-to-face coordination among personnel who must make emergency decisions. The city or county manager must support and promote the Emergency Operations Center concept as a method of providing the most effective management of events that impact the jurisdiction. The manager will also serve as the chief liaison between Emergency Operations Center staff and elected officials.

Regardless of the preparations, the realities of an actual emergency will strain the capacity of local government to respond. The manager must show personal leadership by modeling how staff should deal with the emergency. Wendell White, manager of Charlotte, North Carolina, when Hurricane Hugo hit the city in 1989, observed that the most important thing the leadership of city did was to assure staff members that no one would get into trouble for trying to help people and provide relief.<sup>7</sup> The message spread throughout the organization and empowered staff members to take the initiative to deal with problems they encountered.

### **Political Context and Relations with Elected Officials**

Having examined the legal responsibilities and issues faced by managers in emergency management, it is important to return to the generic problems of establishing goals and priorities in a political context. Budget and politics often drive which threats are actively managed, to the point that “in many respects, the political context of disaster management appears to be more important than the scientific and technical contexts” (Waugh 1996, 346). In order to sustain comprehensive emergency management programs, local governments must have the fiscal capacity to develop, implement, and manage these programs. The extent of emergency planning—as well as the focus of such planning—often is dictated as much by the availability of intergovernmental transfers as by local hazards and vulnerability assessments. Declining economic circumstances in many urban areas are placing pressure on local officials to do more with less, and continued congressional funding for federal grants to cities, even those dealing with homeland security or public health and safety, is uncertain.

Another problem is that local politicians have few incentives to adequately fund emergency management programs (Wolensky and Wolensky 1990). The political spotlight tends to shine on issues that are raised by constituents. Because disasters are rare compared to daily concerns with crime and other matters, citizens tend to underestimate the probability of hazardous events (Cigler 1988) and generally perceive their personal risk of exposure and financial loss as low (Larsson and Enander 1997; Tierney, Lindell, and Perry 2001). They may assume that preparations for emergencies are adequate. Consequently, they do not demand increased funding or resources for emergency management (Prater and Lindell 2000). Without political or economic incentives to invest in emergency management, local politicians have little impetus to invest in proactive preparedness programs. The result is a lack of direction and funding, which creates a stagnant policy environment.

Perry (1991) points out that the leadership of elected officials, in particular the mayor, makes effective emergency planning possible. Mayors certainly make key decisions during an emergency, so it is imperative to include them in pre-event planning activities. Scanlon (1996) has documented the positive effects on emergency response outcomes when elected decision makers play an active role in planning before an emergency. Disaster training programs, such as the Integrated Emergency Management Course through the Emergency Management Institute, offer classroom lectures, discussions, small-group planning sessions, and functional exercises designed to expose participants to emergency management and increase awareness of their roles in disaster planning and response.

## Conclusion

The events of September 11, 2001, brought about renewed interest in how governments would continue their essential functions in the aftermath of a disaster, especially a terrorist incident. Historically, such incidents serve as “focusing events” (Birkland 1997), capturing attention and causing alarm. Demands are placed on government to find policy solutions that sometimes result in new programs and funding. Strategically, they demonstrate a continuing problem with disaster planning: Officials often prepare for the most recent disaster instead of conducting a hazard vulnerability analysis to support more realistic response scenarios. The terrorist attacks on New York and Washington, D.C., added a new term to the emergency management lexicon—homeland security

(Kettl 2004). This new focus on responding to and preventing terrorist incidents threatens to subsume all other emergency management functions toward a new focus on terrorism (Sylves 2005). The slow response to Hurricane Katrina has been offered as evidence of the consequences of a myopic focus on any single element of emergency management (Somers 2006).

Professional local managers have a responsibility to ensure that their communities are prepared for any kind of disaster—natural or man-made. They must seek to identify and prepare for all risks, regardless of which threats are receiving official attention in the programs of the federal and state government and are currently salient to the public. Emergency manage-

ment is one of the full range of management functions they must oversee. It must receive the resources and preparation that are “appropriate”—neither too much because of exaggerated concerns or too little because no imminent problems appear on the horizon. Local managers must prepare for potential problems in the future as part of their obligation to promote the long-term interest of the community and all of its residents. They also must deal with the pressing current problems and demands of citizens. It seems obvious

that if emergencies were predictable and occurred at a time that was known in advance, local government administrators would be excellent at shaping policies and making preparations, just as they do in other areas of responsibility. Some managers operate in settings that approximate these conditions, but for others, the risks are low and the prospects of emergencies may be remote.

Adversity is common in local government, and the unexpected is expected, but emergencies take both conditions to a different order of magnitude. For effective emergency management, we expect the kind of qualities and activities that characterize the local government management profession generally, but the stakes are much higher. We depend on the wisdom of city and county managers to maintain the appropriate level of concern and preparation, on their ability to advise elected officials and inform the public, on their leadership to inspire concern and effective planning when prospects of the need for action seem remote, on their strategic and integrative management capability to pull together the varied resources and responses of all parts of their government, and on their networking talents to develop shared responses across jurisdictions and sectors. Of course, they must do all of these things without the luxury of being able to focus on emergency management alone. If disaster strikes, we see the extent to which they have prepared for crisis, developed a resilient organization, and taken the

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Professional local managers... must seek to identify and prepare for all risks, regardless of which threats are receiving official attention in the programs of the federal and state government and are currently salient to the public.

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needs of the full community and all segments of the population into account. In the face of an emergency, we depend on their ability to inspire a heroic, competent, and caring response and on their flexibility and ingenuity in the face of destruction and suffering. Managers do all these things by anticipating, preparing, and practicing—that is, by managing what can be managed and by effectively drawing on their personal, organizational, and community resources to address, as best they can, those elements that cannot be managed.

## Notes

1. The U.S. Coast Guard has been praised for its initiative and flexibility in response to Hurricane Katrina. Morris, Morris, and Jones (2007, 100) observe, however, that search and rescue is part of the Coast Guard's core mission, therefore it can perform this function without a request from a state or local government, and that "coordination, adaptation, and flexibility" are deeply engrained in the tradition of the organization. The actions of the Coast Guard were not a spontaneous response to this crisis alone.
2. Robert T. Stafford Disaster Relief and Emergency Assistance Act, P.L. 93-288, as amended, section 404, Mitigation Grants, and section 409, Mitigation Plans.
3. Reliable certification programs are well-established training and education programs that have independent boards and examiners and have been recognized or endorsed by relevant professional associations. For example, both the International Association of Emergency Managers and FEMA's Higher Education Project have taken active roles in shaping standards for emergency management knowledge, skills, and abilities.
4. The U.S. General Services Administration maintains a continuity of operations plan template for use by federal agencies. The Office of National Security Coordination also has developed a Department of Homeland Security COOP Guidance Manual that outlines policies, procedures, and planning requirements. Independent study courses for continuity of operations planning have been made available through FEMA's Emergency Management Institute and the General Services Administration.
5. Personal communication.

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