

Academic-Practitioner Exchange

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Organizing for Homeland Security after Katrina: Is Adaptive Management What's Missing?

This article analyzes performance and organizational issues revealed by the governmental response to Hurricane Katrina. It reviews and analyzes the organizational changes made in the federal government to address homeland security and presents several proposals for reorganization suggested by policy makers in the aftermath of Katrina. A management approach rooted in adaptive management is presented for use in the ongoing process of organizing for homeland security.

Hurricane Katrina was more than a challenge to the capabilities of federal, state, and local governments to respond to hurricane or natural disaster emergencies. It was, in fact, as Secretary of Homeland Security Michael Chertoff observed, the first large-scale test of the new National Response Plan that the U.S. Department of Homeland Security (DHS) developed. This partnership with other federal departments and state and local government agencies was to provide for an “all-discipline, all-hazards plan that establishes a single, comprehensive framework for management of domestic incidents” (DHS 2004a, iii). But, as President Bush declared, “The results are not acceptable,” and he maintained that it is important that both the administration and Congress take a good look at what went on “to make sure this country is knitted up as well as it can be, in order to deal with significant problems and disasters” (quoted in Jackson 2005, 2). Only four years after 9/11 and three years after the establishment of the DHS, the nation is confronted with the question of whether government organization for homeland security is sufficient to ensure security with respect to catastrophic incidents, whether they are the result of natural hazards or terrorism.

There is little doubt that the suboptimal governmental performance during Katrina was the result of many factors: organizational, management, policy, personnel, and political. Both the House and the Senate, as well as the executive branch, have convened special committees to attempt to determine what went wrong. The purpose of this article is not to analyze all

the performance gaps revealed by Katrina or to attempt a comprehensive analysis of all the factors contributing to homeland security. Rather, it seeks to analyze what Katrina means for the question of how the federal government should reorganize itself to better perform the homeland security function.

The events of 9/11 kicked off one of the most active periods of reorganization in the history of the federal government. The enactment of the law creating the DHS was itself one of the largest reorganizations ever undertaken, but the department's creation is but one milestone in an ongoing process of organizing for homeland security—a process that Hurricane Katrina intersected. Numerous proposals are now being put forward in Congress and by the executive branch to reorganize federal agencies and intergovernmental relationships for homeland security; some are a direct result of Katrina, including everything from separating the Federal Emergency Management Agency (FEMA) from the DHS to giving the Department of Defense (DoD) a stronger role in emergency response. The questions are, first, how will the reorganization proposals intersect the ongoing process of organizing homeland security functions and programs in the federal government? Second, are any of them likely to cause significant changes in the behavior of the multiple organizations that perform the homeland security function in the United States?

This analysis will first discuss events leading up to Katrina that signaled organizational problems in the response system. An analysis of performance and organizational issues revealed by the governmental response to Katrina will then be presented. The article will then review and analyze the organizational changes that have been made in the federal government to address homeland security and the stage of development of the organizing process at the time Katrina hit, followed by a presentation of several proposals for reorganization suggested by policy makers in the aftermath of Katrina. This will be followed by an analysis of two organizational models that could

provide a framework for the next round of reorganization. Finally, a management approach rooted in adaptive management will be presented for use in the ongoing process of organizing for homeland security.

Harbingers of Potential Problems before Katrina

Following the federal response to Hurricanes Andrew and Iniki in 1992, a Government Accountability Office (GAO) report issued findings that forecast the experience during Katrina: "The problems we found with the federal strategy for catastrophic disasters—such as inadequate damage and needs assessments, miscommunication, unclear legislative authority, and unprepared, untrained state and local responders—are more systematic than agency specific. Thus, they require solutions that cut across agencies and levels of government" (GAO 1993, 11).

About one year before Katrina, in July 2004, a tabletop exercise that simulated a category 3 hurricane hitting New Orleans, dubbed Hurricane Pam, was conducted in Louisiana. About 250 emergency-preparedness officials from more than 50 federal, state, local, and volunteer agencies participated. It involved issues such as developing an effective search-and-rescue plan, identifying short-term shelters, devising housing options, and removing floodwater from New Orleans.

The exercise assumed that in advance of the storm, pleas for evacuation would only be half-successful. That was partly a recognition that as many as 100,000 people lived in households in which no one owned a car. A University of New Orleans survey released in July 2005, the month before Katrina, which found that although 60 percent of those asked at first said they would leave if public officials recommended an evacuation, on further questioning, only 34 percent of the residents of 12 coastal parishes would "definitely" leave. The message to the numerous New Orleans residents without a car provided on the City of New Orleans' Web site under "General Evacuation Guidelines" was, "If you need a ride, try to go with a neighbor, friend, or relative" (City of New Orleans 2005). The assumption presumably was that cars were equally distributed throughout the city, which was actually not the case. The House Katrina Investigation Committee found that the implementation of lessons learned from Hurricane Pam was incomplete prior to Katrina (U.S. House, 2006, 83).

Another pre-Katrina exercise forecast potential management and organizational issues. Both the National Response Plan (NRP) and the National Incident Management System (NIMS) of the DHS were used for the first time in a real catastrophe during Hurricane Katrina. However, just five months before Katrina, the DHS had conducted the third in a series of exercises to test disaster preparedness, simulating a

mock biological attack in New Jersey and a chemical attack and high-yield explosion in Connecticut. Twenty-seven federal departments and agencies were represented in the exercise, and 30 state, 44 local, and 156 private-sector organizations participated. The DHS's inspector general evaluated the organizations' performance during the exercise and found that overall objectives were addressed and met. However, the inspector general reported several findings concerning problems that forecast the problems experienced during Katrina: (1) Guidance and procedures to define how each function interrelates within the NRP appeared to be absent (DHS 2005, 15); (2) there was a fundamental lack of understanding of the principles and protocols set forth in the NRP and NIMS (DHS 2005, 2); and (3) there was a need for participating responders as well as coordinating departments and agencies to have a common operational picture, which is essential to an efficient and effective command-and-control structure (DHS 2005, 19).

The picture that emerged is one in which the officials of federal, state, and local governments and the private sector did not have any specification of how their functions were supposed to interrelate, and they did not understand the principles and protocols in the NRP and NIMS framework that were supposed to guide their decision making. Furthermore, without a common operational picture or an adequate information system to track and share information, the officials had difficulty achieving unified command and control of the total shared response.

Katrina: A Real Test of U.S. Homeland Security Organization

Katrina was the first-large scale test of the NRP and the NIMS. Although many individuals performed skillfully under the worst conditions, as President Bush (2005) stated, "the system, at every level of government was not well-coordinated, and was overwhelmed in the first few days." Organizational problems related to planning, incident management, and the management of intergovernmental relations were experienced during the response to Katrina.

Planning

Secretary of Homeland Security Chertoff (2005a) indicated that there was insufficient planning for the roles of various organizations: "I think 80 percent or more of the problem lies with planning. And that goes to the evacuation issue. It goes to how well we work with the military when the military has large numbers of assets they can bring to bear on the problem, [and] how fluid we are with them." The House Katrina Investigation Committee found that critical elements of the National Response Plan were executed late, ineffectively, or not at all (U.S. House, 2006, 132). Confusion over organizational procedures and defined roles did seem to contribute to the gaps in coordination

among participating organizations. The White House Report on the Federal Response concluded, "At the most fundamental level, part of the explanation for why the response to Katrina did not go as planned is that key decision-makers at all levels simply were not familiar with the plans" (White House, 2006). Further, the report observed that the NRP itself provides only a "base plan" and the supporting operational plans that Federal departments and agencies were required to develop to integrate their activities into the national response were either nonexistent or under development when Katrina hit (White House, 2006). The General Accountability Office observed, "Although the NRP framework envisions a proactive national response in the event of a catastrophe, the nation does not yet have the types of detailed plans needed to better delineate capabilities that might be required and how such assistance will be provided and coordinated" (GAO, 2006, 5). Paul McHale (2005), assistant secretary of defense for homeland defense, he testified that one of the ways to improve the federal government's response lay in "examining the role of DoD in responding to a catastrophic event." William Carville (2005), the federal coordinating officer for Katrina response operations for Mississippi, testified, "There has been no operational planning developed by FEMA in over four years. In my view, there is no clear understanding of the responsibilities of each level (Washington, the regions, deployed emergency response teams) and how they are to interact." In particular, he emphasized, "Katrina exposed a weakness in the National Response Plan—there is no specific discussion of multi-state disaster-management options."

The basic model underlying the planned role of federal agencies seemed to be at issue. That model assumes that state and local governments have the lead in disaster response, with federal forces responding to calls for assistance and thus arriving later. This model is now under scrutiny. Scott Wells (2005), the federal coordinating officer for Hurricanes Katrina and Rita in Louisiana, testified about the bottom-up emergency-response system: "This system works for small to medium disasters. It does not work so well for large disasters, and it falls apart for a catastrophic disaster. I think that is a fundamental problem with the response to Katrina." The House Katrina Investigation Committee concluded that catastrophic disasters require the federal response to be more proactive and not dependent on state requests for assistance (U.S. House, 2006, 136).

Managing Homeland Security Incidents

The House Katrina Investigation Committee found that during and immediately after Hurricane Katrina made landfall, there were lapses in command and control within each level of government, and between the three levels of government (U.S. House, 2006, 183). The White House Report found, "In

terms of the Federal Response, our architecture of command and control mechanisms as well as our existing structure of plans did not serve us well. Command centers in the Department of Homeland Security (DHS) and elsewhere in the Federal government had unclear, and often overlapping roles and responsibilities that were exposed as flawed during this disaster" (White House, 2006). The General Accountability Office found, "... there were multiple chains of command, a myriad of approaches and processes for requesting and providing assistance, and confusion about who should be advised of requests and what resources would be provided within specific time frames (GAO, 2006a, 4).

Having a picture of conditions on the ground in various areas and communicating about conditions was also a big problem. Secretary Chertoff (2005b) testified, "During the Katrina response, our efforts were significantly hampered by a lack of information from the ground. With communication systems damaged and state and local assets compromised by the subsequent flooding, our ability to obtain precise reporting was significantly impaired." The House Katrina Investigation Committee found that lack of communications and situational awareness paralyzed command and control (U.S. House, 2006, 191). Major General Richard J. Rowe, director of operations for the Northern Command, testified, "We need immediate, reliable communications that are survivable and flexible. These communications must be mobile, secure, and both voice and data capable" (2005, 4). The White House Report found, "Federal, state, and local governments have not yet completed a comprehensive strategy to improve operability and interoperability to meet the needs of emergency responders. This inability to connect multiple communications plans and architectures clearly impeded coordination and communication at the Federal, state, and local levels" (White House, 2006). It must be recalled that the responses to 9/11 were severely affected by similar kinds of information tracking and communication problems.

In addition, the unity of effort among the various agencies was significantly impaired during the response to Katrina. The House Katrina Investigation Committee concluded, "In responding to Hurricane Katrina, elements of federal, state, and local government lacked command, lacked control, and certainly lacked unity" (U.S. House, 2006, 195). Secretary Chertoff was asked when he had learned that FEMA chairman Michael Brown had not been able to establish a unified command. He testified,

I think on Wednesday he was—on Wednesday General Honore, I think, appeared. And I said to Brown, "You need to get together with the state, and you need to get together with General

Honore in the same place. You guys need to be connected together.” That means unified command. What that means is everybody who has command responsibility has to be in one place. (Chertoff 2005a)

Members of Congress raised significant questions about who was really in charge of the total response effort, and why federal authorities did not take over the total effort when it became apparent that the capabilities of the state of Louisiana and local governments were failing. Secretary Chertoff testified that under the Homeland Security Presidential Directives, he had a responsibility as the secretary of homeland security to manage incidents of national significance, but he had delegated this responsibility to the head of FEMA, Michael Brown. Though Brown was not named as principal federal officer by Secretary Chertoff until Tuesday, when the response was fully under way, Chertoff (2005b) testified that this was only a formal recognition of the delegation that he had made to Brown earlier.

The House Katrina Investigation Committee found considerable confusion existed over the authority of the Principal Federal Official (PFO) and the Federal Coordinating Officer (FCO) over who was authorized to direct federal operations and that FEMA officials acknowledged that the Department of Defense frequently operated on its own outside the established unified command (U.S. House, 2006, 190). The White House Report recommended that the confusion over Federal Officials authority be remedied by designating the PFO as the FCO (White House, 2006, 90).

Managing Intergovernmental Relations for Homeland Security

One point of controversy concerned why the city of New Orleans and the state of Louisiana did not order a mandatory evacuation earlier than they did. Federal officials testified that they had urged state officials to issue a mandatory evacuation order on the Saturday before the storm, but it was not issued until Sunday (Brown 2005). State officials argued that they were executing a phased evacuation and that it was successful (Blanco 2005). The House Katrina Investigation Committee found:

Despite adequate warning 56 hours before landfall, Governor Blanco and Mayor Nagin delayed ordering a mandatory evacuation in New Orleans until 19 hours before landfall. The failure to order timely mandatory evacuations, Mayor Nagin’s decision to shelter but not evacuate the remaining population, and decisions of individuals led to an incomplete evacuation. The incomplete pre-landfall evacuation led to deaths, thousands of dangerous rescues, and

horrible conditions for those who remained. (U.S. House, 2006, 2)

There is a difference of opinion on whether the federal government had the means to supersede state authority to do such things as order an earlier evacuation. The Catastrophic Incident Annex of the NRP gives the federal government special powers, including the ability to bypass state governments. They were not used during Katrina. The more detailed Catastrophic Incident Supplement had not been approved by the DHS when Katrina hit. Secretary Chertoff testified that the annex provides that, upon recognition of a catastrophic incident, the designation in advance of a presidential disaster declaration permits the deployment of certain kinds of federal assets. However, Chertoff (2005b) asserted, because President Bush had issued the disaster declaration on the Saturday before the storm, use of the annex was not necessary. The House Katrina Investigation Committee concluded, “The Secretary should have invoked the Catastrophic Incident Annex (NRP-CIA) to direct the federal response posture to fully switch from a reactive to proactive mode of operations” (U.S. House, 2006, 137). The Committee observed that the NRP-CIA has never been appropriately exercised and as a result, federal personnel have little experience or comfort with instituting a proactive response (U.S. House, 2006, 137).

Regardless of the interpretation of the Catastrophic Incident Annex during Katrina, the issue of under what circumstances federal authority should supersede state authority has been placed on the agenda for homeland security reorganization, as has the question of what processes should exist to designate who is in charge during emergencies. Concern about the potential preemption of state authority by federal officials was heightened by questions surrounding the authority to order evacuations. R. David Paulison (2005), acting director of FEMA, testified that evacuation is a state and local issue and that FEMA does not make evacuation decisions. In fact, the NRP lists directing evacuations as a responsibility of local chief executive officers (DHS 2004a, 8). Federal officials can help facilitate evacuation procedures when the NRP is invoked, support search-and-rescue efforts, and provide technical assistance. In the event of catastrophic incidents, the federal government is to provide public health, medical, and mental health support at evacuation points and refugee shelters (Bea 2005, 2–3). Scott Wells (2005), federal coordinating officer for Louisiana, testified that FEMA had received no pre-landfall requests for evacuation assistance.

The larger question concerns under what circumstances the Federal government should not wait for requests for assistance from a state but should move ahead on its own. The White House report asserts, “Ultimately, when a *catastrophic incident* occurs,

regardless of whether the catastrophe has been warned or is a surprise event, the Federal government should not rely on the traditional layered approach and instead proactively provide or 'push' its capabilities and assistance directly to those in need" (White House 2006). The General Accountability Office has recommended that the NRP's provisions regarding proactive response of the federal government to emerging catastrophic events be clarified and that Congress give federal agencies explicit authority to take actions to prepare for catastrophic disasters when there is warning (GA, 2006b, 12–13).

Post-9/11 Changes in Organization for Homeland Security: A Work in Progress

The major organizational issue is that given the creation of the DHS, why were such significant organizational problems evident in the response to Katrina? Congressional policy makers in both parties and the president explicitly addressed the organizational issues in the course of enacting one of the largest federal reorganizations in history, and more organizational changes have followed the establishment of the DHS.

A major issue addressed in the creation of DHS was to specify *who is in charge*. Proponents of the department argued that it would fix accountability for homeland security in the federal government: The secretary of the department would have the power to act and not just coordinate, and various agency activities would be integrated by means of hierarchical organization (Wise 2002a, 137). Opponents argued that the non-terrorism-related functions of the agencies that were to be merged into the department, such as those of the Coast Guard and FEMA, would be neglected or subordinated to the terrorism mission (Wise 2002b, 3). Another question raised at the time about the coordinating capacity of the proposed department was whether its own operational responsibilities would be compatible with a government-wide coordinating role (Wise 2002a, 137). Many of the federal agencies with major homeland security responsibilities were not included in the merged department, such as the DoD, the Department of Justice, and the Central Intelligence Agency, among others. The issue was how Congress could write a law giving the head of a department of homeland security what amounts to presidential authority to direct the activities or realign the resources of other cabinet departments (Donley and Pollard 2002, 142). In the end, Congress did not do that. It did not give the DHS the power to direct the activities of other cabinet departments, but instead a mandate to call on other departments for their assistance in homeland security tasks. The department, in fact, was given little new legal authority to undertake its coordinating role.

However, trying to establish a departmental superstructure and begin some degree of integration of

what had been 22 separate agencies became the major preoccupation of the department, with interdepartmental coordination taking a lower priority. As was pointed out prior to the passage of the legislation establishing the DHS, digesting transferred units is a longer and more arduous process than reorganizers often plan for (Wise 2002a, 139).

The GAO designated the department's transformation in 2003 as "high risk" because it faced enormous challenges in implementing an effective transformation process and building management capacity and because it faced a broad array of operational and management challenges that it inherited from its component legacy agencies (GAO 2003). In a review update in 2005, the GAO reported that implementation and transformation of the DHS remained high risk (GAO 2005c). Just integrating the management systems of the department, including financial, human resources, information, and procurement systems, has been an enormous task occupying top leadership, and though the DHS has made some progress, it does not have a comprehensive strategy, with overall goals and a timeline, to guide management integration across functions and departments (GAO 2005b, 4).

The National Framework for Homeland Security

Homeland Security Presidential Directives 5 and 8 require the DHS to establish a single, comprehensive, "all hazards" approach to and plans for the management of emergency events, whether they are the result of terrorist attacks or large-scale natural or accidental disasters (GAO 2005b, 2). The overall structure that is supposed to guide federal homeland security activities and provide for their coordination is not the sole province of the DHS. To address the overall homeland security challenge, the National Strategy for Homeland Security—which sets out a plan to improve homeland security through the cooperation and partnering of federal, state, local, and private-sector organizations on an array of functions—and 12 Homeland Security Presidential Directives, which provide additional guidance related to the mission areas in the strategy, have been issued. The strategy sets out 43 initiatives to fulfill the federal responsibility. A GAO review found that in fiscal year 2004, although the DHS was identified as the lead for 37 of the initiatives, there were multiple leads for 12. The GAO review identified homeland security challenges in fulfilling the strategy that cut across mission areas and levels of government:

- Clarifying roles and responsibilities within and between levels of government and the private sector through the development and implementation of an overarching framework and criteria to guide the process

- Developing a national blueprint—called an *enterprise architecture*—to help integrate different organizations' efforts to improve homeland security (GAO 2005e, 24)

Thus, when Katrina hit, it is clear that both the leadership and action roles and the responsibilities of major federal organizations, in fact, needed to be clarified. Nonetheless, the Homeland Security Presidential Directives assigned the DHS the lead role in setting out the structure for coordination of homeland security activities. Among the major components of this coordination responsibility were planning, incident management, and managing intergovernmental relations.

Planning for Homeland Security

Katrina revealed significant problems with regard to planning the defined roles of various departments and officials and their interactions. The primary planning document to guide all federal activities is the NRP, which was issued on January 6, 2005, and forms the basis for how the federal government coordinates with state, local, and tribal governments and the private sector during incidents.

Federal departments and agencies signed letters of agreement, pledging cooperation and support for the DHS *“as appropriate and consistent with their own authorities and responsibilities”* (DHS 2004a, iii; emphasis added). As Tom Ridge, then secretary of homeland security, made clear in his introduction, the plan created “no new authorities” (DHS 2004a, i). Thus, in many situations, federal departments and agencies must decide for themselves what types of cooperation, resources, and support are not only consistent with their own authority but also “appropriate.” The secretary of homeland security has little legal leverage to use if he or she disagrees. The one situation covered in legislation that does provide more leverage is the Stafford Act, which authorizes the secretary of homeland security and the director of FEMA to “task” supporting departments and agencies after an incident is declared an emergency or a disaster by the president.

Managing Homeland Security Incidents

A key concept in the Incident Command System of the NIMS is that most incidents are to be managed locally (DHS 2004b, 7). For disaster response and recovery from natural disasters such as hurricanes, the federal government, in fact, is not the lead organization. State and local governments take the lead, but when their resources are overwhelmed, governors may request assistance from the federal government. In response to such a gubernatorial request, a presidential declaration pursuant to the Stafford Disaster Relief and Emergency Assistance Act designates an incident as a major emergency. Such a declaration permits

FEMA and other federal agencies to provide assistance to state and local governments, businesses, and individuals.

However, FEMA is not an operating agency that can mount resources to respond to disasters on its own; rather, it is a coordinating agency that tasks other federal agencies to use their resources to assist state and local governments. It is, in fact, a rather small agency with a little more than 2,400 employees. It possesses nothing equivalent to the U.S. Army's 82nd Airborne Battalion, which can send in its own people, equipment, and supplies to address the effects of a natural disaster. In responding to disasters, FEMA and state emergency managers are embedded in a network of thousands of nonprofit organizations, private firms, ad hoc groups, individual firms, and public safety agencies that are all responding to the disaster. “The disaster network is loosely structured, organizationally diverse, motivated by a broad range of interests, and in part ad hoc” (Waugh and Sylves 2002, 148). Together, FEMA and state emergency managers coordinate using a variety of means, including some direct authority, financial incentives, technical assistance, and expressions of personal support (Waugh 2002). With little in the way of direct operations under its control, FEMA's task is primarily one of interagency, intergovernmental, and intersectoral relations. Even when supplemented by the authority of the secretary of homeland security, who can direct FEMA's sister agencies within the DHS to provide resources, the coordination task is complicated by multiple constitutional, legal, organizational, and historical strictures.

The incident management framework that has been developed to provide some structure to an otherwise decentralized scheme is the NIMS. It is supposed to help emergency managers and responders from different jurisdictions and disciplines work together more effectively to handle emergencies, and it is intended to be a comprehensive response system for use in directing government response to emergencies. It is modeled on the incident management system used by the agencies that fight forest fires, which was deployed during 9/11 and also for the *Challenger* crash. It is intended to provide a common and consistent framework for the management of incidents, so that any agency or combination of agencies—federal, state, or local—can readily combine their efforts in responding to an emergency. Although it recognizes that incidents are going to be managed locally, the NIMS is intended to ensure that field management complies with a standard set of organizational definitions, doctrines, and procedures: “The goal is to take advantage of this commonality to build flexible, modular, [and] scalable response organizations, supported by interoperable technology” (Rubin and Harrauld 2006, 684).

Managing Intergovernmental Relations

One component of the homeland security intergovernmental relations framework is that beginning in fiscal year 2005, federal agencies and departments are required to make adoption of the NIMS by state, local, and tribal governments a requirement for federal preparedness assistance grants, contracts, and other activities. In addition, the DHS is directed to issue a National Preparedness Goal that defines national performance standards for assessing domestic preparedness capabilities and identifying gaps in those capabilities and reflects national homeland security priorities for prevention, response, and recovery from major events, with an emphasis on terrorism. The department is also tasked with establishing mechanisms for the delivery of federal preparedness assistance to state and local governments, as well as outlining actions to strengthen the preparedness capabilities of federal, state, and local entities. Homeland Security Presidential Directive 8 also requires the preparation and approval of comprehensive and statewide all-hazards preparedness strategies in order to receive federal preparedness assistance at all levels of government, including grants, after fiscal year 2005. The DHS issued an Interim National Preparedness Goal on April 1, 2005, and had planned to issue the final National Preparedness Goal and Target Capabilities List on October 1, 2005, following comment from state and local homeland security officials. Katrina obviously sent the drafters back to the drawing board to engage in further refinement of the preparedness goal. In developing the goal, the DHS used a capabilities-based planning approach—one that defines the capabilities required by states and local jurisdictions to respond effectively to likely threats. The specified capability requirements are to establish the minimum levels of capability necessary for reasonable assurance of success against a standardized set of 15 scenarios for threats and hazards of national significance (GAO 2005a, 20).

Especially after the deficiencies exhibited by some state and local governments during Katrina, it should be expected that the standards eventually promulgated under the National Preparedness Goal will be the subject of considerable scrutiny and debate. Not only will millions of dollars of federal aid hinge on the assessments of states' preparedness ratings, but also information about how states measure up to the standards is sure to spark political debate. The release of school performance scores under the No Child Left Behind Act is perhaps a harbinger of what is to come in homeland security.

Historically, the national system for responding to emergency incidents has been very diverse and complex, and the NRP and the NIMS constitute attempts to impose standards and structure on it. One risk is that these initiatives will lead to the overstructuring of a system that some see as historically effective and the

diminishing of critical innovative capabilities (Rubin and Harrald 2006, 686). In attempting to increase accountability, standards can also portend further centralization of the federal role in defining appropriate and acceptable policies for preparedness and response (Posner 2003, 42).

On the other hand, another risk is that these initiatives will provide the illusion of an integrated system without sufficient buy-in on specific actions by all stakeholders at various levels of government to ensure coordinated action. That is, they may fail to cause integration at the operating level. In fact, when Secretary Chertoff testified before the House Committee investigating Katrina, he seemed to conclude that just such a risk had become manifest: "In particular, we did not have the kind of integrated planning capabilities that you need to deal with the kind of catastrophe we faced in Katrina. And when I say integrated, that means not only our own planning but our ability to plan with others, including state and local government and including the military" (Chertoff 2005a).

To summarize, the response to Katrina revealed significant organizational issues in planning, management of incidents, and management of intergovernmental relations. This analysis will now turn to current proposals for organizational change to determine the extent to which they address these issues.

Proposals for Organizational Change

Like other major events, such as 9/11, which brought major formal organizational changes in government, Katrina has brought forth proposals to further change organization for homeland security. Among the proposals put forward are plans to modify federal law to give the president greater ability to order federal action, even in the absence of requests from state governors; to assign a greater role to the DoD and other Federal Departments for domestic emergency response; and to remove FEMA from the DHS and have its director report directly to the president.

In a televised address to the nation, President Bush said that Hurricane Katrina showed the need for "greater federal authority and a broader role for the armed forces" (Bush 2005). In part, the interest in greater federal authority stemmed from the decisions of the City of New Orleans regarding evacuation. Fran Townsend, who is in charge of the White House examination of the federal response to Katrina, reportedly said that she is considering whether there is a narrow band of circumstances in which the president should seize control when a disaster strikes (Davis 2005).

In fact, the White House report states, "The Federal government should develop plans to build and

temporarily command the Incident Command System (ICS) until the State and local authorities are able to recover from the initial impact of the catastrophic incident and perform their roles under the ICS.” The White House report also assigns a new lead Federal role for evacuations to the Department of Transportation; “The Department of Transportation, in coordination with other appropriate departments of the Executive Branch, must also be prepared to conduct mass evacuation operations when disasters overwhelm or incapacitate State and local governments” (White House 2006).

Richard Falkenrath, former deputy assistant to the president for homeland security, has suggested a federal evacuation statute that would allow the president to order an evacuation when state and local agencies fail to act with appropriate swiftness (Brookings 2005, 15). However, the National Governors Association issued a statement opposing federalization: “The possibility of the federal government pre-empting the authority of the states or governors in emergencies, however, is opposed by the nation’s governors. Governors are responsible for the safety and welfare of their citizens, and are in the best position to coordinate all resources to prepare for, respond to, and recover from disasters” (NGA 2005). In addition, the National Emergency Management Association has recommended that state and local governments remain in control of their own disaster response with federal support and unified command structures: “Even in extreme circumstances, we need to continue to use and follow the plans and systems that are in place. State and local governments must have buy-in for the response and recovery of their communities” (Ashwood 2005, 4).

Several issues are related to a federal evacuation statute: (1) What criteria would it include that would justify triggering presidential action? (2) What incentives or disincentives exist for a president to use it? For example, in considering whether to overrule a governor in ordering a mandatory evacuation, would the risk of ordering an unnecessary evacuation discourage presidential use? (3) If the president orders an evacuation, would federal forces, including the military, be required to implement it?

Some have suggested that laws and plans be changed to designate a greater role for the military in natural disaster response. The U.S. Conference of Mayors is one organization that has advocated a greater role for the military (2005, 3).

Currently, according to the NRP, the DoD’s role is contingent on a request for assistance from another federal agency and approval of the secretary of defense. During Katrina, more than 90 requests for assistance were acted on by the secretary of defense

or the acting deputy secretary of defense (McHale 2005, 3). “From the time a request is initiated until the military force or capability is delivered to the disaster site requires a 21-step process” (White House 2006). The DoD uses a different process from other departments.

In addition, as the White House report found, “Further, active duty military and National Guard operations were not coordinated and served two different bosses, one the President and the other the Governor” (White House 2006).

Federal Coordinating Officer Philip Parr testified that during Katrina, a plan he had worked out with the National Guard to evacuate people from the Superdome was put on hold because General Honore had taken charge of the evacuation (Parr 2005). Increased military involvement clearly raises issues of command and coordination with other federal agencies.

The White House report envisions a lead role for the Department of Defense in catastrophic incidents that would displace the Department of Homeland Security:

DOD and DHS should develop recommendations for revision of the NRP to delineate the circumstances, objectives, and limitations when DOD might temporarily assume the lead for the Federal response to a catastrophic incident. Katrina demonstrated the importance of prior planning for rapid and complex response efforts. DOD should develop plans to lead the Federal response for events of extraordinary scope and nature (e.g., nuclear incident or multiple simultaneous terrorist attacks causing a breakdown of civil society). (White House 2006)

Similarly, in addition to the Departments of Transportation and Defense already discussed, the White House report envisions assigning lead roles to Federal Departments other than the Department of Homeland Security including:

- Department of Justice—primary agency responsible for ESF-13 Public Safety and Security function
- Department of Health and Human Services—lead a public health and medical command and responsibility for coordinating the provision of human services during disasters.
- Department of Housing and Urban Development—lead Federal agency for the provision of temporary housing.

In short, the White House report envisions multiple hierarchies for different functional areas.

Some members of Congress have proposed that FEMA be removed from the DHS and given the status of an independent agency whose director reports directly to the president. Such a move is predicated on the notion that placing the director higher in the federal hierarchy will give him or her greater command authority in the federal government. It also presumes that FEMA's functions are so fundamentally different from those of the other units within the DHS that its operations are hampered by a common departmental location and administration. The complaint is that FEMA's historical natural disaster functions have been subordinated to the DHS's new emphasis on terrorism. Albert Ashwood, vice president of the National Emergency Management Association, argues, "The FEMA director serves in a bureaucratic chain of command which reports through the structures of the DHS, which delays response and recovery functions" (2005, 2).

One issue is how much synergy to integrate operations for more effective emergency response has been achieved since FEMA was absorbed into the DHS. Secretary Chertoff asserted that since FEMA has joined DHS, things have worked better in terms of FEMA's ability to work with the Coast Guard and in terms of the DHS's ability to coalign all of the department's other assets to supplement FEMA (Chertoff 2005b). The National Emergency Management Association charged, however, that since the merger, FEMA's state and local coordination unit was severed to stand up the DHS's Office of State and Local Coordination, other FEMA functions were consolidated into the DHS, and FEMA funds were transferred to the Transportation Security Administration (Ashwood 2005, 2).

Another issue is how different natural disaster-related functions are from other homeland security-related functions, such as terrorism. The GAO completed a study of the target capabilities established by the DHS showing that most of the DHS's targeted capabilities—30 of 36—are common to both terrorist attacks and natural or accidental disasters. Such capabilities as on-site emergency management and search and rescue were found to be common to all hazards. The study revealed that the preparedness capabilities required for terrorist attacks and natural or accidental disasters are more similar for protection, response, and recovery and differ most for prevention (GAO 2005f, 5). Nonetheless, the National Emergency Management Association protested Secretary Chertoff's move to sever FEMA's preparedness function and assign it to a newly created Preparedness Directorate that arose from Chertoff's Second Stage Review. The association highlighted what it said was the department's lack of focus on natural hazards preparedness and the inability to connect response-and-recovery operations to preparedness functions (Ashwood 2005, 5–6).

The Way Forward for Homeland Security Reorganization: Two Models

What many of the suggested reorganization proposals have in common is a desire for greater centralization of authority, whether that means turning over more power to the president, elevating FEMA's director to a position directly under the president, or increasing the authority of DoD and other Federal departments. Granted, the desire to use military assets involves more than a wish to centralize authority, but even there, the desire for a unitary command structure is implicated. Following the same dynamic that was set in motion after 9/11, there is a renewed desire to strengthen hierarchy and fix accountability. The cry *who is in charge?* is raised once again, this time in the context of response and recovery from natural disasters. Apparently, the idea of creating the Department of Homeland Security as the one Federal agency to be in charge has given way to a search for a new organizational solution.

Hierarchical Model

The common tendency just identified rests on the well-known hierarchical model of organization. "Hierarchy uses authority (legitimate power) to create and coordinate a horizontal and vertical division of labor. Under hierarchy, knowledge is treated as a scarce resource and is therefore concentrated, along with the corresponding decision rights, in specialized functional units and at higher levels in the organization" (Adler 2001, 216). Among the advantages of this mode of organization are that it provides a form for employing large numbers of people and preserves unambiguous accountability for the work that they do (Jaques 1990). Also, it has been pointed out that a key dimension of hierarchy is the "formal authority to compel" (O'Toole and Meier 1999, 507). "Hierarchy can provide institutional support for the current bundle of routines, information systems, values, and other key elements that influence production—offering a crystallization of stable, cooperative effort, the operational status quo" (O'Toole and Meier 1999, 507). Thus, the hierarchical model speaks particularly to the recurrent desire of federal policy makers to achieve stability in homeland security operations and to fix accountability. However, the idea of top-down (i.e., hierarchical) coordination to achieve cooperative effort that provides stability in a multiorganizational environment "rests on the notions that the organizations to be coordinated have been identified or can readily be identified by the headquarters coordinators; that the relationships of these organizations to each other are well understood; that agreement has been reached about what objectives will be accomplished by altering certain of these inter-organizational relationships; and that the authority and means to effectuate desired goals exist to alter the relationships in the desired direction. It assumes hierarchy will facilitate the implementation" (Wise 2002a, 141). Many of these assumptions are questionable at present.

Although research has shown that hierarchically structured institutions may be efficient mechanisms for the performance of routine partitioned tasks, they encounter difficulties in the performance of innovative tasks and those requiring the generation of new knowledge (Bennis and Slater 1964; Daft 1998; Mintzberg 1980). When specialized units are told to cooperate in tasks that typically encounter unanticipated problems requiring novel solutions, the hierarchical form gives higher-level managers few levers with which to ensure that the participating units will collaborate. "By their non-routine nature, such tasks cannot be programmed, and the creative collaboration they require cannot be simply commanded" (Adler 2001, 216).

Network Model

The network model starts with the presumption that public functional fields are populated by a variety of organizations, government agencies, nonprofits, and for-profits (Agranoff and McGuire 2003; Keast et al. 2004; Kickert, Klijn, and Koppenjan 1997; Milward and Provan 2000; O'Toole 1997; Wise 1990). "Networks are structures of interdependence involving multiple organizations as parts thereof, where one unit is not merely the formal subordinate of the other in some larger hierarchical arrangement" (O'Toole 1997, 45). Although networks may take many forms, the type of interest here are public management networks, which are "those led or managed by government representatives as they employ multi-organizational arrangements for solving problems that cannot be achieved, or achieved easily, by single organizations" (Agranoff and McGuire 2001). The activities of public management networks are purposeful efforts to bring parts of organizations together to access knowledge and technology and to guide, steer, control, or manage (Agranoff, forthcoming, 12).

Purposeful efforts to bring parts of organizations together place an emphasis on facilitating interorganizational arrangements in which negotiation and adjustment occur, as opposed to restructuring formal organizations in an attempt to control all future contingencies. Accomplishing this does not mean that the design or structuring of governmental organizations is immaterial. From the network perspective, the emphasis is placed on structuring organizations and organizational arrangements in government, so that government organizations can play positive roles in setting the stage for other organizations in the interorganizational field to interact to accomplish common goals (Wise 1990, 151).

One of the weaknesses of the network model is that accountability is diffused, and assessing performance means that not only must the performance of individual agencies be measured but also the joint action of multiple agencies (Wise and Nader 2006). Thus, in an area such as homeland security, when performance

gaps are experienced, it is difficult for policy makers to isolate and pinpoint fault.

Major works of modern organization theory stress that there is no one structural model that is suitable for all situations. The work of major organization researchers stresses that key determinants of effective organizational structuring and functioning include the nature of the tasks the organizations are to perform and the nature of the environment in which they are embedded (Mintzberg 1980, 1993; Thompson 1967; Williamson 1975, 1990).

Thompson (1967) stresses that internal and external dimensions of organizations cannot be separated from each other and that interdependence among organizations has a major impact on internal organizational structuring. Mintzberg posits that stable versus dynamic and simple versus complex dimensions of organizational environments determine the suitability of different organizational forms. A simply structured organization that relies on direct supervision for its coordination mechanism exists in a simple dynamic environment, whereas mutual adjustment is the coordination mechanism used in the organizational form characterized as "ad hococracy," the structure most appropriate for a complex dynamic environment. As noted earlier, the homeland security system is most like Mintzberg's ad hococracy.

Williamson finds that whether hierarchy should be used and what form it should take depends on the characteristics of the transaction. He argues that hierarchies should be matched with transactions in a discriminating manner (Williamson 1990). The transaction approach applied to the multiorganizational homeland security setting leads organizational policy makers to determine the nature of the functions that need to be performed in homeland security and the types of interactions that need to occur among multiple federal, state, and local agencies, as well as those in the nonprofit sector. The broad categories of functions include preparedness, response, recovery, and mitigation. For the performance of most of these functions, authority is diffuse because of the nature of our system of federalism and private property rights. One area that is less diffuse is response during emergencies in which issues of sovereignty and independent action give way more to considerations of security.

The first phase of reorganization for homeland security in the federal government emphasized the hierarchical model. It may be recalled that following 9/11, the DHS was created with a cabinet-level director to answer the question "who is in charge?" and to better address the threats of terrorism, and particularly to increase the preparedness for terrorism. An initial set of priorities based on the federal government's

experience after 9/11 were set in motion by the secretary for homeland security. Some of the choices made by the department's secretary, in an effort to gear up for the terrorism priority, may have placed a lesser priority on natural disaster response and recovery. Following Katrina, a risk is that in reaction to performance gaps in natural disaster response, Congress and the president will change formal hierarchical structures to emphasize natural hazards response, which could deemphasize other goals such as terrorism preparedness. The next event may then be a large-scale chemical or biological attack, which the latest structural adjustments to the new hierarchy may not address.

Choosing an Organizational Framework for Homeland Security

The choice of which organizational model should form the basic framework for the next phase of homeland security reorganization needs to take into consideration the nature of the homeland security environment. By any standard, the expectation must be that homeland security organizations will continue to exist in a complex environment. Herbert Kaufman points to several potential sources of continuing complexity in organizational environments that are applicable here. It may arise from changes in technology, from changes in people's expectations and demands for more sophisticated protection and services, or from the greater variety of skills, knowledge, and resources required for even small operations to get started and sustain themselves. As the setting changes, organizations of greater sophistication, encompassing specialized tasks and units that have to be kept in balance with one another, will make their appearance. As a result, coordination and the conduct of relations with other highly specialized organizations, necessitated by a finer and finer division of labor and rising interdependence in the system, will become separate functions (Kaufman 1985, 107-8).

An important characteristic of the homeland security environment that bears on the effectiveness of the organizational model chosen is that it is neither simple nor static. New threats and new expectations for dealing with them are emerging as the government organizations themselves change. For example, to address the changing scene of the intelligence function, Congress has created, along with the DHS, the National Counterterrorism Center, the Terrorist Threat Integration Center, and the Terrorist Screening Center. All of these now inhabit the immediate environment of the DHS. The department, which once was thought to be the designated coordinator for intelligence, has now witnessed the creation of a separate Office of the Director of National Intelligence. The coordination of intelligence has become a separate function, as Kaufman might have predicted, and now the secretary of homeland security has designated an assistant secretary for information

analysis as its chief intelligence officer to provide the primary connection between the DHS and others within the intelligence community, including presumably the Office of the Director of National Intelligence (Chertoff 2005b, 12). In effect, Secretary Chertoff has ceded the overall intelligence coordination function to the new national director of intelligence.

The planned interaction of a new or changed organization inevitably comes to terms with the complex and changing environment into which it is inserted, and the assumptions of what is required for coordinated organizational performance are often not met and things are left out. Thus, the plan for the DHS to be the main coordinator of intelligence faced a much more complex intelligence environment and had to be altered. Reorganizations are not undertaken for their own sake but to facilitate change in the operation and behavior of organizations and people engaged in common enterprises. In the case of response to natural disasters, the issue is how to cause change in the operations of a significant number of federal, state, local, and private-sector organizations so that their efforts mesh effectively.

As indicated previously, the choice of organizational structure needs to take into account both the nature of the tasks to be performed and the nature of the environment. Although there is not room here to engage in a comprehensive task analysis, it is clear that various categories of homeland security tasks differ sufficiently, and these differences have implications for organizational design. For response, the nature of the task—saving lives in a defined geographic area—demands fast action and unity of effort. There is more or less widespread agreement that the normal prerogatives of jurisdiction and processes of governance in a federal system of shared powers with separate bureaucracies must be minimized and give way to decisive and unified action.

Recovery shares some similarities with response in that the activity focuses on a defined geographic location. Many more activities are involved, however, and jurisdictional prerogatives and processes of governance must be allowed to play a part in recovery decisions. The rebuilding of New Orleans is an example in which the various branches of government have both shared and independent responsibilities and key roles in decision making and involving citizens in forums to express their preferences.

For preparedness and mitigation, the activities are even more diverse, programs are innumerable, time frames are elongated, and decision making and implementation are spread over the entire country. More emphasis is placed on differentiated needs and circumstances and the need to gain acceptance from multiple stakeholders acting through multiple

governance and decision-making processes. These are not pure types, of course. For example, in order for response to be effective, planning and groundwork must be done to set an agreed-upon framework that will be employed in actual response efforts. Such a response framework cannot be imposed by any one agency, official, or jurisdiction but must involve the actions of multiple interacting networks.

For a basic framework of organization that embraces most of the characteristics of the task, the network model most closely represents what is required. However, as most organization designers have long acknowledged, combination models are most often appropriate. Thus, even though the network model lends itself most appropriately to the overall framework for organization of homeland security, the hierarchical model still has a valuable role to play, especially in response. In fact, the NIMS explicitly incorporates recognition of this proposition. The Incident Command System within the NIMS explicitly specifies that in incidents involving multiple jurisdictions, a single jurisdiction with multiagency involvement, or multiple jurisdictions with multiagency involvement, there must be a unified chain of command with an orderly line of authority, and incident managers at all levels must be able to control the actions of the personnel under their supervision. The incident command organizational structure develops in a top-down, modular fashion based on the size and complexity of the incident, as well as the specifics of the hazard environment (DHS 2004b, 10–11). The response during Katrina experienced problems with unity of command and the NIMS. Actions are needed to modify or supplement the NIMS to remedy the observed deficiencies. Having two military chains of command that in turn are separate from the Department of Homeland Security chain of command clearly needs fixing, for example.

Taking all the functions together, using the network model for the base framework best accommodates the conditions surrounding homeland security—the complexity of the homeland security environment and the rate of change in it; the multijurisdictional and multiorganizational makeup of the homeland security space; and the nature of the functions to be performed. Within that framework, the adoption of other models for certain functions, such as the hierarchical model as the framework for incident command, is feasible and advisable. What is not appropriate is to set the framework for all of homeland security according to the hierarchical model. “Finally, this means that the homeland security challenge is primarily a challenge of interagency and intergovernmental affairs. In this instance, the concept of putting a single official in charge of homeland security and holding him or her accountable is a management and organizational pipe dream” (Donley and Pollard 2002, 138).

At the time that the DHS was created, there was little consideration given in the legislative process to the continuing unstable environment of homeland security and the network model, and therefore little planning for the continuing organizational adaptation that would be needed for the evolving nature of the homeland security functions and the multiorganizational and multijurisdictional arrangements that would be required to fulfill the numerous functions. Instead, the deliberations quickly focused on the hierarchical approach. Applying a strict federal hierarchical approach at this juncture to try to encompass all the risks, functions, and geographical locations involved in homeland security is unlikely to cause significant systemic behavioral change. As discussed earlier, this is not to say that for certain subfunctions, such as incident command, there should be no changes. Clarifying the incident command structure is certainly in order. But for the overall organizational framework of homeland security, insisting on more hierarchy insufficiently recognizes (1) the homeland security system is not the province of one federal department, even the DHS, but many, each with its own authorities and responsibilities fixed in separate federal laws; (2) the plural nature of our federal system, which creates shared authority among the federal government and the states (Khademian 2006, 1106); and (3) the need to change organization as the homeland security situation changes.

The multifunctional and multiorganizational world of homeland security in the United States is populated by multiple networks, and managerial craftsmanship is required to develop the capacity for these various networks and the organizations that populate them to work collaboratively toward the evolving goals of homeland security (Wise 2002a, 141–42). “An effective, homeland security functional system will be composed of thousands of matrixed networks that are dynamically interacting to share information and foster imagination, adaptability, and effective operational management” (Clayton and Haverty 2005, 5).

Effective emergency networks cannot just include government agencies or even agencies and nonprofits. Large corporations have their own emergency management systems, separate from and parallel to those of government. For example, during Katrina, Wal-Mart handed over 25 of its facilities to the relief effort for use as supply depots, shelters, and even a dialysis clinic. In Kenner, Louisiana, just north of the New Orleans airport, in the first critical days, more than 90 percent of the city’s supplies were coming from Wal-Mart. Kenner’s fire chief stated, “If we had waited on the state and federal government, we would’ve starved to death, no joking” (Freedberg 2005). However, John Engler, the president of the National Association of Manufacturers, observed that one of the problems for businesses in Louisiana was

not knowing the right point of contact. Engler said, "You had trucks in staging areas, full of supplies, stuck. I don't think that there's one right way to do it, but what's clearly wrong is not having a plan, not contemplating the potential for outside help, and not having a way to manage that" (Freedberg 2005). Many offers of help from businesses came into FEMA headquarters, and FEMA set up a toll-free hotline to handle them—but only after Katrina had made landfall.

An Adaptive Management Model for Homeland Security

The pertinent question for "knitting together," to borrow President Bush's term, all the organizations that make up the homeland security networks is, what is required for effective network management? As Agranoff has found, organizational participants in action networks come together as representatives of different governmental, quasi-governmental, and nongovernmental organizations, with all of their attendant aims, rules, and procedures. "They must decide, but they do not have hierarchical authority. Instead, the kind of action they take is based on negotiated adjustment while applying extant knowledge and simultaneously going through a learning process" (Agranoff, forthcoming, 391). In the homeland security context, agencies and managers must respond to uncertain events, which creates inherent problems for designing policies and procedures. When uncertainty is the rule and the magnitude, scope, and timing of the response required by the emergency are complex and unknown, ordinary instruments of planning are inadequate (Comfort 1988; Johnson 1999). To overcome uncertain environments, managers must develop organizational learning capacity by employing three rational processes: risk assessment, information feedback to decision makers, and adjustment of performance based on current information (Chen et al. 2003; Comfort 1988, 2002; Holling 1978).

Given the turbulent environment of homeland security and the ongoing reorganization process affecting homeland security organizations, the most suitable approach seems to be adaptive management. Adaptive management techniques provide managers the ability to ensure that decisions are used as an opportunity for organizational learning (Graham and Kruger 2002; Holling 1978). Adaptive management is an iterative process, calling for the integration of science and management, treating policies as experiments from which managers can learn (Graham and Kruger 2002; Holling 1978; Johnson 1999; Lee 1993). The adaptive method requires managers to change their approach as new information arrives (Alexander 2002). This mode of management differs from traditional forms of management by emphasizing the importance of feedback in shaping policy, followed by further systematic experimentation and evaluation (Graham and Kruger

2002; McLain and Lee 1996). Adaptive management is premised on the notion that the knowledge available to a manager is always incomplete and that surprise is an inevitable component of implementation (Holling 1978; Saveland 1989). The process of adaptive management differs from a number of other more traditional approaches to making management decisions (Johnson 1999).

Adaptive management begins by bringing together interested stakeholders to discuss the problem and any available data, then moving on to develop models of the problem (Johnson 1999). Once stakeholders are brought together for discussion and modeling, adaptive managers develop plans to meet goals and generate information to reduce data gaps and uncertainties (Johnson 1999). Management plans are then implemented along with monitoring plans designed to analyze data and update managers' understanding of how the adopted approach worked in practice (Johnson 1999). At the end of the process, results are monitored to evaluate the progress achieved by the management approach taken (Shindler, Cheek, and Stankey 1999). Adaptive management thus entails an ongoing collaborative relationship among separate organizations that come together to achieve common goals.

Adaptive management is suggested for use in framing the overall management approach to assist in the management of homeland security networks. It is not meant as a substitute for functional management protocols and systems such as the Incident Command System, which is based on the hierarchical model. Nonetheless, facilitative frameworks to permit the practice of adaptive management are needed.

Conclusion: Implementing Adaptive Management

For this phase of organizing, policy makers have the opportunity to include a focus on establishing frameworks that can facilitate an adaptive management approach. The establishment of such facilitating organizational frameworks is not without precedent in the federal government. The GAO recently completed a study of three collaborative efforts in which federal agencies worked across agency lines to achieve common objectives. The efforts involved nonfederal partners as well. Although the collaborative efforts studied did not each encompass the entire adaptive management model, they are nonetheless instructive. The study identified the following key practices to sustain collaboration among federal agencies:

- Defining and articulating a common outcome
- Establishing mutually reinforcing or joint strategies to achieve the outcome
- Identifying and addressing needs by leveraging resources

- Agreeing on agency roles and responsibilities
- Establishing compatible policies, procedures, and other means to operate across agency boundaries
- Developing mechanisms to monitor, evaluate, and report the results of collaborative efforts
- Reinforcing agency accountability for collaborative efforts through agency plans and reports
- Reinforcing individual accountability for collaborative efforts through agency performance-management systems
- Involving nonfederal partners, key clients, and stakeholders in decision making

The study also found that agencies could strengthen their commitment to work collaboratively by articulating their agreements in formal documents, such as memoranda of understanding, interagency guidance, or interagency planning documents, signed by senior officials in their respective agencies (GAO 2005g, 10–11). Thus, there are precedents for collaborative frameworks that provide a platform for adaptive management that could potentially be utilized in homeland security and do not necessarily require wholesale formal reorganization. Strengthening collaboration is not the only organizational step required; strengthening the capacity of individual organizations, such as FEMA, is also necessary.

Adaptive management is not a panacea for solving all the problems experienced during Katrina or all the problems in homeland security more generally. It is not a substitute for sufficient professional personnel who are well trained or for astute leadership and decision making. Establishing collaborative relationships also does not mean there is no room for formal organization. On the contrary, it means putting into place a formal framework that facilitates the interpersonal interaction across agency, intergovernmental, and intersectoral boundaries and at multiple levels. What is required for homeland security is for professionals at various levels to work across boundaries, plan and negotiate future activities, and communicate during operations to resolve unanticipated problems. From this perspective, the goal of any adjustments in formal structure is to facilitate collaborative decision making at multiple levels rather than fix decision making in one person or organization at each level, which is then expected to resolve the myriad issues that arise on an unpredictable basis.

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