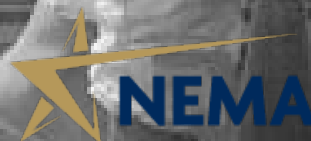
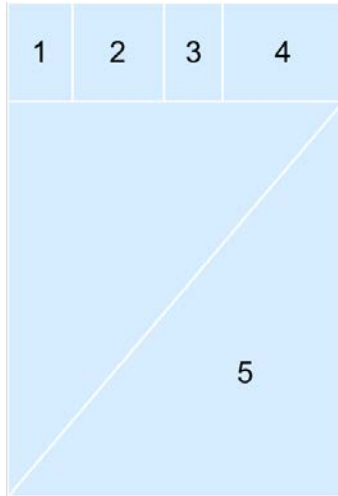




Homeland Security Grant Return on Investment

July 2018





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EXECUTIVE SUMMARY

Capabilities to address terrorist threats have grown since September 11, 2001. Most individuals in the United States now have access to advanced capabilities within a few hours. One reason why has been federal support of state and local efforts to build and sustain these capabilities. In the aftermath of September 11, federal grant programs such as the State Homeland Security Program (SHSP) and the Urban Area Security Initiative (UASI) arose to ensure that jurisdictions had the resources they needed to help defend our country against terrorist threats.

Thankfully, since September 11, we have not experienced another terrorist attack of such magnitude on U.S. soil. As time passes, however, the federal commitment to bolstering terrorism preparedness capabilities across the country has been undermined by questions about whether the SHSP and UASI grants are an effective use of federal funds. To provide evidence of their effectiveness, the National Emergency Management Association (NEMA), as one of the 22 partner organizations of the National Homeland Security Consortium, conducted a nationwide study that examined how SHSP and UASI funds are providing a return on investment toward terrorism preparedness from states and localities. NEMA issued an online survey to all 50 states and to jurisdictions from 50 current and former urban areas eligible for UASI funds. Forty states and 19 urban areas responded. NEMA used these responses to develop a national picture of return on investment and to assess the repercussions of reductions in (or loss of) SHSP and UASI funds.

NEMA identified several findings in relation to two central research questions that guided the study:

- ***How much money has been invested by state and local government in pursuit of terrorism preparedness, and how is this spending affected by federal assistance?*** Although states exhibited different spending approaches in pursuing terrorism preparedness activities, the majority of states are investing more dollars in terrorism preparedness than they are receiving through SHSP and UASI grants. NEMA determined that for every SHSP and UASI grant dollar invested, the median return was \$1.70 for state and emergency management and homeland security agencies. The return for local emergency management and homeland security agencies was \$0.92. Corresponding investments by other state and local agencies increase these returns even further. For example, most state fusion centers do not rely heavily on SHSP and UASI funds to support their cost of operations. Based on the median value, state fusion centers spent an additional \$2.39 of funding from other sources (e.g., state appropriations) for every dollar of SHSP and UASI funds spent. Even more impressive, survey responses from local fire and police departments had a median return of \$49 for every dollar. A principal reason why returns can be so high is that SHSP and UASI grants capitalize on existing human capital and basic responder capabilities.
- ***What has preparedness funding bought since September 11, and what capability do we have now that we did not have then?*** SHSP and UASI funds have facilitated a 124-percent increase in the number of advanced hazardous materials, incident management, and structure collapse/urban search and rescue teams since September 11. These are teams that can respond to unknown chemical releases or incidents involving chemical, biological, radiological, nuclear, or explosive weapons; have attained National Incident Management System Type I, II, or III status as an incident management

team; or can perform at medium or heavy operational levels for structural collapse incidents. The increase in specialized teams has increased the percentage of the U.S. population covered by these advanced capabilities. Among the 843 teams identified by the survey, 92 percent have received support from SHSP or UASI grants. In addition, state and local jurisdictions have used SHSP and UASI funds to improve operational coordination through exercises. Survey results indicate that exercises supported by SHSP or UASI grants heavily rely on these funds at both the state and UASI levels. For example, the 19 UASI jurisdictions responding to the survey reported that 92 percent of the 123 exercises that were supported by SHSP and UASI funds to some extent would not have taken place in the absence of these funds.

NEMA also looked to the past for clues as to what further reductions in (or loss of) SHSP and UASI funds would mean for state and local terrorism preparedness. In fiscal years 2011 and 2012, SHSP and UASI awards decreased by 65 percent and 41 percent, respectively. More than five years later, the survey reflects the true implications of these cuts.

Different states and urban areas were affected in different ways. Based on observations from the fiscal year 2011 and 2012 funding reductions, it is unlikely that many states will react to further cuts in funding by securing additional state funds for terrorism preparedness. The previous substantial decrease in SHSP and UASI funding did not prompt a corresponding increase in state spending to offset the federal funding gap, resulting in stagnation of capability development or even worse. NEMA developed a six-stage scale to categorize and rank the severity of the capability losses that jurisdictions experienced after the fiscal year 2011 and 2012 program cuts. Results indicate that many states are already sacrificing capability, foreshadowing even more severe consequences if program funds are cut in the future.

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INTRODUCTION

WHY DID THE NATIONAL EMERGENCY MANAGEMENT ASSOCIATION AND NATIONAL HOMELAND SECURITY CONSORTIUM CONDUCT THIS STUDY?

The attacks of September 11, 2001, were defining moments in our attitudes toward terrorism. More than a decade and a half later, people can still recall when they initially heard about or saw footage of the Twin Towers' collapse.

In the wake of this tragedy, the federal government took numerous actions to better prepare our nation for future terrorist attacks. Among these actions were new legislation and appropriations that committed to using federal grants to bolster state and local capabilities in defense against terrorism threats and close those gaps in national preparedness not filled practically by the federal government. Two of the most critical grant programs were the State Homeland Security Program (SHSP) and the Urban Areas Security Initiative (UASI).

Almost 17 years later, both programs persist—a testament to their importance. Over time, however, the U.S. Congress has desired more precise quantification of the benefits from these grants, as well as a clearer demonstration of the links between grants and outcomes. Questions remain as to whether the grants are an effective means of assisting states and localities in meeting the National Preparedness Goal.¹ For the emergency management and homeland security communities, there are real consequences to leaving these desires and questions unaddressed. Congressional appropriations to the grant programs have diminished over time. Absent information on the return on investment, such as the corresponding contributions invested by states and local governments, these grants remain an easy target for funding cuts. For example, beginning in fiscal year 2011, SHSP and UASI grants were roughly halved over a two-year period. Without better information about the contributions

State Homeland Security Program (SHSP): The SHSP supports terrorism preparedness activities that address high-priority preparedness gaps within state, local, tribal, and territorial jurisdictions, as based on capability targets and gaps outlined in the Federal Emergency Management Agency's (FEMA's) Threat and Hazard Identification and Risk Assessment (THIRA) process and State Preparedness Report. All 56 states and territories are eligible to apply for SHSP funds. In fiscal year 2017, \$402 million was awarded for distribution among SHSP grant recipients.

Urban Area Security Initiative (UASI): UASI grants address the capabilities-based needs of specific, high-density urban areas based on the THIRA process and other relevant assessments. Historically, as many as 66 urban areas have been designated as eligible for the annually awarded grants. The program's overall goal is to enhance and sustain the integrated capacity and capabilities of urban areas to prepare for acts of terrorism. However, urban areas can also use grants to support other high-threat incidents (e.g., natural disasters). For fiscal year 2017, the U.S. Department of Homeland Security (DHS) designated 33 urban areas as eligible for funding, with the program awarding a total of \$580 million.

¹ The *National Preparedness Goal* identifies 32 core capabilities that preparedness stakeholders collectively need to build, sustain, and deliver to achieve a secure and resilient nation that can prevent, protect against, mitigate, respond to, and recover from the threats and hazards posing the greatest risk.

of states and localities to increasing terrorism preparedness,² federal preparedness grants may face further reductions or elimination.

What Do We Mean by “Return on Investment”?

For this study, our objective was to measure three specific types of returns obtained from SHSP and UASI grants:



Measuring corresponding investments in terrorism preparedness from state and major urban areas



Quantifying the establishment of advanced specialized teams over time



Mapping the increase in the portion of the U.S. population that can readily access the capabilities of these advanced specialized teams

In January 2018, NEMA, as one of the 22 partner organizations of the National Homeland Security Consortium, embarked on an ambitious effort to examine the SHSP and UASI grant programs and how effectively they support terrorism preparedness nationwide. The effort began with a survey issued to all 50 states and to jurisdictions from 50 urban areas currently and formerly eligible for UASI funds³ to help answer long-standing questions such as

- How much money has been invested by state and local governments in pursuit of terrorism preparedness, and how is this spending affected by federal assistance?
- What has preparedness funding bought since September 11, and what capability do we have now that we did not have then?

This report represents responses from 40 states (80 percent response) and 19 urban areas (38 percent response).⁴ These responses present a national picture of the return on investment from SHSP and UASI grants and the repercussions of reductions in (or loss of) SHSP and UASI funding.

² For this study, terrorism preparedness pertains to those efforts to build, sustain, and deliver the capabilities necessary to prevent, protect against, mitigate, respond to, and recover from acts of terrorism. Relevant expenditures include those necessary to address threats posed by cyberattacks and attacks involving chemical, biological, radiological, nuclear, or explosive (CBRNE) weapons.

³ NEMA issued the survey to jurisdictions in the 33 urban areas that were eligible for UASI funding in fiscal year 2017, as well as selected jurisdictions (randomly sampled) from an additional 17 former UASI-eligible urban areas.

⁴ Please note, however, that not all states and UASI jurisdictions provided complete responses to the survey; the number of respondents to each section of the survey varied. Throughout the report, we provide the corresponding sample size (i.e., *n*) that served as the basis for the analysis.

SURVEY FINDINGS

Two versions of an online survey—one tailored to states and the other to local jurisdictions⁵—covered the following topics: (1) UASI and SHSP grant expenditures in fiscal year 2017; (2) state/local budget expenditures on terrorism preparedness; (3) return on investment outputs (e.g., plans, exercises,⁶ training); (4) specialized teams; (5) fusion centers; and (6) effects of reductions in SHSP and UASI program funds. The survey results led to the identification of 10 findings, which are highlighted in bold throughout the text. We organized these findings according to the two aforementioned questions, as well as a final section on the possible consequences of future reductions in SHSP and UASI program funds. Also included in the report are two case studies highlighting terrorism preparedness improvements, as well as a number of text boxes providing the perspectives of individual survey respondents in their own words.

HOW MUCH MONEY HAS BEEN INVESTED BY STATE AND LOCAL GOVERNMENTS IN PURSUIT OF TERRORISM PREPAREDNESS, AND HOW IS THIS SPENDING AFFECTED BY FEDERAL ASSISTANCE?

To arrive at estimates of relevant terrorism preparedness expenditures,⁷ the surveys focused on a few components of government agency budgets:⁸ (1) personnel (including salaries and benefits); (2) supplies, equipment, and capital expenditures; and (3) state-funded grants (for states only).

How Did We Estimate Terrorism Preparedness Expenditures on Personnel?

One challenge with estimating relevant expenditures for terrorism preparedness is to determine which personnel should be included. For many personnel, terrorism preparedness is a collateral responsibility. Different stakeholders have different views on what the threshold of involvement should be before personnel can be counted. As a result, we asked respondents to identify the number of personnel in their emergency management and homeland security agencies that satisfied different levels of requirements. Level categories included the following:

Broad: Include personnel in the organization who spend roughly 10 percent or more of their hours each year on terrorism preparedness. Also include personnel who: (1) would have consequence management responsibilities following a terrorist attack (e.g., state emergency operations center staff); (2) have salaries *partially or fully paid* through SHSP and UASI funds; or (3) serve as members of specialized teams with capabilities to respond to Chemical Biological Radiological Nuclear and Explosive (CBRNE) incidents.

Narrow: Include personnel in your organization whose positions are dedicated specifically to terrorism preparedness (i.e., they spend roughly 90 percent or more of their hours each year on terrorism preparedness activities). Also include personnel who: (1) have salaries *fully paid* through SHSP and UASI funds; or (2) serve as members of specialized teams with capabilities to respond to CBRNE incidents.

Unless otherwise noted, results are reported based on the broad definition for inclusion.

⁵ The state and local versions of the survey questionnaire contained 68 and 45 questions, respectively.

⁶ The state version of the survey included an additional section that addressed regional exercises.

⁷ In developing the survey, attempts to improve data quality came by addressing three principal challenges: (1) most state and local data management systems do not align their expenditure data in ways that can easily isolate expenses relevant to terrorism preparedness; (2) different opinions exist on what should or should not be counted as terrorism preparedness activities; and (3) there is the potential for data on terrorism preparedness expenditures to reside within multiple agencies within a jurisdiction.

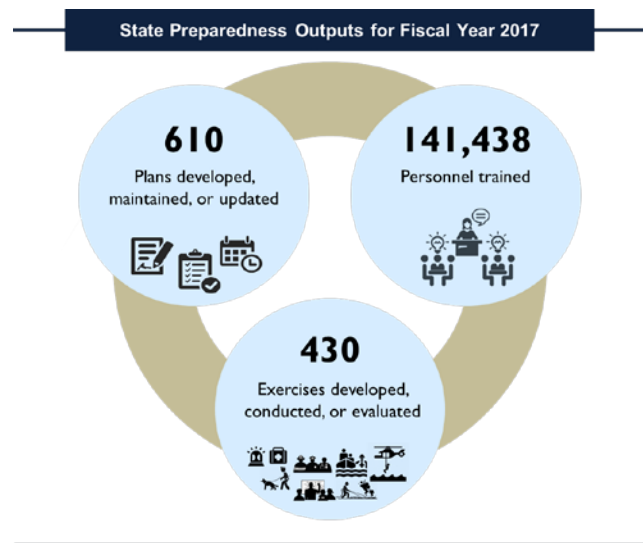
⁸ States were also asked to characterize any expenditures provided through state-provided grants for terrorism preparedness.

For every SHSP and UASI grant dollar invested, the median return was \$1.70 for responding state emergency management and homeland security agencies; for local emergency management and homeland security agencies, it was \$0.92. Corresponding investments from other jurisdictional agencies increase these returns even further.

Although states exhibited different spending approaches, data on fiscal year 2017 expenditures indicate that the majority of states invest more dollars in terrorism preparedness than what they receive through SHSP and UASI grants. Thirty states provided sufficient expenditure information to determine the fraction of expenditures associated with SHSP and UASI grants (versus other sources). In fiscal year 2017, the median amount of money supplementing every dollar of SHSP and UASI funding spent in state emergency management and homeland security agencies was \$1.70 (*interquartile range* = \$0.07–\$4.16).⁹ Approximately 57 percent of the responding states had returns that were more than \$1.00. Furthermore, returns on SHSP and UASI investments generally increased when considering the contributions of other state agencies.¹⁰ In particular, we observed two cases in which state law enforcement agencies provided substantial additional returns at the Broad category level (see the “How Did We Estimate Terrorism Preparedness Expenditures on Personnel?” box on the previous page). This benefit requires further examination, however, as many of the other state agencies did not submit a breakdown of their expenditures or provided only partial information.

Available data from UASI-jurisdiction responses was also limited, with only 13 jurisdictions (24 agencies total) providing detailed expenditure data. For local emergency management and homeland security agencies, the median return on SHSP and UASI investment was an additional \$0.92 (*n*=8, *interquartile range* = \$0.48–\$1.55). In comparison, additional investments by fire and police departments were higher, with a median return of \$49 for every dollar (*n*=8, *interquartile range* = \$4.75–\$146). When analyzing the individual returns associated with (1) personnel and (2) supplies, equipment, and capital, we determined that the larger returns were driven by relevant personnel expenditures.

Even under a more restrictive threshold for personnel inclusion (i.e., the Narrow category level), fire and police departments still provided more than a comparable investment, with a median return of \$2.19 (*interquartile range* = \$1.58–\$65). Additionally, one police department and three public health agencies reported relevant expenditures without any corresponding investment from SHSP and UASI funds. The



⁹ The *interquartile range* is the range associated with the middle 50 percent of results in a dataset.

¹⁰ Respondents listed those state agencies that (1) had significant expenditures toward terrorism preparedness and (2) in total, captured at least 90 percent of all state government expenditures toward terrorism preparedness. Fifteen states (out of 36) identified additional agencies with significant terrorism preparedness expenditures, with law enforcement (eight) and public health (five) agencies identified most frequently.

results highlight the additional return on investment captured by considering a broader set of agencies that have been incorporated into the homeland security enterprise.¹¹

WHAT HAS PREPAREDNESS FUNDING BOUGHT SINCE SEPTEMBER 11, AND WHAT CAPABILITY DO WE HAVE NOW THAT WE DID NOT HAVE THEN?

Investments in terrorism preparedness have resulted in tremendous gains in capability since September 11. To demonstrate this progress, the analysis focused on the role of SHSP and UASI funds in supporting three areas: (1) the development of advanced specialized teams; (2) the establishment and maturation of state fusion centers; and (3) the use of exercises to enhance multi-jurisdictional and multi-level coordination.

Advanced Specialized Teams

This study focused on three specialized teams that could be deployed in the immediate aftermath of a terrorist attack and defined advanced capabilities for each team as satisfying the following:¹²

- Hazardous materials (HazMat) response teams trained and equipped to respond to unknown chemical releases or incidents involving CBRNE weapons¹³
- Incident Management Teams (IMTs) that have attained National Incident Management System (NIMS) Type I, II, or III status
- Structural collapse or urban search and rescue (USAR) teams that can perform at medium or heavy operational levels

SHSP and UASI funds have facilitated a 124-percent increase in the number of advanced HazMat, incident management, and structural collapse/USAR teams since September 11.

Survey respondents identified a total of 839 teams satisfying the aforementioned capability requirements. The increase in access to HazMat, incident management, or structural collapse/USAR capabilities nationwide has been dramatic. Comparing the number of advanced teams established after 2001 to what existed before, we observed the following:¹⁴

- 1.8 times the number of HazMat teams
- 18.5 times the number of IMTs
- 1.9 times the number of structural collapse/USAR teams

The vast majority (92 percent) of these teams have received support from SHSP and UASI grants ($n = 794$). Twenty-seven states (out of a possible 39) reported establishing a state-backed network of

¹¹ Only six jurisdictions provided a complete set of expenditure data for all agencies responsible for terrorism preparedness activities in the jurisdiction. Median values were \$1.29 and \$0.90 for the broad and narrow definitions, respectively (*interquartile range* = \$1.18–\$21, \$0.36–\$1.34, respectively).

¹² While essential for terrorism preparedness, bomb squads and SWAT teams were not addressed in the survey in deference to sensitivities that law enforcement agencies might have about divulging this type of information. However, we were extremely gratified by the responses from a number of jurisdictions that entrusted us with such information.

¹³ Analogous to a National Incident Management System (NIMS) Type I or Type II HazMat entry team, for example.

¹⁴ Ratios based on teams for which data on the year they achieved advanced capabilities is known.

specialized teams to provide localities with more advanced capabilities and support regional approaches to terrorism response. In contrast, other states have taken a bottom-up approach to identifying localities that require more advanced capabilities. Regardless, federal funds have helped ensure that specialized teams within select local jurisdictions have the advanced-level capability to prepare for and respond to an act of terrorism, as well as to serve as shared assets through mutual aid agreements. As noted by one state respondent, it can now handle many types of incidents without FEMA because of its state and local investments in preparedness.

Case Study: Los Angeles Police Department Hazardous Materials Unit

Today, it's hard to imagine that a major city like Los Angeles would not have this capability. But soon after the attacks of September 11, a surge in calls about letters containing "white powder" left the Los Angeles Police Department (LAPD) Hazardous Materials Unit frustrated with the limited equipment and technology available to first responders to resolve whether the letters contained biological agents.



Los Angeles is a prime example of the dramatic improvements since September 11 in expanding CBRNE response capabilities and improving coordination across all levels of government. Since 2001, the LAPD Hazardous Materials Unit used UASI grant funds to offset the costs of advanced equipment and receive advanced training to address CBRNE threats. As a result, the unit can now determine the potential for a biological threat on site by conducting operations within the contaminated area. This greatly reduces the time and resources necessary to address these calls, limiting their fiscal impact on the department and community. In addition, all members of the unit are certified to the Technician/Specialist level, the highest level of training offered for hazardous material emergency responders. Members completed extensive training to operate in CBRNE environments, including training with "live" chemical warfare nerve agents.

The LAPD Hazardous Materials Unit also built on the responses to the 2001 "white powder" letters, strengthening relationships with the Federal Bureau of Investigation and the United States Postal Service to enhance coordination in future incidents. More broadly, the region established a Joint Hazard Assessment Team, which includes the LAPD, the Los Angeles Fire Department, and the Los Angeles Department of Public Health, to facilitate a collaborative approach to incident response. This emphasis on relationship building has increased readiness and accelerated the city's ability to mitigate the impact of incidents.

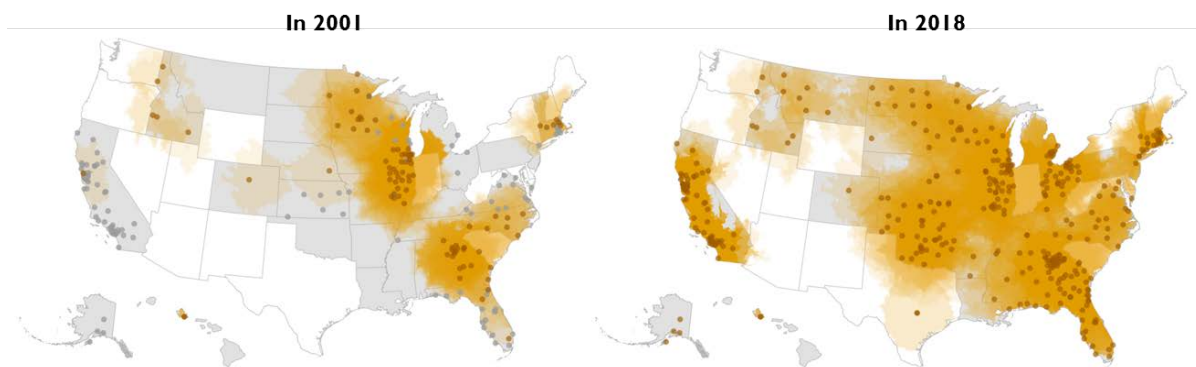
In Their Own Words: Insights from the Wisconsin Survey Response

Federal investment in homeland security and terrorism preparedness is critical because it elevates the state's ability to deal with larger, more complex incidents. Preparing for a large-scale, complex, multi-jurisdictional incident is not a priority for local agencies when compared to all the other needs they face. They train and equip themselves for their daily and most commonly occurring incidents. Federal grant funds provide an extra layer that allows local responders to participate in regional response teams and train and equip for the larger, more complex incidents. The funds provide an incentive and opportunity to be part of a larger structure that benefits everyone involved in preparedness and response.

The increase in specialized teams for HazMat, incident management, and structural collapse/USAR has increased the percentage of the U.S. population covered by these advanced capabilities to address terrorism events.

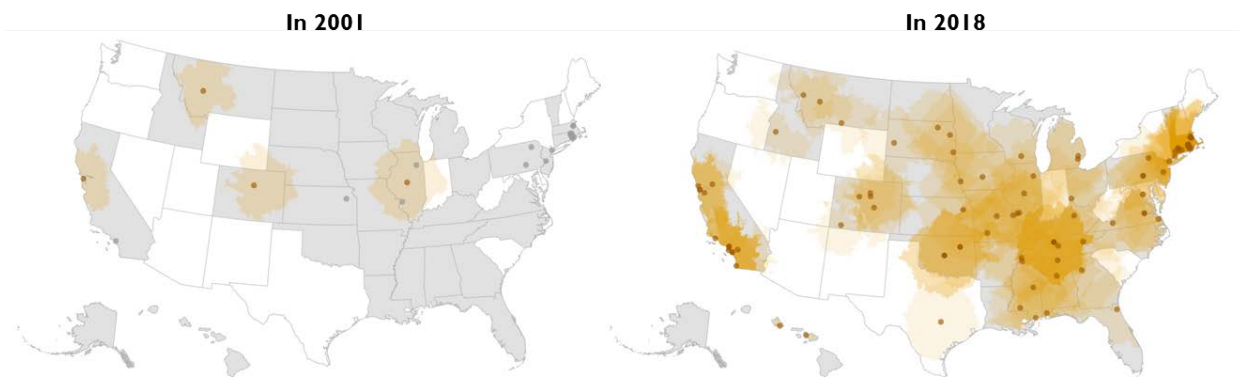
With the progress states and localities have made in developing advanced teams, a much larger portion of the U.S. population is now covered. Figures 1 through 3 map the locations of advanced HazMat, incident management, and structural collapse/USAR teams across the nation, comparing the number and distribution of teams in 2001 to the number and distribution in 2018 based on responses from 34 states (colored in gray on the maps) and additional UASI jurisdictions. For each team, we modeled the corresponding geographic area it covers based on the team's primary location, available road and highway networks, and drive-time constraints. These areas are indicated by the orange-shaded regions on the maps.

Figure 1. Areas accessible to an advanced HazMat response team within a four-hour drive



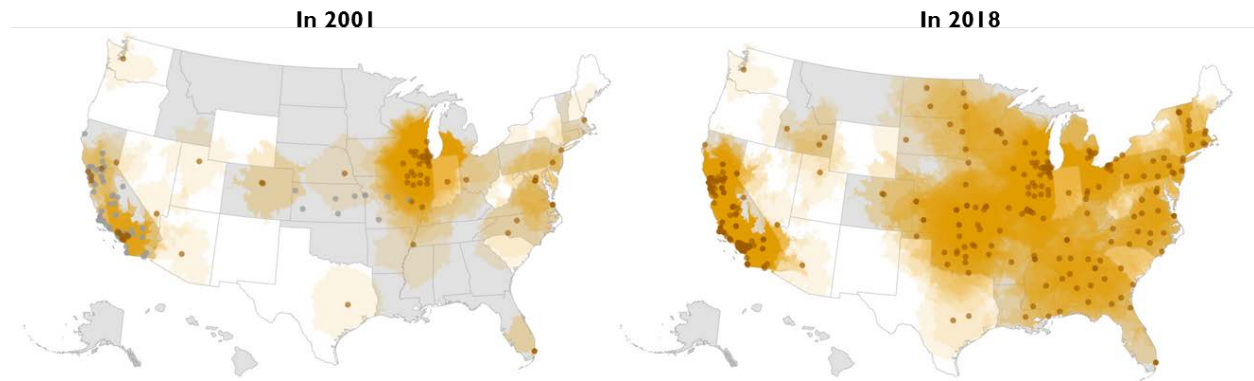
Note: Comparison showing the increase in coverage nationwide from HazMat teams with advanced capabilities based on responses from 34 states (in gray) and additional UASI jurisdictions. Orange-shaded regions indicate areas accessible within a four-hour drive of team locations. Darker shading indicates areas where overlapping coverage from multiple teams occurs. Dark grey dots (on the 2001 map) indicate team locations for which data on when they achieved advanced capabilities are unavailable.

Figure 2. Areas accessible to an advanced IMT within a four-hour drive



Note: Comparison showing the increase in coverage nationwide from IMTs with advanced capabilities based on responses from 34 states (in gray) and additional UASI jurisdictions. Orange-shaded regions indicate areas accessible within a four-hour drive of team locations. Darker shading indicates areas where overlapping coverage from multiple teams occurs. Dark grey dots (on the 2001 map) indicate team locations for which data on when they achieved advanced capabilities are unavailable.

Figure 3. Areas accessible to an advanced structural collapse/USAR team within a four-hour drive



Note: Comparison showing the increase in coverage nationwide from structural collapse/USAR teams with advanced capabilities based on responses from 34 states (in gray) and additional UASI jurisdictions. Orange-shaded regions indicate areas accessible within a four-hour drive of team locations. Darker shading indicates areas where overlapping coverage from multiple teams occurs. Dark grey dots (on the 2001 map) indicate team locations for which data on when they achieved advanced capabilities are unavailable.

Each of the three figures shows a growth and spread in coverage between 2001 and 2018. This translates into a risk buy-down for the populations that now have access to these teams. The benefits of this growth are enhanced with the location of these resources in more densely populated areas. Table 1 highlights the increase in the percentage of the population covered by these teams.¹⁵ As indicated by the broad ranges listed, however, the underlying datasets of when teams achieved their advanced capabilities requires further exploration, as this information remains unknown for numerous teams.

Table 1. Percentage of the U.S. population covered by advanced HazMat, incident management, and structural collapse/USAR teams, 2001 versus 2018

Team Type	Percentage of U.S. Population Covered, 2001^a	Percentage of U.S. Population Covered, 2018	Percentage Point Increase
HazMat	68.1–95.4	98.2	2.8–30.1
Incident Management	19.6–57.9	94.5	36.6–74.9
Structural Collapse/USAR	83.6–85.7	97.6	11.9–14.0

^a The value range accounts for two different assumptions. The lower-bound value assumes that all “unknown” teams—i.e., teams for which data are unavailable on when they achieved advanced capability—attained advanced capability only after 2001. Alternatively, the upper-bound value assumes these teams all attained advanced capability by 2001.

¹⁵ We adjusted our estimates of the percentage of the U.S. population to account for states that did not respond to the survey while acknowledging the benefits provided by teams in neighboring states and UASI jurisdictions within those states that did respond.

Case Study: Connecticut Incident Management Team Three

Two incidents drawing national attention highlight how Connecticut has benefited from rapid access to more advanced incident management capabilities, as well as the role of federal grants in maturing capabilities. On February 7, 2010, a massive explosion at the Klean Energy power plant in Middletown, Connecticut, killed six workers and injured at least 40 others. Connecticut Incident Management Team Three (CT-IMT3) supported the Incident Commander in managing a complex response that involved more than 250 federal, state, local, and private-sector responders. The team helped develop Incident Action Plans and provided recommendations and technical assistance to support decisions and conduct operations under the Incident Command System. Local authorities commended the team for alleviating the stress of planning and resource management from the Incident Commander. Even so, an after-action review of the incident recommended additional equipment and training opportunities for the team. Through SHSP and UASI program funding, the team was able to address these needs. For example, the team used funds to send members to position-specific training, and to also support opportunities to shadow federal Incident Management Assistance Teams during several large, complex incidents. As a result, more than two years later, CT-IMT3 was better prepared to deploy and assist in another crisis—the Sandy Hook Elementary School shooting. Once again, CT-IMT3 supported local authorities, supplying the unified command with the incident planning expertise and capabilities to manage the largest grade-school mass shooting in U.S. history.

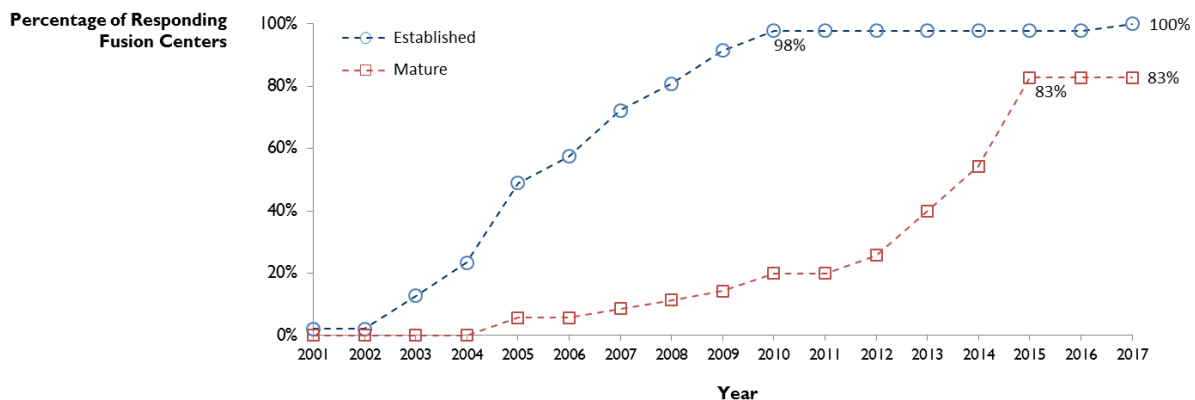


Local authorities commended the team for alleviating the stress of planning and resource management from the Incident Commander. Even so, an after-action review of the incident recommended additional equipment and training opportunities for the team. Through SHSP and UASI program funding, the team was able to address these needs. For example, the team used funds to send members to position-specific training, and to also support opportunities to shadow federal Incident Management Assistance Teams during several large, complex incidents. As a result, more than two years later, CT-IMT3 was better prepared to deploy and assist in another crisis—the Sandy Hook Elementary School shooting. Once again, CT-IMT3 supported local authorities, supplying the unified command with the incident planning expertise and capabilities to manage the largest grade-school mass shooting in U.S. history.

Fusion Centers

Fusion centers emerged as a potential solution to one of the harshest criticisms identified from September 11—the inability to share information and “connect the dots.” Fusion centers serve as the focal points within states and urban areas for the collection, analysis, and dissemination of threat-related information. Today, each state has at least one fusion center. Figure 4 illustrates the inception of and growth in the number of state fusion centers over time since 2001 based on data from 47 states.

Figure 4. Establishment and maturation of state fusion centers over time since September 11, 2001



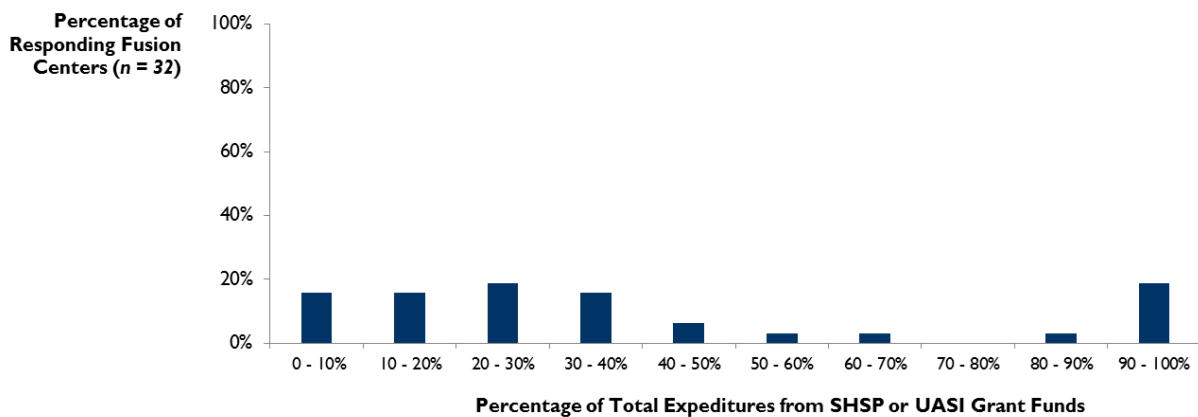
Fusion centers use SHSP and UASI funds to assist in maturing their capabilities. Also shown in Figure 4 is a timeline of when the state fusion centers achieved the final “Mature” stage under the National Network of Fusion Centers maturity model.¹⁶ The sharp upturn beginning in 2011 likely reflects the formal release of the maturity model to evaluate progress and its use in reporting progress in the DHS Office of Intelligence Analysis’s annual National Network of Fusion Centers assessment. As of January 2018, however, 17 percent ($n = 35$) had yet to fulfill the requirements for reaching this stage.

SHSP and UASI program funds make up the majority of federal support for state fusion centers.¹⁷ However, **most state fusion centers did not rely on SHSP and UASI funds to support the majority of their cost of operations in fiscal year 2017** (see Figure 5). Among states that responded to this portion of the survey ($n = 32$):

- Nearly half (45 percent) had fiscal year 2017 expenditures in which SHSP and UASI funds contributed to less than a quarter of their total fusion center expenditures; and
- Nearly three-quarters (72 percent) had fiscal year 2017 expenditures in which SHSP and UASI funds reflect less than half of total fusion center expenditures.

Notable exceptions exist. Five states indicated that 100 percent of their state fusion center expenditures in fiscal year 2017 were supplied through SHSP and UASI funding. But **based on the median value, for every \$1 of SHSP and UASI funds used, state fusion centers spent an additional \$2.39 of funding from other sources such as state appropriations.** We found no correlation between the magnitude of the SHSP and UASI funds used and the resulting ratio of state and local expenditures to federal grant expenditures.

Figure 5. Percentage of total expenditures sourced from SHSP and UASI grant funds



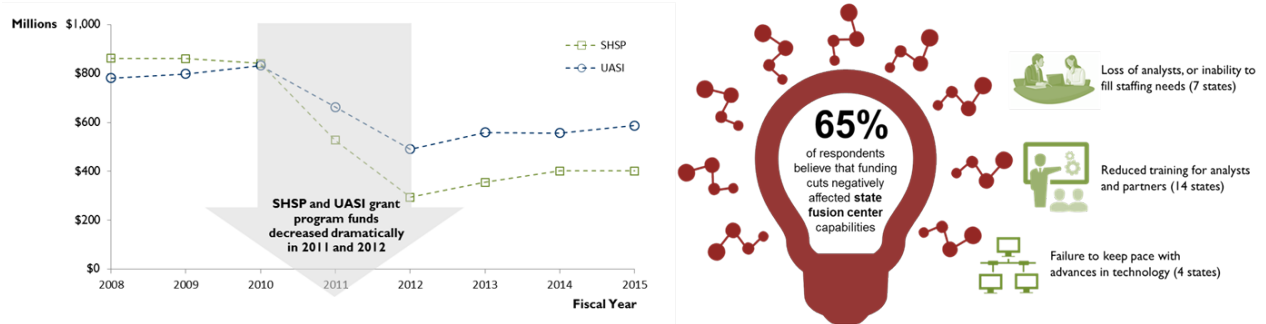
¹⁶ DHS developed a four-stage National Network Maturity Model that defines “Mature” as the stage in which the National Network of Fusion Centers has the full capability to leverage the collective resources among individual fusion centers and adjust to both the changing threat environment and evolving requirements.

¹⁷ Of the 35 states responding to this portion of the survey, 31 (89 percent) reported that UASI and SHSP funds make up more than three-quarters of all federal support they received for their state fusion center. For 23 states, UASI and SHSP funds are the only federal funds their state fusion center received.

In Their Own Words: Insights from the Virginia Survey Response

In years past, more SHSP and UASI funds were available to assist with critical training programs related to fulfillment of the Baseline Capabilities of Fusion Centers. These training programs provided foundational and advanced analytical training for Virginia Fusion Center staff to improve finished analytical products in support of the Intelligence Community. The inability to host training programs such as these diminishes the overall quality of analytical production over time as turnover continues.

Consequences of Past Grant Reductions on State Fusion Centers

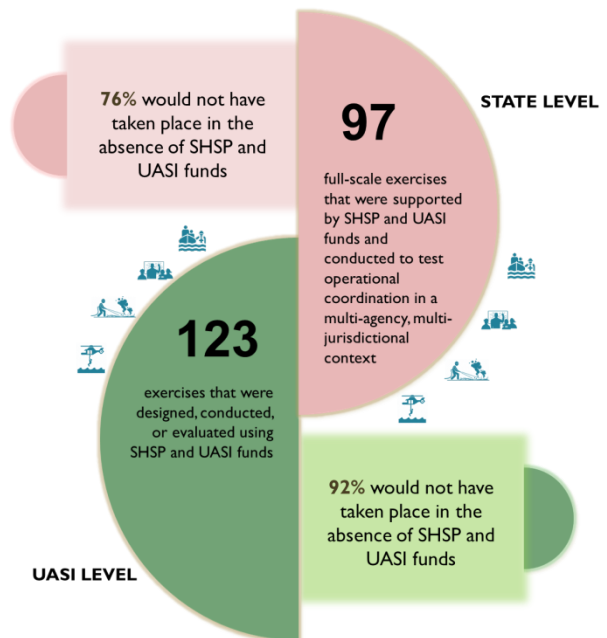


Fusion centers provide a good example of how SHSP and UASI funds provide an additional layer of training to personnel that are paid for through other funding sources.

In fiscal year 2017, 345 state fusion center analysts (based on 38 responding states) received training supported by SHSP or UASI funds or a SHSP- or UASI-funded trainer. The median number of analysts trained was six (*interquartile range* = 2–10.75). Only three state fusion centers indicated that none of their intelligence analysts received training supported by these grant programs. In contrast, the median number of state fusion center analysts supported through either an SHSP or UASI grant in fiscal year 2017 was 2.5 (*interquartile range* = 1–5), with seven states reporting that none of their intelligence analysts were paid for, either partially or entirely, through SHSP and UASI funds. For some responding states, ratios of analysts trained versus paid for through SHSP and UASI funds were as high as 20 or 30 to 1. As noted by one state respondent, the grant-funded training facilitates information sharing across the National Network of Fusion Centers by instilling a uniform approach to investigative case support and vetting and submitting Suspicious Activity Reports.

Exercises Lack of coordination among first responder agencies was one of the challenges identified in the 9/11 Commission Report. Exercises are integral aspects to verifying competencies and developing readiness. Full-scale exercises, in particular, allow

Effect of SHSP and UASI Funding on Fiscal Year 2017 Exercises



participants to mimic the complex coordination challenges they may encounter in the context of a real-world event.

Exercises supported by SHSP and UASI grants heavily rely on these funds at both the state and UASI levels.

For fiscal year 2017, responding states ($n = 36$) identified a total of 251 full-scale exercises that they supported (e.g., personnel participation, exercise design, funding) in which operational coordination was tested in a multi-agency, multi-jurisdictional context. Of these, roughly half (51 percent) received support from SHSP or UASI funding. For these 128 exercises, the reliance on SHSP and UASI funds for support was high. State respondents estimated that 76 percent (97 exercises) would not have taken place without SHSP and UASI funds. Moreover, six states indicated that only SHSP and UASI funds were used to support all of their full-scale exercises that tested operational coordination in a multi-agency, multi-jurisdictional context.

Reliance on SHSP and UASI funds was even greater for UASI jurisdictions. The 19 UASI jurisdictions responding to this section of the survey identified a total of 123 exercises that were designed, conducted, or evaluated using UASI and SHSP funds. Absent these funds, respondents indicated that 92 percent (113 exercises) would not have taken place. As shown in Figure 6, the loss of SHSP and UASI funding would have severe effects on the number of opportunities to coordinate among different preparedness stakeholders.

Figure 6. Preparedness stakeholder participation in UASI jurisdiction exercises



WHAT DOES THE PAST TEACH US?

One way of examining the possible consequences of future reductions in preparedness grants is to simply look at the past, since SHSP and UASI grant programs have been subject to past reductions. The most recent cuts took place in fiscal years 2011 and 2012, when SHSP and UASI awards decreased by 65 percent and 41 percent, respectively. More than five years later, the survey reflects the true implications of these cuts.

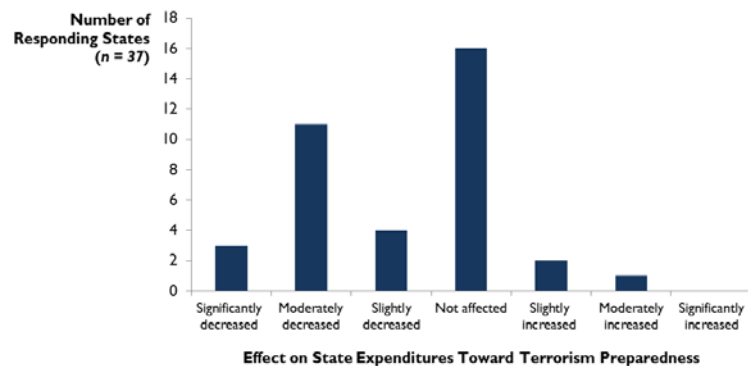
In Their Own Words: Insights from the Oklahoma Survey Response

The Oklahoma Regional Response System (RRS) is a robust system made up of numerous public safety response disciplines strategically scattered across the state to provide efficient coverage during emergencies. The RRS was designed and built when Oklahoma received almost 10 times the amount of grant money we currently receive from DHS. However, due to an almost 90-percent decrease in SHSP and UASI funding, RRS is now in sustainment mode, which allows for only the most basic expenditures necessary to keep the system operational. Original equipment for the RRS units is reaching its end of life and will possibly be unsafe to use if not replaced. However, there is very little money available to make such replacements. The severe decrease in funding has made growth unsustainable and very much opens the door to possibly seeing a decrease in the current capability to save lives within the state.

It is unlikely that some states will react to further cuts by securing additional state funds for terrorism preparedness.

At the time of the last decrease, nine states contributed little or no funding for terrorism preparedness activities. For these states, the substantial decrease in SHSP and UASI funding did not prompt a corresponding increase in state spending to offset this funding gap, and it is unlikely that further cuts would be any different. More broadly, of the 37 states responding to this portion of the survey, 14 reported that the decrease in SHSP and UASI funds led to a moderate or significant decrease (defined as more than 10 percent) in corresponding state spending toward terrorism preparedness. In comparison, only three states reported corresponding increases in state expenditures to offset the decrease in SHSP and UASI funds (see Figure 7).¹⁸ Additionally, respondents from two states noted that their states had to pass the extra burden from the funding gap on to localities.

Figure 7. Impact of the decreased SHSP and UASI funds on state expenditures



For a number of states and UASI jurisdictions, the SHSP and UASI program reductions forced them to apply their remaining grant amounts toward sustaining and maintaining existing capabilities. The result has been stagnation in capability development.

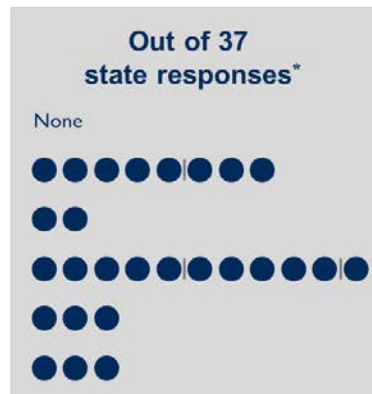
Because of the grant reductions, state agencies were forced into difficult decisions regarding their terrorism preparedness activities. For many states responding to the survey, this meant focusing on sustaining and maintaining the capabilities they had already built. The effects varied in severity, however, as detailed in the “Loss of Capability Due to Prior Funding Cuts” infographic box below. Based on survey responses, **some states are already experiencing difficulty in sustaining existing capabilities** because of the previous funding cuts. For example, some jurisdictions have described having to proactively sacrifice training and exercises in order to shield their specialized teams from dismantling. Moreover, jurisdictions predict far more dramatic losses to capability in the future, as the equipment purchased with large capital expenditures eventually breaks down. Many of these equipment purchases occurred prior to the funding cuts, were heavily supported by SHSP and UASI grants, and meant to fill the national gap in preparedness. Any further reductions in SHSP and UASI program funds may push states and UASI jurisdictions to suffer more extreme losses than were felt in the fiscal year 2011 and 2012 cuts, and therefore severely handicap preparedness efforts already achieved.

¹⁸ Sixteen states did not link a causal connection between decreases in SHSP and UASI funds and state expenditures for terrorism preparedness. However, in five of these cases, the lack of any effect stemmed from the fact that the state had already zeroed out funding for terrorism preparedness.

Loss of Capability Due to Prior Funding Cuts

NEMA asked jurisdictions to describe how SHSP and UASI funding reductions in fiscal year 2011 and 2012 affected terrorism preparedness. Based on the severity of the losses experienced, we developed a continuum of stress. Results indicate that a number of jurisdictions are already sacrificing capability, foreshadowing severe implications for any additional funding cuts.

Stage 1: Minimal Stress	Reduction in stakeholder interdisciplinary engagements
2	Delay or elimination of new projects and initiatives to increase capability
3	Inability to sustain/maintain equipment
4	Decrease in training and exercise opportunities
5	Drop in NIMS typing level
Stage 6: Critical Stress	Loss/consolidation of personnel or assets (e.g., teams, equipment caches)



Only **two states** expressed that they were not under stress by the SHSP and UASI program reductions

*Two state responses mentioned nonspecific decreases in capability that could not be categorized, and an additional six states did not discuss whether they experienced losses.

In Their Own Words: Insights from the Illinois Survey Response

Until fiscal year 2017, decreases in funding did not affect specialized team capabilities because we closed other programs to prioritize the response capability of these teams. However, starting in fiscal year 2017, the decrease in funds has forced us to close down three Statewide Weapons of Mass Destruction Teams and merge some of their assets into other teams. At this point, the decrease in funding is limiting capital replacement. Many of our teams received their capital equipment (e.g., vehicles, CBRNE sensors, communications gear) between 2004 and 2007. That equipment is reaching 11 to 14 years of age. At some point in the near future when large capital equipment breaks, it will not be replaced, reducing our ability to respond.

FINAL THOUGHTS

Given the wide variety of threats and vulnerabilities that states and major urban areas face, it is not surprising that they have adopted different attitudes toward terrorism preparedness. Moreover, jurisdictions have had to formulate their approaches and make decisions even as our nation's understanding of what constitutes terrorism preparedness has continued to evolve, and in the face of corresponding shifts in federal priorities. For a few jurisdictions, terrorism preparedness is a federal responsibility, discharged through federal grants. Given limited operating budgets, perceived low probabilities of terrorist attacks, and more pressing daily needs, SHSP and UASI grants are the sole basis of any terrorism preparedness capability. Cuts in these grants simply prompt cuts in capability.

A far greater number of jurisdictions, however, have used federal preparedness grants to catalyze and substantiate their own investments in terrorism preparedness. Our results indicate that SHSP and UASI grants take advantage of existing human capital and basic responder capability that reside within jurisdictions to establish advanced capabilities, providing a substantial cost savings versus creating these capabilities from scratch. This return on investment is even greater when looking beyond the emergency management and homeland security communities to include other state and local agencies, many of

which are engaging in terrorism preparedness efforts with little or no additional SHSP and UASI investment.

The capabilities to address terrorist threats have grown enormously since September 11, 2001. Most citizens of the United States now have access to advanced capabilities within a four-hour drive of their residence. But capability progress has been stifled in recent years, as jurisdictions are still dealing with the “new normal” imposed by the severe SHSP and UASI program cuts in fiscal years 2011 and 2012. These cuts have already slowed or stopped many jurisdictions from progress toward the National Preparedness Goal and have detrimental effects on the National Preparedness System. Although a few fortunate jurisdictions have been able to use their own funding to fill in the gap, our survey results indicate that most states and local jurisdictions are already sacrificing capability due to funding cuts. Ironically, one of the first activities lost are the interactions (e.g., working groups, stakeholder engagement) that allow the emergency management and homeland security communities to draw in and coordinate the broader participation in terrorism preparedness that is generating additional returns on investment.

Meanwhile, more than one jurisdiction ominously discussed being on “borrowed time,” with large-scale capital investments nearing the end of their lifespans. The funds available soon after the establishment of these grants for capital expenditures no longer exist, foreshadowing potentially more substantive losses of capability when equipment finally fails. Even after they’ve been initially established, trained, and equipped, specialized teams require future federal grant funds to maintain and replace their equipment and address training needs from staff turnover and refresher training. Moreover, simply maintaining the status quo is tantamount to falling behind, given the dynamic and expanding nature of terrorist threats. Without greater investment in terrorism preparedness, the nation may soon find itself in a new era in which capabilities are in decline.

ACKNOWLEDGEMENTS

The sponsors of this project would like to express its deep appreciation to the following state agencies and UASI jurisdictions. Without their efforts to coordinate, contribute to, and champion the completion of the survey, this report would not have been possible.

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- Alaska Department of Military and Veterans Affairs, Division of Homeland Security and Emergency Management
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- Arkansas Department of Emergency Management
- California Governor's Office of Emergency Services
- Colorado Division of Homeland Security and Emergency Management
- Connecticut Department of Emergency Services and Public Protection
- Delaware Emergency Management Agency
- Florida Division of Emergency Management
- Georgia Emergency Management and Homeland Security Agency
- Hawaii Department of Defense
- Idaho Office of Emergency Management
- Illinois Emergency Management Agency
- Iowa Department of Homeland Security and Emergency Management
- Kansas Highway Patrol
- Kentucky Division of Emergency Management
- Louisiana Governor's Office of Homeland Security and Emergency Preparedness
- Massachusetts Homeland Security Division, Executive Office of Public Safety and Security
- Michigan State Police, Emergency Management and Homeland Security Division
- Minnesota Department of Public Safety, Division of Homeland Security and Emergency Management
- Mississippi Department of Public Safety, Office of Homeland Security
- Missouri Department of Public Safety
- Montana Disaster and Emergency Services
- Nebraska Emergency Management Agency
- New Jersey Office of Emergency Management
- North Carolina Emergency Management
- North Dakota Department of Emergency Services
- Ohio Emergency Management Agency
- Oklahoma Office of Homeland Security
- Oregon Office of Emergency Management
- Pennsylvania Emergency Management Agency
- Rhode Island Emergency Management Agency
- South Dakota Department of Public Safety
- Tennessee Emergency Management Agency
- Utah Department of Public Safety, Division of Emergency Management
- Vermont Department of Public Safety
- Virginia Department of Emergency Management
- Washington State Emergency Management Division
- Wisconsin Emergency Management
- Wyoming Office of Homeland Security

UASI JURISDICTIONS

- Albany County, New York
- Anaheim–Santa Ana, California
- Atlanta, Georgia
- Austin, Texas
- Baltimore City, Maryland
- Boston, Massachusetts
- Central Virginia Alliance, Virginia
- Columbus, Ohio
- Cuyahoga County, Ohio
- Detroit, Michigan
- Honolulu County, Hawaii
- Jacksonville, Florida
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We would also like to thank the following organizations for partnering on the survey and using their influence to encourage states and urban areas to respond.



Finally, we would like to thank FEMA, particularly the Grant Programs Directorate, the National Preparedness Assessment Division, and the Office of Response and Recovery, for providing access to additional data sources for corroborating and complementing the survey data.

ABOUT NEMA

NEMA is the professional association of and for emergency management directors from all 50 states, eight territories, and the District of Columbia. Established in 1974, NEMA is a primary source of information, support, and expertise for emergency management professionals at all levels of government. Through regular congressional testimony, strategic partnerships, and proactive policy positions, the association provides national leadership on all emergency management issues. NEMA also administers the Emergency Management Assistance Compact (EMAC), which is the nation's interstate mutual aid system. EMAC allows states to share personnel, equipment, and resources during disaster response and recovery.

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ABOUT THE NATIONAL HOMELAND SECURITY CONSORTIUM

The National Homeland Security Consortium is a forum for public and private sector disciplines to coalesce efforts and perspectives about how best to protect America in the 21st century. The Consortium consists of 22 national organizations that represent local, state, and private professionals. The group represents the array of professions that deliver the daily services that are vital to the safety and security of the United States.

Utilizing Lessons Learned to Build Next Generation Public Policy

The goal of these sessions will be to collectively better understand policy development as it is influenced by actual events over time and, *even more importantly*, how this understanding might help the consortium and its members better engage in homeland security policy and strategy development in the future.

To enrich this portion of the agenda, small group, and plenary discussions; please review the following materials:

1. NPS/CHDS online “Timeline of Homeland Security Events and Milestones” at:
<https://www.hsdl.org/c/timeline/>

Claire Rubin’s timeline at:

<https://www2gwu.edu/~icdrm/publications/DRL04Jan28.pdf>

- Browse the timelines and use the filters to get a sense of the past, refresh your memories and think about the significance of these events in terms of what they produced or influenced after their occurrences.
 - Consider the linkages or correlations among events and the resulting policy, doctrine, strategic or major operational changes because of them individually or from multiple events. (e.g. the Emergency Management Assistance Compact followed multiple hurricane responses culminating in the response to Andrew in 1992.)
 - Be prepared to discuss your impressions and observations in small groups and plenary in Portland.
2. Attached are two supplemental readings from our presenter, Dr. Tom Birkland. While full consumption is encouraged, if your time is limited, the presenters recommend the following approach:
 - Read [Section 1](#), [Section 3.1](#), [Figure 1](#), [Section 4.2](#) and [Section 6](#). from *Disasters, Lessons Learned, and Fantasy Documents*.
 - Scan [Chapter 1 from Lessons of Disaster](#).

The ultimate objective of these discussions is to consider how we use this knowledge to influence and produce better policies in the future.

[\[RETURN TO AGENDA\]](#)

Disasters, Lessons Learned, and Fantasy Documents

Thomas A. Birkland

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This article develops a general theory of why post-disaster ‘lessons learned’ documents are often ‘fantasy documents’. The article describes the political and organizational barriers to effective learning from disasters, and builds on general theory building on learning from extreme events to explain this phenomenon. Fantasy documents are not generally about the ‘real’ causes and solutions to disasters; rather, they are generated to prove that some authoritative actor has ‘done something’ about a disaster. Because it is difficult to test whether learning happened after an extreme event, these post-disaster documents are generally ignored after they are published.

1. Introduction

A staple of crisis management and emergency response is the post-response report, often known as an ‘after action’ report or a ‘lessons learned’ document. Many of these reports are the routine product of organizational self-evaluation and are primarily concerned with operational or ‘tactical’ matters. Indeed, this sort of learning is known to organizational theorists as ‘single-loop learning’ (Argyris & Schön, 1996), which has very important implications for crisis management (see Moynihan’s and Deverell’s papers in this symposium). But I am more concerned with the second loop, as it were, of ‘double-loop learning’, which involves learning about the fundamental assumptions behind policy design at the strategic level. Here, the claims of ‘lessons’ and ‘learning’ have significant implications for the supposed lesson learners and the broader policy system.

Because social and political pressures to create such lessons learned reports are the greatest in the immediate aftermath of the event, while the event’s status on the agenda is freshest, a great deal of attention is paid to ensuring that lessons really are learned, so that the worst effects of the next disaster can be avoided.

These pressures also mean that lessons learned reports are usually very quickly generated. It is difficult to claim that any actual *learning* occurred because

insufficient time has elapsed between the event, the creation of the report, and any subsequent tests of the ‘lessons’. Instead, these documents really focus on ‘lessons observed’ or, more simply, the observations that officials and experts made about the preparations before and responses to the crisis or disaster. Moreover, most of the time, these reports are narrow-bore efforts to derive meaning for a particular constituency; in the disaster field, these groups include first responders, communications experts, and public health officials. There are few comprehensive efforts to learn broader strategic lessons about the events based in sound science; this is consistent with the idea that single-loop learning is more common than double-loop learning.

In this article, I borrow concepts and terminology from Lee Clarke, who coined the term ‘fantasy documents’ (Clarke, 1999). I call many lessons learned documents ‘fantasy learning documents’ for the same reason that Clarke terms many pre-disaster plans ‘fantasy documents’: because they are created and disseminated for rhetorical purposes, even if their authors somehow *believe* that learning has really occurred.

To begin, I review the theories of focusing events and outline a theory of learning from focusing events. I then develop a general theory of why post-disaster lessons learned documents are fantasy documents. This is not true in all cases, of course, but the general trend is towards producing such documents to prove that some

authoritative actor has 'learned its lessons' about a disaster and that, given this learning, will not replicate its errors.

2. Overview and definitions

John Kingdon (1995) uses the term 'focusing event' in his study of agenda setting and alternative selection to describe a class of political phenomena that can cause an issue to gain attention in the media and among various institutions. In my work (Birkland, 1997, 1998, 2006), I further defined focusing events as events that are sudden, that are known to policy makers and elites simultaneously, that affect a community or a community of interest, and that do actual harm, or that suggest the possibility of greater future harm. My definition of the term 'focusing event' is influenced by Cobb and Elder's (1983) work on agenda setting, in which they call phenomena like focusing events 'circumstantial reactors', and Baumgartner and Jones's (1993) work on the 'punctuated equilibrium' model of the policy process, in which public policies remain rather stable until something upsets the system's equilibrium, yielding change. All of these works acknowledge that sudden events are important examples of agenda drivers, but do not go further than that. My work sought to sharpen the idea of focusing events¹ and in showing how focusing events do not influence all policy domains in the same way. On the other hand, my definition of focusing events is rather more restrictive than Kingdon's; this definitional difference will not be resolved here, but it is important to acknowledge.

Focusing events, by elevating issues on the agenda, can, says Kingdon, open a 'window of opportunity' for policy change. This window of opportunity can yield immediate policy change, improved understanding of the social or the natural forces that lead to a disaster, or can be an opportunity for a variety of actors to learn how better to argue for their policy or political interests. Of course, these outcomes are not mutually exclusive, and this knowledge can be accumulated and applied after later focusing events or other change opportunities. Peter May (1992) defines these three types of learning as instrumental policy learning, social policy learning, and political learning. Instrumental policy learning involves learning about the effectiveness of various policy tools applied to problems. Social policy learning relates to learning about the social construction of problems and the interaction of policies with the targets of policies. Political learning involves learning about the effectiveness of rhetorical appeals for policy change, and involves political strategies and tactics at the ideological level, rather than the specifics of public policies. This paper will be mostly concerned with social and policy learning, although politics and political learning are undeniably important.

Natural disasters, industrial accidents, and acts of terrorism – what are together called 'extreme events' – constitute one type of focusing event that can have local and distant social and political effects. hurricane Katrina was a local event for the Gulf Coast, while the distant impacts of a focusing event are illustrated by the significant loss of life in Thailand in the 2004 tsunami. This disaster killed and injured a great many Swedes on holiday, the governmental response to which had significant consequences for Swedish politics (Naik et al., 2005; Strömbäck & Nord, 2006; Widfeldt, 2007).

Because these events are undesirable, humans and their institutions are presumably interested in mitigating them or preventing their damages from happening in the first place. For example, the Air Accidents Investigation Branch in the United Kingdom, and its counterpart in the United States, the National Transportation Safety Board, exists to collect a vast amount of information on aviation incidents, ranging from minor mishaps to catastrophic accidents. The catastrophes are the more focal events, but from nearly every major aviation accident we have learned about the causes and 'cures' for aviation accidents (Perrow, 1999), such that aviation safety has made remarkable gains (Cobb & Primo, 2003).

Because learning from disasters is usually the result of some sort of intensive investigational and study activity, learning should not be seen as an outcome or a goal of the process, but should be considered an ongoing activity within the policy process. George Busenberg defines the learning process as 'a process in which individuals apply new information and ideas to policy decisions' (2001). I accept this definition and suggest that focusing events can provide that new information, although in a relatively raw form. For example, the risk of a catastrophic terrorist attack on the United States was no greater on 12 September 2001 than it was on 10 September, but the September 11 attacks caused the public and elites to be much more *attentive* to the terrorism problem. The focusing event brings information to the attention of a broader range of people than normally consider the issues.

However, my definition extends somewhat on Busenberg's by focusing more on the outcome of learning than on the process – that is to say, I seek evidence of some sort of *change* as a result of the new information, while Busenberg's definition only requires the application of new information, regardless of the policy decision. Policy learning can be identified if there is *prima facie* evidence of policy changes that are reasonably linked to the causal factors that connected the event under consideration to its harms, and if addressing these factors would be likely to mitigate the problem (Birkland, 2006). For example, we can say that policy learning has occurred in the United States after September 11 through a regulatory requirement that cockpit doors be kept closed and securely locked

during flight (Airline Industry Information, 2001; World Airline News, 2001). The new requirement is therefore clearly a response to the insecurity of cockpits pre-September 11. However, it is also true that cockpit intrusions were nothing new, and we can speak of the *failure* to learn from less catastrophic, but still worrisome, episodes of deranged passengers seeking to enter the flight deck (Air Safety Week, 2000; Richfield, 2000). This is an example of double-loop learning because a small but fundamental *policy* change occurred that transcended the usual regulatory adjustments that characterized single-loop learning.

However, what looks like policy learning – that is, a change after some sort of external shock – may not be learning at all, for at least two reasons; first, the ‘lessons’ that may be ‘learned’ after an event may not be related to the event at all, but, rather, the lessons had already been ‘observed’ several times before the event. That existing knowledge was either not taken up by those who could have acted, or the knowledge was available, but policy makers and implementers simply chose not to act on that new knowledge. Examples of this include the significant evidence of security problems in civil aviation well before September 11; it took September 11 to drive these ideas forward on the agenda. This is entirely consistent with Kingdon’s idea that focusing events open the window of opportunity for the joining of problems with pre-existing solutions, such as better checkpoint screening, cockpit security, and the like (Cobb & Primo, 2003; Birkland, 2004, 2006, Chapter 3). Indeed, the oft-stated lament that ‘it takes a disaster to change anything’ is entirely consistent with agenda setting and focusing event theory in a wide range of fields, from the ongoing financial crisis to industrial accidents and natural disasters. Moreover, at least intuitively, we know that ‘big’ events are more likely to yield policy change than are ‘small’ events.

Second, some policy learning is ‘superstitious’ learning, which either attempts to use ‘lesson drawing’ from other places or times, regardless of whether the comparison is apt (Neustadt & May, 1986), or when, in the urge to ‘do something’, policies are adopted that have little or nothing to do with the problem at hand. For example, after the Columbine school shootings near Denver, Colorado, in 1999, some policy makers sought to more closely regulate video games and popular music, which were said, absent sound scientific information, to cause the sorts of behaviours that led to this disaster (Haider-Markel & Joslyn, 2001; Lawrence & Birkland, 2004; Larkin, 2007). While no real social policy or political learning occurred in this incident, there was considerable evidence of *political* learning, in which all manner of arguments – about popular culture, the availability of guns, the lack of mental health services, and so on – were honed and deployed in a battle of ideas that, ultimately, generated more heat than light.

3. Why are disasters change and learning opportunities?

Disasters are change and learning opportunities because they provide an opportunity for close analysis of the things that happened before the disaster, during the acute phase of the disaster, and in the recovery period. The opportunities for learning and change come because these are extreme events, and therefore gain the attention that routine events do not. These events gain a great deal of media attention and, therefore, public attention. If nothing else, decision makers assume that what is on the media agenda is also high on the public’s agenda as well. With public attention comes pressure to do something about the event. What that ‘something’ might be is often very murky, because focusing events not only raise an issue on the agenda; they also elevate the manifold constructions of the issue on the agenda. Only those constructions that somehow resonate with the public or elites are elevated, even if these constructions are, in the causal sense, wrong (Hilgartner & Bosk, 1988; Lawrence & Birkland, 2004). Thus, after September 11, there were many ‘new’ problems to be addressed: border and immigration control, flight training, airline security, illicit money transfers, emergency pre-paredness, seaport security, law enforcement, and so on. Many of these issues were opportunistically advanced on the agenda by interests who had sought policy change for years; in other words, the event did not provide new information, but provided new ways of framing an existing set of policies to achieve a set of goals (in particular, the advancement of the political right’s law enforcement agenda). September 11 was an opportunity to tie their issue to the new world of ‘homeland security’.

But it is at the ‘do something’ juncture that the opportunity to learn is manifest, but, given the haste of the decisions made in the wake of these events, the risk of superstitious learning – that is, learning without some sort of attempt to analyse the underlying problem – is greatest. In some cases, pressure to act is so strong that action is taken immediately, as was the case of the enactment of the USA Patriot Act in 2001. This event broke the pattern in the United States in which most legislation and regulatory change followed some sort of investigative or ‘after action’ report (Rubin et al., 2003). The quick – or hasty – reaction to the September 11 attacks provides considerable evidence of learning, or of political opportunism, as with the enactment of rather stringent changes to criminal law enacted in the Patriot Act but that have been more often used in run-of-the-mill criminal cases than in prosecutions of terrorism.

This notion of political opportunism is not meant to be cynical. Rather, it is a reflection of how ideas come to the fore in both Cohen, March, and Olsen’s (1972) ‘garbage can’ model of organizational decision making, as extended to the policy process in Kingdon’s ‘streams’

metaphor. After all, all groups have an 'agenda', which, in American politics, at least, has come to sound like something sinister ('the liberal agenda', 'the right-wing agenda') but that really means the pre-existing goals that groups seek to pursue. Clearly, if it is more economical, in terms of political capital and the generation of public interest, to use an event as a way to advance a group's agenda, they will do so, such as when environmental groups were able to use the *Exxon Valdez* oil spill to advance claims that further development of oil resources in Alaska would be environmentally damaging (Birkland, 1997, Chapter 4).

Another type of reaction is one through which some sort of learning (sometimes called 'assessment' or 'evaluation') process is begun, either within or outside an agency, to assess what went well after an event, what did not go well, and what should be improved in the future. Such efforts, if done well, are designed to understand the social, technological, and engineering reasons for major failures that lead to disasters, such as the multiple investigations of the levee failures during hurricane Katrina conducted by expert investigators. Others, who may not be as familiar with the response as the experts, will develop 'lessons learned' documents that focus on particular aspects of their concern that are based on secondary sources, and that use the event as an exemplar. For example, publications aimed at information technologists will use an event to highlight lessons learned about the physical security of computers, servers, and related infrastructure, even though these 'lessons' were well known before the event in question, and there is little reason to believe that *action* as a result of these efforts will be greater after the report than before. Indeed, we might call all these lessons learned documents 'lessons observed'.

This is often well known to the participants in these efforts, which is part of the investigatory process. Leaders of investigative bodies pledge that *their* report will not join a series of reports that 'sit on a shelf and collect dust'. Rather, their investigations will yield tangible improvements in the way of policy and practical change. Indeed, some members of the September 11 commission created the nongovernmental Public Discourse Project as a way to keep the recommendations alive and in front of public officials, although this group was disbanded at the end of 2005.

3.1. Potential patterns of 'lessons learned' processes

There appear to be five broad patterns of 'lessons learned' processes and documents:

- An event happens, and then change happens with little or no effort devoted to learning from the

event. A major example is the USA Patriot Act, which was enacted very soon after the September 11 attacks, without any real effort expended to see whether the policy tools contained in that act would really be the most effective in preventing terrorist attacks.

- An event happens, and an investigation is undertaken that is agency serving, is incomplete, or states the obvious, without any evidence of a serious attempt to learn. An example is the Executive Office of the President's *Lessons Learned from Katrina*, the point of which is as much rhetoric as it is real learning. Such reports simply hope to, in Schattschneider's (1975) terms, contain the scope of conflict by creating the appearance of learning or reform. Of course, there may well be some real learning reflected in such reports, but their primary function, ultimately, is public reassurance, not internal evaluation.
- An event happens, and an investigation is initiated, which leads to policy change, but that policy change cannot be linked to the investigation, or policy changes without reference to the changes recommended in the post-event investigation. For example, there were many different attempts to investigate September 11, but it is not clear whether the creation of the Department of Homeland Security was a direct outcome of these investigations, particularly given the thin evidence that such an agency was really necessary (Tierney, 2005). Indeed, DHS was created 2 days before the major investigation – popularly known as the September 11 commission – was established. Its final report was submitted in September 2004.
- An event happens, and a thorough and careful investigation is initiated, but policy change does not result. This may be because of cost, bureaucratic delay, political opposition, or any of the usual reasons for political and policy stasis. For example, the fruits of many NTSB investigations of airplane crashes, including precursors to ValuJet 592, were largely ignored for years by the Federal Aviation Administration (Schiavo, 1997). The same is true for aviation security problems before September 11, where FAA moved very slowly in the face of what was considered to be a growing threat (Birkland, 2004). However, we might still find the learning process to be functional if the crisis was so anomalous that no intervention could improve policy performance, such as the unforeseen 'freak accident', or if the remedy for the problem would create more problems than the original problem itself. For example, we know that some number of people may be trapped in cars by seat belts in accidents, and may perish in a fire if the car catches fire. We also know that some very small fraction of

people who are vaccinated against diseases may react badly to the vaccine, resulting in illness or death. But we do not generally contemplate removing seat belts or halting vaccinations because the broader social good these things do far outweighs the small potential harms (while acknowledging, of course, that the harms to those few injured individuals are not small).

- An event happens, and a thorough and careful investigation is initiated, which leads to policy change as a result of careful investigation, assessment, and policy design. An example is the Columbia Accident Investigation Board, which probed the 2003 space shuttle accident. There were changes at NASA as a result of this report, including a much closer inspection of heat shields and, in particular, of potential damage to wings from falling foam debris from the external fuel tank. However, one must not make too much of 'successful' learning, because these lessons can decay over time, as they did between the loss of *Challenger* and *Columbia*. On the other hand, the second shuttle accident has led to fundamental rethinking about spaceship design, with new craft being simplified and designed to put the crew far forward of the dangerous fuel tanks; this focus on safety and survivability is a function of double-loop learning. However, many careful investigations yield single-loop learning that does yield operational and regulatory change without being elevated to the legislative level. An example is the NTSB's and the FAA's investigation of a series of rudder deflection incidents that included the crash of US Airways flight 427 near Pittsburgh in 1994. This investigation ultimately led to the discovery and remedy of a design flaw with the mechanism that controlled the Boeing 737-300 rudder (see <http://www.nts.gov/events/usair427/items.htm>). Indeed, the NTSB's work on aviation accidents is considered a model of learning from thousands of minor to major incidents that accumulate into a vast body of operational knowledge (Perrow, 1999).

The first four of these examples falls into a class I call 'fantasy learning' that generates 'fantasy lessons learned documents', although the fourth example might be more a function of bureaucratic delay rather than of rhetoric. Only one of these scenarios – the fifth – is an example of sound instrumental learning. While this sort of rational, experience-, and evidence-based learning is considered by the public and many actors to be a desirable outcome of such events, and describes what we might consider the classical model of learning, this sort of learning is rare. There are many reasons, then, for the production of fantasy lessons learned documents:

4. A model of event-related policy change

The logic model in Figure 1 depicts the ideal process of *event-related learning*, which can be used to test the patterns of lessons learned processes. In this model, if certain actions occur at points after a focusing event occurs, learning becomes more likely, and policy change as a result of this learning becomes more likely. This model also suggests that after an event, it is possible for learning without policy change to occur after one event, or for policy change to result from mimicking or 'superstitious' learning. This learning is the result of pressure to 'do something' after an event, and where issuing a 'lessons learned' document is taken to be evidence of at least the beginning of an effort to tackle the failures revealed by the event. Finally, the model acknowledges that not every event will lead to policy change, but that events may contribute to a base of experience that may promote learning from subsequent events as knowledge accumulates, as noted in the feedback arrow. In other words, not all events do involve explicit acknowledgement of lesson learning.

In this model, I operationalize learning in this way: first, I adopt Busenberg's process-based definition but stipulate that focusing events, consistent with Kingdon's streams metaphor, and Cohen March and Olsen's 'garbage can' (Cohen et al., 1972) model, on which Kingdon relies, that definition of learning as 'a process in which individuals apply new information and ideas to policy decisions'. However, I modify this definition slightly to define learning as a process in which individuals apply combined new information that may be revealed by a disaster with and ideas, or *new and preexisting information and ideas elevated on the agenda by a recent event*, to actual *policy change*, policy decisions. This redefinition takes into account two factors: the ebb and flow of ideas on the agenda and the accumulation of ideas over time, even as those ideas are not uniformly translated into policy.

I do not claim to be able to measure 'learning' at the individual level based on behavioural or cognitive science. Rather, I focus on the apparent *lessons* of these events, and ask whether it appears that the clear lessons of these events have been learned, as reflected in the policy-making process. In particular, we can say that *there is prima facie evidence of learning if policy changes in a way that is reasonably likely to mitigate the problem revealed by the focusing event*. This operationalization of learning cedes a great deal of judgement to the researcher making the claim of learning. This is why clear criteria and coding frames are necessary to any detailed study of learning.

4.1. Drivers of the learning process

What is the motive force that advances the learning process? I identify three drivers of this process, all of

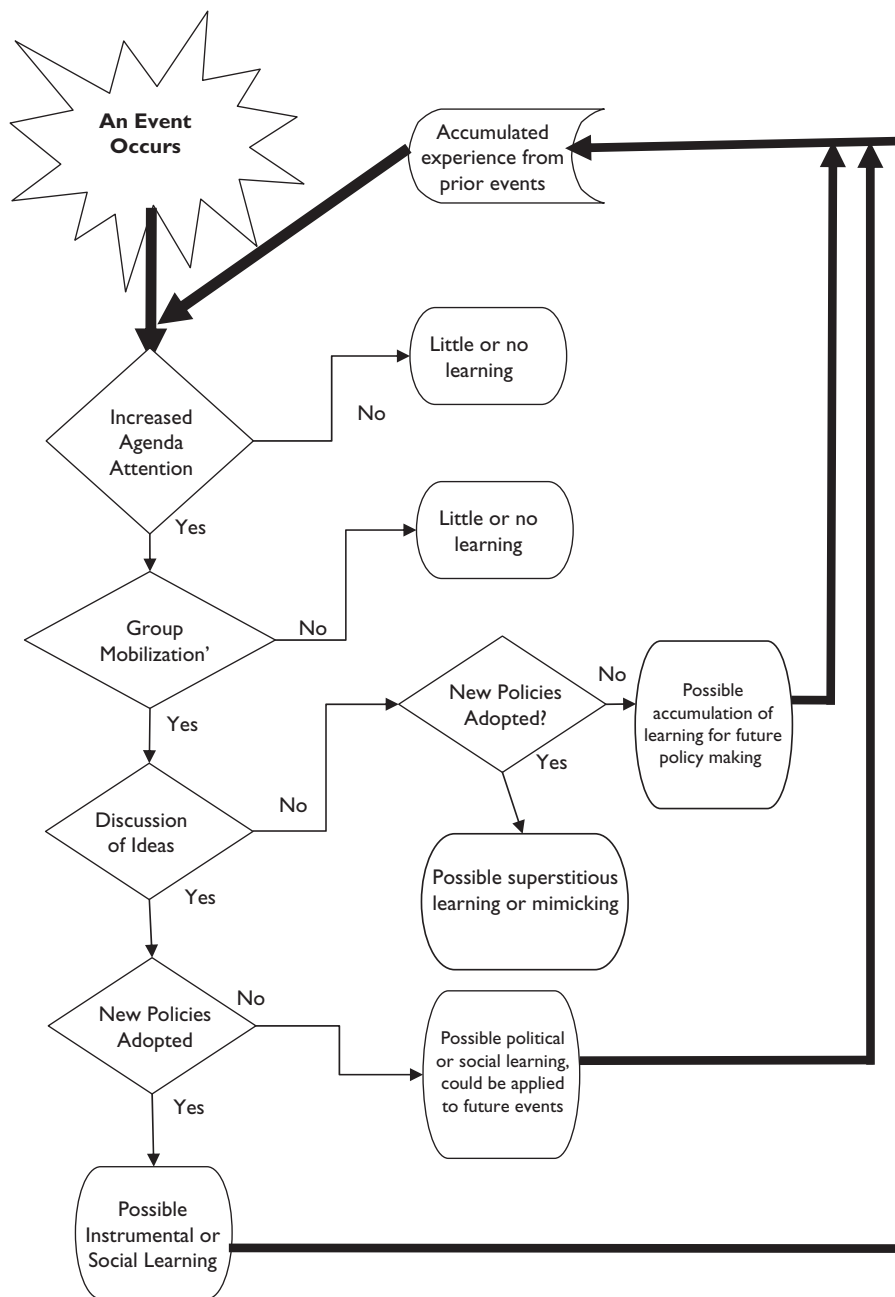


Figure 1. A Model of Event-Related Policy Learning.

which can either promote learning or lead to dysfunctional learning. The first driver is the desire to learn, quickly, why a bad thing happened so as to prevent its recurrence. These pressures create hasty attempts to learn from events, which can induce pre-mature attribution of causes, such as the early claims by Jack Kallstrom, the FBI's New York bureau chief, that TWA flight 800 was brought down by a bomb in 1996; it turned out that a careful analysis found that the plane exploded due to an abundance of explosive vapours in a fuel tank. The news media are notoriously prone to both warning against speculation and then speculating

about the causes of airplane crashes, sometimes in the same story.

Self-interest is not simply about attempting to inoculate an agency or a group against criticism. The mirror image of the self-promoting 'lessons learned' process is a wildly critical effort that seeks to find fault with everything that everyone did in an event. Few reports are this critical, but the legislative branch is often tempted, for partisan or institutional reasons, to focus on failures and ignore successes. Sometimes, these failures are overstated or personalized, as in Congress's grilling of former FEMA director Michael Brown after

hurricane Katrina, which attempted to attribute many of the problems encountered in hurricane Katrina to one person's purported incompetence, not to systemic failures.

On the other hand, the political and time pressure created by a crisis may create a sense of purpose and urgency that would not otherwise exist without the crisis having happened. The investigations of the losses of space shuttles *Challenger* and *Columbia* were driven by the very fact that they led to loss of life (and, less publicly, by the significant costs of losing these spacecraft). Urgency can therefore be a productive or a distorting force.

A second driver of the learning process is individuals' or groups' self-interest. The choice to call a document a 'lessons learned' document can be strategic and rhetorical, and is revealed by the policy prescriptions to which the report leads. For example, the American Highway Users Alliance commissioned a study (American Highway Users Alliance, 2006) to demonstrate the 'need' for better evacuation planning using private automobiles and over the road buses to allow entire cities to evacuate because of what was 'learned' about the 'failed evacuation' of New Orleans. While this study was triggered by hurricane Katrina, this study was based almost entirely on industry self-interest, was methodologically deficient, and failed to take into account the largely successful evacuation of New Orleans and its environs (Roig-Franzia & Hsu, 2005; Wolshon et al., 2006; Derthick, 2007). The report's credibility was further undermined by its authorship by a consultant with a strong pro-automobile, anti-transit, and anti-planning bias.

A third driver is the human tendency, under bounded rationality, to attempt to find simple or monocausal explanations for very complex social and political phenomena. Focusing on one or a few aspects of a disaster will not often get to the heart of the problem. For example, the concentration of attention on New Orleanians' choices to live in the parts of the city resting below sea level seemed to create a causal story that focused on the 'poor decisions' of the people who live there, which is another version of 'operator error' rather than of systemic error. The implicit lesson is that people should be discouraged from living in vulnerable areas, but this construction of vulnerability fails to account for a wide range of things that create vulnerability. These include complex socioeconomic and demographic factors, the political economy of the region, the physical landform, the roles of other actors (the Orleans Parish Levee Board, the Corps of Engineers, the city and state governments), and so on (Cooper & Block, 2006). The blaming of individuals for the failure, such as the aforementioned criticisms of Michael Brown, is yet another example of monocausal attribution, as are 'operator error' causes in complex systems accidents, such as aircraft or nuclear power (Perrow, 1999).

4.2. Propositions about event-driven learning

The goal of the logic model is to generate propositions about after disaster learning. These propositions also suggest the data needed to understand the phenomenon of interest. I do not claim that these are hypotheses, because further model development and theory building is required. But I advance these as guidance for future research.

The first proposition is that *a few events will gain the most attention*. The distribution of damage and deaths in disasters and accidents is not statistically normal; rather, the distribution has a long 'tail', where a large number of relatively small events garner little attention, and a few events gain a great deal of attention. For example, many tropical storms or hurricanes that can strike the nation during the hurricane season, but only the very few largest storms, on the scale of hurricanes Katrina or Andrew, receive the most attention and can have the greatest influence on learning. Smaller incidents do not gain attention because they place less strain on existing organizations and policies; in other words, they are 'routine' disasters to organizations designed to respond to such events. Hurricane Katrina receive more attention than did all four of the hurricanes that struck Florida in 2004 because the response to the Florida hurricanes was generally perceived as adequate, and because no individual storm was catastrophic, while Katrina was a catastrophe that overwhelmed the national emergency management system. The disaster-catastrophe distinction is important, because we can think of a disaster as affecting a relatively small area whose emergency response may be strained, but not overwhelmed, while a catastrophe entirely overwhelms the ability of a community or its region to respond (Quarantelli, 2005), as was evident in hurricane Katrina. This distinction is important because it reflects the greater scale of the catastrophe. In English, this distinction is much more pronounced than in, for example, French, where *catastrophe naturelle* usually translates to 'natural disaster' in English.

The second proposition is that most, if not all, participants in a policy domain want to address or solve the problems revealed by a focusing event, but that the proposed solutions will likely vary with the interests and motivations of the various participants. This reflects the idea that nearly all participants in a domain are goal oriented (Jones, 2001). No legitimate actor in any policy domain wants to see planes hijacked or people displaced due to natural disasters. But the policy instruments with which problems will be prevented or mitigated will differ from participant to participant in the policy process, because the depiction of how problems come to be, and therefore solved, will be different based on each participant's ideological and organizational commitments.

The third proposition, related to the second, is that *group mobilization is linked in time to a particular focusing event*. In particular, the activities of groups – or the representatives of such groups – will become more evident in news accounts of the crisis or disaster as it unfolds. In congressional hearings (or parliamentary inquiries), particular groups' representatives will be heard from more often.

The fourth proposition is that *group mobilization will be accompanied by an increased discussion of policy ideas*. These will include theories about the causes and potential solutions of the problem, and, as such, are primarily social and instrumental policy learning matters. I assume, therefore, that events drive group mobilization, which drives the discussion of policy ideas, again consistent with the 'garbage can' model of decision making (Cohen et al., 1972). Evidence of political learning may also exist, but such evidence may be less apparent, given that this learning happens internally within organizations in the policy domain or advocacy coalitions. In any case, policy learning is much less likely without the mobilization of tangible ideas, and ideas are unlikely to come to the fore without some sort of group mobilization.

Thus, the fifth proposition is that *there is a relationship between ideas and policy change*. In particular, change is more likely when there are ideas triggered because of events, compared with when there are no ideas generated by an event or elevated to a higher position on the agenda. Policy change can occur without ideas, but we can assume that such policy change does not happen because of careful debate of ideas and therefore does not result from learning; instead, it is mimicking or copying without learning (May, 1992). Table 1 shows the types of evidence one would use to illustrate learning as conceptualized in these propositions.

The sixth proposition is that *it is possible for the lessons learned to decay over time*. While policy change may result from an event, the time that intervenes between one focusing event and another, and the demands placed on policy makers in that intervening period, may cause participants in the policy process to 'forget' the lessons that they learned. The effect of hurricane Katrina, and the fumbled federal, state, and local response to the event, suggested that the putative lessons of hurricane Andrew were not fully learned, forgotten over time, or were influenced by the interaction between the natural hazards and the 'homeland security' domains. Kingdon calls these interactions between policy domains 'spillovers', and such spillovers can theoretically reinforce learning, or can retard it. The focus on homeland security had a corrosive influence on the nation's pre-paredness for natural disasters (Tierney, 2005). None of this is to suggest a normative claim that lessons should not decay over time; rather, it is to acknowledge that any lesson will necessarily decay unless it is fully institutionalized into

Table 1. Typical Evidence of Learning in the Policy Process

Organization or institution	Evidence of learning
News media	Stories about the problem Changes in the nature of news coverage (people quoted, substance of news coverage).
Interest groups	Change in appearances at congressional hearings. Increased attention from news media (generated by the group).
Congress	Legislative change. Change in the substance of debate. Change in the topic areas of hearings.
Regulatory and implementing agencies	Issuance of new and proposed regulations. Change in the nature and substance of the regulations being issued. Change in procedures and in the interpretation and implementation of statutes and regulations.

the law, from legislation through regulation to the standard operating procedures of regulations.

5. Interim observations on the model and propositions

This article started with the idea of the lessons learned document as a 'fantasy document'. The paper then proceeded to explain a model of crisis-spurred policy learning, including its main drivers and key propositions that derive from the model. Clearly, the entire concept of 'fantasy learning' is broader than the actual document itself. Rather, I describe a process where the production of a document is a final or even an interim step along a much longer timeline, where the document might signal the end of a period of significant reflection, or may mark the beginning of further controversy over what was claimed to have been learned. I focus on the document as a key feature of the analysis because the thinking that often goes into such documents reflects both the functional and the dysfunctional features of the learning process I outline here. The functional features include improved policy that yields improved performance; the dysfunctional features involve features that impede learning, or that would, for whatever reason, prevent what was learned from being put into practice.

Of course, by contrasting 'functional' and 'dysfunctional' aspects of learning, I appear to adopt a functionalist perspective on the entire policy process. But scholars of public policy have long known that most policy problems are socially constructed and are embedded in long-standing ideas, norms, and practices. Framing of problems and their solutions is a key part of this process. It is important to acknowledge that the learning described in this article is about lessons that may already be well known, or that were 'learned

before' but that become dormant between events, and the very nature of the lesson-learning process will depend on how the original policy failure – the problem itself – is framed. Considerable contention can result when there are different interpretations of the problem, because these different interpretations and claims will greatly influence the claims about what the 'lessons' should be. In such an environment, even the claim of 'fantasy' learning is contested, because, after all, who is to say that the learning process is 'real' vs. 'fantastic'? This paper suggests, however, that there are important distinctions between learning that is functional in the sense that it yields policy change and improvement, and dysfunctional 'fantasy' learning that may be driven by poor causal theory or by narrow self-interest.

In working through this model of policy learning, and accounting for the special conditions of learning from crises and disasters, there are important avenues for future research and for refining this model. After all, it is a tall order to expect that a policy network will experience a disaster, will take the necessary steps to learn from it, and then will put those lessons into effect.

The first issue deserving of attention is the combined question of time pressures and the overwhelming publicity that surrounds crises and disasters. Indeed, the most relevant feature of large disasters is that they are so huge that their harmful nature is immediately clear to all in the disaster area, and to those who learn of the disaster through the news. Containing the scope and scale of the disaster is the main goal of decision makers during a crisis, but they must work very quickly to achieve this end. They do not have a great deal of time to be reflective and, instead, must often improvise to find good interim solutions to problems that were unanticipated, or to problems that cannot be ameliorated through standard operating procedures in routine times, or even routine emergencies such as a small chemical spill or a relatively minor hurricane.

The second issue is the question of single- vs. double-loop learning. Single-loop learning is generally learning about tactics or operations, and is therefore not a key feature of my model of the policy learning process. I am more concerned with broader strategic learning about the usefulness and appropriateness of policy tools. These policy tools are presumed to have failed in a crisis, and the crisis is, therefore, an opportunity to learn and to improve our knowledge of problem solving at the instrumental level (the policy tool) or at the social level, involving better understandings of cause and effect relationships, rhetoric, or the tractability of public problems. But the line between the types of learning is blurry, at best. Learning about policy tools, even at the legislative level, certainly invokes operational issues. The learning I am most interested in this paper therefore suggests some sort of fundamental rethinking about policy besides its operational aspects.

This is why I put the 'fantasy document' at the start of my investigation of learning in this article; such documents are the end point of an ongoing process. But the real point is less the document than it is the process that yielded the ultimate document. We might therefore wish to test the process from its outset, by asking whether the process was an 'honest' attempt to learn, or whether the process was a public relations activity or a 'whitewash' intended to burnish the image of an organization, or to absolve it of responsibilities for failures. One might approach this question by finding out whose office was ultimately responsible for compiling and disseminating any 'lessons learned'. If we learn that the public relations staff developed such reports, one might approach the entire process much more sceptically than if one knew that the report was created by a serious internal effort, and external review body, or some combination of the two.

Indeed, this points out a flaw in the idea that there is 'one' lessons learned document. Future research should look into the range of 'lessons' documents that are produced after a crisis or a disaster. These include anything from changes to standard operating procedures to major statutory changes, as well as internal reports and analyses. There may be some divergence between the public face of an organization and its private deliberations, particularly under conditions of extreme attention and time pressure.

6. Conclusion

To call a 'lessons learned' document a fantasy document is to call the entire process by which the document was created a fantasy exercise. This is not true, of course, in all cases – there have been many earnest efforts to improve performance after a crisis or a disaster, and some – but by no means all – of these efforts have improved performance. But, in many cases, when viewed from a political perspective, learning processes are often not 'serious' in the sense that they are intended to extract lessons from experience and apply them to current and future problems. Instead, many of these documents and the processes that create them are mere reflections of a group's or interest's preferred social construction of a problem and its 'target populations'. Often, these groups will resist serious lesson-learning processes by either resisting the creation of such investigations, or will, once the investigation is complete, deny the lessons on cost, feasibility, or other grounds, or will simply ignore them. For these reasons, learning is not as common as one might think, even if the participants in these processes sincerely believe that the process in which they are engaged is intended to learn something. Many of these participants learn that they have to communicate *ex cathedra* if their ideas

are to gain attention in future policy debates. More often, these processes simply result in reports that fail to address the real problems revealed by an event or a series of events. The challenge for democracies is to create the sort of public pressure necessary to make learning processes more realistic and responsive to the problems and to the needs of the organizations, communities, regions, and nations in which these events occur. Because many political systems contain features that prevent rather than promote policy change, such learning efforts are doubly challenged, and a great deal of energy is necessary to overcome systemic inertia. But, in some cases, learning can exist, and we can 'learn' from these processes how to structure organizations and policy systems that bring serious learning to the fore.

Note

1. In sharpening the definition, I acknowledge that I also narrowed the definition substantially, thereby ignoring the influence of personal experience among decision makers, among other factors, as type of focusing events. There is likely some sort of typology of focusing events, which is beyond the scope of this paper.

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own understanding of the September 11 disaster, which touched many of them deeply. My goal in the course was to collect data on media coverage and legislation after September 11 and to test some hypotheses about how the media cover disasters of this magnitude. This way, students would learn more about the event and how social scientists study and help make sense of such events, both for themselves and for society as a whole. In many ways the sheer volume of the data—and the daily changes in politics and policy in early 2002—made this more an exercise in data collection than a project of generating and testing hypotheses, but my students learned a great deal about the vagaries of empirical research, and I learned a lot about my students. I am very grateful to them.

Three students in particular—Lisa Ferretti, Kathie Legg, and Jesse Matthewson—continued as research assistants after the class ended, aiding in collecting data for this and related projects on event-driven media coverage and policymaking. Paul Alexander, in my college's political science program, and Michael Deegan, in our Public Administration and Policy Department, were also important in gathering the evidence presented here. Deneen Hamaker, a doctoral student in public administration, and Sara Anderson, a colleague at Albany, carefully read and commented on the manuscript. So when I use "we" in the book, it is with these outstanding students and their collective efforts in mind. Of course, all the lapses in logic and exposition are mine alone.

It is also important to acknowledge that the National Science Foundation, under award number 9732233 on "Determinants of State-Level Disaster Policy Change, Improvement, and Learning," supported the preliminary research that led to chapter 4.

Finally, as I was writing this book, my wife, Molly, and I experienced our own major events with the birth of our sons, Oskar and Isaak. Molly remains one of my best editors and collaborators, and not just of my academic work. The love and patience of my family sustained me as I wrote this book, and it is to my sons in particular that I dedicate this work, for I hope that our generation can learn from its mistakes and profit from its successes before we pass this world on to them.

From Birkland, Thomas A. 2006. *Lessons of Disaster*. Washington, D.C.: Georgetown University Press.

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theories and models of policy change and learning

This book is about the dynamics of policy change after sudden events known as focusing events. These sudden events include accidents, natural disasters, and deliberately caused catastrophes, such as terrorist attacks. The term *focusing event* entered widespread use among students of the agenda-setting phase of public policy in John Kingdon's seminal book, *Agendas, Alternatives, and Public Policies*, first published in 1984. In *After Disaster* (Birkland 1997a), I applied the idea of focusing events to disasters and accidents and found that disasters and accidents do indeed cause a discernible increase in the attention paid to a policy problem. This may seem obvious; it is intuitively sensible that people do not pay much attention to earthquakes or terrorist attacks until one actually happens. What was interesting about *After Disaster* was not merely the finding that disasters influence the agenda but the discovery that there is an interaction between the event, the nature of the event (human versus natural, for example), and the composition of the community of actors who address the policy issues or problems revealed by the disaster. In this interaction we can find rather different agenda-setting politics, ranging from the domain of hurricane policy, in which there are very few organized interests available to use the occurrence of a hurricane to effect

changes in hurricane policy, to the domain of nuclear power, which is so polarized that even a focusing event does not necessarily yield much movement in the positions of the contending parties.

This book expands on *After Disaster* by considering whether and to what extent policy change—not just agenda change—follows a disaster. I examine four policy domains: homeland security, aviation security, earthquakes, and hurricanes. The complexities and subtleties of the agenda-setting process that accompany focusing events are extended, if not magnified, by the process that determines whether policy will or should change after disasters. Whereas it is easy to give examples of policy change that accompanied and were seemingly caused by disasters, the processes of policy change are often subtle and complex, when change happens at all. One of the sources of complexity is the choice of theoretical framework for explaining change. In this book I explain how we can understand policy change as the result of learning processes in the policy process. I call policy change that can be plausibly linked to a particular event *event-related policy change*.

In *After Disaster* I defined a potential focusing event as “an event that is sudden, relatively rare, can be reasonably defined as harmful or revealing the possibility of greater potential future harms, inflicts harms or suggests potential harms that are or could be concentrated on a definable geographical or community of interest, and that is known to policymakers and the public virtually simultaneously” (Birkland 1997a). I defined *potential* focusing events in this way because there can be many events in a policy domain that do not become focusing events. An earthquake in a distant location may be an event in the seismological sense, and it may well be a harbinger of worse things to come in another locale, but an earthquake in the Aleutians will not have the same focal power for Americans that an earthquake in Los Angeles or Seattle will. Similarly, a hurricane that fails to strike populated areas is still a hurricane in the meteorological sense, but it is not a hurricane worth noting in human history.¹

Crises, disasters, and catastrophes are three types of focusing events, as outlined in figure 1.1. In this book I adopt the distinction between crisis and disaster from Faulkner, who argues that crises are sometimes “induced by the actions or inactions of an

organization,” while disasters result from “induced natural phenomena or external human action” to which government or organizations can simply respond (Faulkner 2001, 137). Such responses range from immediate relief and recovery to efforts to mitigate the hazard should a future event take place. Whether or how crises emerge depends upon the way in which they are interpreted by relevant actors, which determines whether these events become policy issues.

Crises and disasters also differ in their scale, as shown in figure 1.1. Some crises are small scale, such as the flash flooding that, in the “Swiss Canyon incident,” killed thrillseekers who went “canyoning,” which involves hiking through whitewater in a narrow watercourse. This was a crisis for the company that led these tours and was certainly unfortunate, but it was not a disaster because of the relatively small scope of the event’s effects and in particular because it was the result of the tour operator’s carelessness. American crises include the *Exxon Valdez* oil spill, the Three Mile Island nuclear accident, the widespread food poisoning cases at the Jack in the Box restaurant chain in 1993, and the high-profile crash of ValuJet Flight 592 into the Florida Everglades in 1996 (Birkland and Nath 2000). In each case the problem was “induced by the actions or inactions of an organization.”

Figure 1.1 Crises, Disasters, and Catastrophes

	Crises	Disasters	Catastrophes
↑ Scale or Magnitude of the Event	Chernobyl <i>Exxon Valdez</i>	September 11 attacks Kobe earthquake	Hurricane Katrina South Asia tsunami
	Tylenol poisoning	Pan Am 103	
↓	Swiss Canyon incident	Katherine flood (Australia)	

Source: Adapted from Faulkner (2001).

The flood in Katherine, Australia, a popular tourist area, falls into the disaster category because it was the result of forces beyond the effective control of the tourism industry in the region. Much larger disasters include the Chernobyl nuclear power plant accident and the Kobe earthquake of 1995; American disasters include Hurricane Andrew in 1992 and the Loma Prieta and Northridge earthquakes in 1989 and 1994, respectively, as well as the September 11 attacks. These events all involve natural disasters or terrorism, and although organizational failures clearly took place before and after these events, one cannot say that the actions of any one firm or organization caused or led directly to these disasters.

A further distinction arises from the idea that some disasters are *catastrophes*. Catastrophes are more profound than disasters because they affect a much broader area, render local and neighboring governments unable to respond because they, too, are affected, and therefore require considerable assistance from regional and national governments or from international or nongovernmental relief organizations (Quarantelli 2005). Recent catastrophes include the South Asia tsunami in 2004 and Hurricane Katrina and the major earthquake in Kashmir in 2005. Catastrophes are most likely to gain the greatest attention and therefore are the events most likely to trigger policy change.

The distinction between crisis, disaster, and catastrophe is useful, but the line between what constitutes a disaster and what constitutes a crisis is unclear. It will always be in the interest of some participants in policy debate to depict an event as a crisis triggered by willful action or gross human malfeasance (and therefore as the product of an organization or institution). Others may argue that the same event is a disaster or even a catastrophe over which the supposedly responsible organization had little or no control. Blame fixing is a key feature of causal stories; these stories are important both in agenda setting and in laying the groundwork for the selection of alternative policy directions (Stone 1989). Whether an event is a crisis, a disaster, or a catastrophe—and therefore whether it can effectively be blamed on some actor or organization—may be as much a social construction as an objective fact.

Regardless of its ultimate cause, a disaster has an influence on the broader social and political community. The larger the disas-

ter in terms of lives lost, property damaged, and the physical area covered (that is, the more like a catastrophe the event is), the larger the potential influence on the political and policy world, all other things being equal. This follows Carter's definition of a disaster as "an event, natural or man-made, sudden or progressive, which impacts with such severity that the affected community has to respond by taking exceptional measures" (1991, xxiii). I depart from this definition by stipulating that most disasters are sudden. If a "disaster" builds gradually, it is more difficult to portray as a disaster because it is possible to detect the indicators of the developing problem, even if action is not immediately taken. Indeed, crises tend to build over time, whereas disasters strike suddenly. For example, the crash of ValuJet Flight 592 into the Everglades was the culmination of several organizational failures at the airline, not one sudden event. Nevertheless, the crash attracted attention and led to change. When an event is unanticipated (even if it is "inevitable" in the sense that we know it will happen eventually—for example, the major earthquake that we expect will strike Los Angeles, San Francisco, or Seattle someday), it affects both the way people react and the impact on the policy process. A sudden event means that the public and policymakers begin to scrutinize an issue nearly simultaneously. A disaster can often do in an instant what years of interest group activity, policy entrepreneurship, advocacy, lobbying, and research may not be able to do: elevate an issue on the agenda to a place where it is taken seriously in one or more policy domains.

A crisis can be internally generated or it can be the result of a disaster or some other undesirable event that strains an organization's adaptive capacity. Faulkner quotes Booth's definition of a crisis as "a situation faced by an individual, group or organization which they are unable to cope with by the use of normal routine procedures and in which stress is created by sudden change" (Booth 1993, 86). The entire field of crisis management is devoted to the development of nonnormal procedures to respond to nonroutine managerial problems. In other words, a disaster is what happens to individuals—those people in the path of a hurricane, for example—but the crisis is suffered by an organization, from the government broadly to individual agencies or groups. These groups must pay extraordinary attention to a crisis if they

are to address it successfully. Crisis management becomes important because organizations (even ad hoc organizations that are spontaneously created in a disaster), not individual victims, are responsible for managing crises. Furthermore, what may be thought of as a "disaster" may not lead to a crisis for a particular organization if the organization is well prepared for potentially disastrous events. Earthquakes, hurricanes, and the like may always be stressful in some ways, but planning for disasters and taking steps to mitigate their effects may prevent them from rising to the level of crisis. Indeed, as we will see in this book, federal disaster relief policy is designed to routinize responses to predictable *types* of disasters. Natural disasters are predictable in the sense that we know that a big flood, earthquake, or hurricane will happen *somewhere, sometime* in the future. The goal of the government is to make responses to disasters routine, reduce strain on the disaster relief and management system, and therefore reduce the likelihood of organizational crisis in the national government. When responses become nonroutine, or when existing systems are overwhelmed in catastrophic disasters, such as after Hurricanes Andrew (1992) or Katrina (2005), crisis in the sense defined above is more likely.

A *policy domain* is the substantive subject of policy over which participants in policymaking compete and compromise (Burstein 1991; Knoke and Laumann 1982). Thus earthquakes are a policy domain, as are hurricanes (both part of a broader domain of natural disasters), aviation security, and homeland security. There is some overlap and nesting in these domains: Earthquakes and hurricanes are part of a broader natural hazards domain, and since September 11 natural disasters have become part of a broader "homeland security" or "public security" domain, although not entirely comfortably. Some participants in the earthquake and hurricane policy domains have little in common (for example, seismologists and meteorologists), whereas others (for example, disaster relief experts) are concerned with any natural disaster and therefore bridge the earthquake and hurricane domains. We will see the implications of this nesting and bridging in the case studies of natural disasters. The *policy community* consists of the individuals acting on behalf of groups that are actively involved in policymaking in a particular domain (Laumann and Knoke 1987).

Domains prone to disasters are policy domains that are the most sensitive to policy change in the wake of a disaster. These domains generally gain very little attention until a sudden event gives issues priority on the agenda. The domains that deal with earthquakes and hurricanes are almost by definition domains prone to disasters. People working in these domains seek to prepare for, respond to, and mitigate the effects of these disasters. Members of the aviation security domain are more concerned with *preventing* bombings, sabotage, and hijackings before these crimes happen and thus have a somewhat different job from those working in the natural disaster domains. Domains not prone to disasters include domains such as consumer product safety or most kinds of disease. In these domains problems become known slowly, as *indicators* of problems accumulate and become more evident. Harmful side effects of medicines or dangers of toys or automobiles do not become evident all at once; rather, problems arise nationally and worldwide as products are used, data accumulate, and analysts connect seemingly disparate events with common causes. And in many domains there are no single causes. In traffic safety, for example, nearly forty thousand fatalities a year can be laid to many causes, from drunk driving, to driver inattention, to vehicle design or highway design flaws, to simple bad luck. In the safety and disease domains, problems are often anticipated even if they are not successfully addressed. In 2005, for example, the problem of the H5N1 strain of bird influenza gained worldwide attention, and its transmission to humans in Turkey and Europe in early 2006 has increased concern about pandemic flu, and in particular about the possibility of its transmission from person to person rather than from birds to people. But a global flu pandemic is a different kind of disaster from the type described in this book because it can be anticipated before the pandemic occurs. Thus policy change can actually precede an event, and so the policy change dynamics are somewhat different from those I study here. One reason to study the process of learning from disasters is that efforts to learn and to change policy are likely to be accelerated in the wake of major events. At the same time, learning may be more difficult in domains prone to disaster because large events generally happen infrequently. Learning from such low-probability/high-consequence events is therefore likely to be challenging, particularly when

policymakers are confronted with the urge to “do something,” and when action, regardless of its value, may be more politically advantageous than more cautious and ultimately more effective deliberation.

Knowledge, Learning, and Policy Change

Policy scholars and political scientists have tended to view participation in policymaking and politics as a process in which power is wielded to promote an individual's or group's interests. Since the 1980s this primarily interest-driven notion of politics has given way to a more subtle understanding of politics and policymaking. As John Kingdon argues with his “streams metaphor” of agenda setting and alternative selection, this understanding relies on the substantive meaning of *ideas* in the policy process, and on the ability of actors in the policy process to prevail in competitions over ideas (1995). While power and interests are still important aspects of policymakers' behavior, the substance of what is being promoted and enshrined in policy is the *idea*.

Sabatier and Jenkins-Smith expand on the notion of ideas, noting that policies themselves are idea-driven belief systems:

[P]olicies and programs incorporate implicit theories about how to achieve their objectives, and thus can be conceptualized in much the same way as belief systems. They involve value priorities, perceptions of important causal relationships, perceptions of world states (including the magnitude of the problem), perceptions of the efficacy of policy instruments, and so on. The ability to map beliefs and policies on the same “canvass” provides a vehicle for assessing the influence of various actors over time, particularly the role of technical information (belief) on policy change. (Sabatier and Jenkins-Smith 1993, 17)

The process by which participants use information and knowledge to develop, test, and refine their beliefs—the beliefs that motivate political action as well as the beliefs that find their way into policies—is the learning process. Busenberg defines a learning process as “the institutional arrangements and political events that shape individual learning” (2001, 173). This process is central to a theory of event-related policy change. Participants in

policymaking may alter some of their beliefs as they learn more about the policy problem, the potential solutions to the problem, and the arguments they can make to advance their preferred policies. As these beliefs are altered, we can say that participants in policymaking are engaged in learning.

Why do individuals learn? Why do some theorists claim that organizations learn? Because human information-processing capacity is limited by our ability to gather and analyze all relevant information. People and the organizations in which they make decisions are *boundedly rational* (Simon 1957), which means that they seek to make rational decisions within the limits of information gathering and analysis capacity. Saying that humans are boundedly rational does not mean that people cannot improve their decisions, however. Rather, a model of decision making that rests on bounded rationality contains within it the idea that people have a problem-solving orientation; that is, people *want* to solve problems and make better decisions. It also contains the ability for people to make, correct, and learn from errors. People thereby develop “new understanding, and [adopt] new strategies in pursuit of their goals” (Busenberg 2001, 174, citing Ostrom 1999). In other words, social policy learning and political learning are occurring. The ultimate goal of social policy learning and political learning, however, is to actually effect change in some tangible way, and the most tangible evidence of policy change is new legislation and regulation.

To say that events lead to efforts to learn, that they contribute to the learning process, therefore assumes some degree of rationality among political actors and within political institutions. One might consider any system entirely dysfunctional if it failed to respond in some way to disasters or crises. At the other extreme would be fully rational behavior in which an event simply led to a set of calculations about what the “best” course of action would be based on at least two variables: the probability of the recurrence of the most recent disaster, and the consequences of the damage from any recurrent event. Indeed, these two variables are central to our discussion of what students of disasters and catastrophes call “low-probability/high-consequence events.” Both must be taken seriously: One need not be too concerned about an event that has few if any consequences, whether it happens daily or once in a

thousand years. Rainstorms happen all the time, but they are generally inconsequential from a flood policy perspective. Nevertheless, if a potential event is catastrophic, even the *possibility* of its return must be taken seriously (Clarke 2005a); probability alone is insufficient for making policy about potentially catastrophic events.

Humans and their institutions behave in ways that are boundedly rational, then, but also adaptive. Bryan Jones, in *Politics and the Architecture of Choice*, sought to better understand “more careful comparisons of adaptive behavior and its failure in particular situations” (Jones 2001, xi). Jones employs a rich literature in the social and behavioral sciences to argue that humans and our institutions have important limits, are boundedly rational, and are adaptive within limits.

Jones outlines the basic argument of his book as follows:

(1) Human behavior is mostly adaptive and goal-oriented. (2) Because of biological limits on cognitive capacities, however, humans are disproportionate information processors. They tend to react to new information by neglect or overestimation. (3) The formal organizations created by humans aid in adaptation by overcoming inherited limitations in adaptive abilities. (4) Nevertheless, some of our limitations in adaptability will show through in even the most rational of institutions. (5) As a consequence, these institutions will not react proportionately to incoming information, and outputs from the most rational of institutions will be disjointed and episodic. (Jones 2001, 25)

People are goal oriented and want to solve problems. In the case of focusing events, there is ample evidence, at least in the agenda-setting literature, that a sudden event will lead to a disproportionate amount of attention to the issues revealed by the most recent disaster. This is because the fact that an event has occurred generally does not change the overall risk of any future event happening; rather, what has changed is the level of interest in, attention to, and perhaps appreciation of the possibility of an event's recurrence. In other words, this disproportionate increase in attention to and concern about an issue is the complement to the disproportionate lack of concern and attention to the problem before the focusing event.

This increased attention does not necessarily mean that learning will occur, however. Increased attention alone is insufficient evidence of any sort of learning. Rather, we should be able to link attention to actual policy change. Are the organizations in policy communities able and prepared to learn from disasters, and to what extent? This question is taken up in the case studies addressed in the following chapters. In particular, those chapters look for evidence that some sort of learning process led to policy change.

We can base our understanding of policy change and learning on features of human behavior as reflected in organizations and institutions. The first of these features is “intended rationality.” People seek to be as rational as possible; social scientists often find the many ways in which people deviate from this intended rationality particularly interesting and worthy of study (Jones 2001, 54). Second, in some cases people are prepared to take in new information and deliberate on their responses to it, while in other cases people must react very quickly in the face of new information. Neither model of reaction to information is optimal in all cases, nor can an individual react quickly and deliberately at the same time. Jones calls this tension the “preparation-deliberation tradeoff.” The decision how to respond to some crises and disasters requires a degree of deliberation, but if existing rules and procedures are close at hand, they may well be used even if they are almost immediately found wanting. Available tools may also be pressed into service because of extreme pressures to act quickly in crises and disasters. The continued failure of existing tools and processes in the face of a disaster may provide a powerful impetus for learning and policy change after a disaster.

Different Types of Learning

From a normative perspective, it is evident that people *should* learn from disasters. Newspapers and journals of all stripes have discussed the “lessons of 9/11” or “the lessons of Hurricane Katrina” as if we will inevitably—and almost automatically—learn from these events. This is not necessarily the case. Part of the difficulty in explaining how we learn or fail to learn from disasters lies in the difficulty of developing a model of learning.

Researchers must make clear at the outset whether their model of learning allows nonhuman entities such as institutions or organizations to “learn.” Most students of the policy process assume that individuals—agency heads, interest group leaders, academics, journalists, and so on—are the key objects of learning in the policy process (Busenberg 2001; Levy 1994; May 1992; Sabatier 1987, 1991; Sabatier and Jenkins-Smith 1993). Indeed, Sabatier (1987) argues that learning at the level of groups and organizations is largely “metaphorical,” because organizations do not have the cognitive capacity to “learn.” I adopt Sabatier’s assumption that individuals learn. However, as noted above, we can also stipulate that participants in policymaking know of their cognitive and information-processing limits; they therefore create organizations to capitalize on the ability of people to work together to seek solutions while seeking to overcome the limitations of *individual* decision making (Jones 2001).

Once we address the question of who learns, we must address the question of *what* is learned. This is not as straightforward as one might suppose. Scholars who have considered the question of learning have outlined different theories of both the process of learning and the object of learning, as summarized in table 1.1. Bennett and Howlett (1992) identify four prominent students of learning in the policy process: Hugh Hecló, Peter Hall, Lloyd Etheredge, and Paul Sabatier. Hugh Hecló’s seminal 1974 study suggested that “political learning” is “a governmental response to some kind of social or environmental stimulus” (Bennett and Howlett 1992, 277). This is an attractive way of thinking about learning from disasters and other focusing events, for the stimulus for learning—the event—is obvious and its effects can to some extent be separated from the “background noise” of normal policymaking.

Peter Hall (1993), however, describes what he calls “social learning” as more measured and deliberate than Hecló’s political learning. “As [Hall] puts it, learning is a ‘deliberate attempt to adjust the goals or techniques of policy in the light of the consequences of past policy and new information so as to better attain the ultimate objects of governance’” (Bennett and Howlett 1992, 277, quoting Hall 1988). Bennett and Howlett note that Hecló’s notion of responding to an external stimulus and the “deliberate” attempt

Table 1.1 Types of Learning, Who Learns, and What Is Learned

Learning Type	Who Learns	Learns What	To What Effect
Government learning	State officials	Process related	Organizational change (Etheredge)
Lesson drawing	Policy networks	Instruments	Program change (Rose, some Hecló)
Social learning	Policy communities	Ideas (Sabatier)	Paradigm shift (Hall, some Hecló)
Political learning	Political actors	Strategies	Improved arguments for particular policies (May)

Source: Adapted from Bennett and Howlett (1992), 289, fig. 1.

to adjust goals or policy tools may be two ways of describing the same sort of stimulus–response mechanism that characterizes much of the policy process. The difference, if there is one, is that Hecló suggests that learning is a less conscious activity, while Hall argues that learning is a conscious action explicitly linked to the motivation for policy change.

Etheredge (1985) first posed the question “can governments learn?” and his “government learning” is more closely associated with organizational theory than the other categories are. “Although themselves divided in terms of a precise definition of learning, organizational theorists share notions of organizational adaptation and behavior change due to knowledge accumulation and value-change within institutions and their members. Etheredge suggests these concepts apply equally to public organizations as to private firms” (Bennett and Howlett 1992, 277, internal citations omitted). This is a useful application of organizational theory to the public policy process, but I will not rely heavily on this conception of learning, both because it fails to specify precisely what learning is and because Etheredge focuses on individual organizations rather than on the broader range of actors in the policy community.

At the heart of Sabatier’s Advocacy Coalition Framework (ACF) is “policy-oriented learning,” which is learning about “relatively enduring alterations of thought or behavioral intentions that result from experience and are concerned with the attainment or revision of the precepts of one’s belief system” (Sabatier 1987, 672). As noted above, belief systems are important in Sabatier’s framework. This framework argues that while policy-oriented learning is an important aspect of policy change and can often alter peripheral features of a coalition’s belief system, changes in the core aspects of a policy are usually the result of perturbations in non-cognitive factors external to the subsystem, such as macroeconomic conditions or the rise of a new systemic governing coalition (Sabatier 1988, 134).

In essence, learning is a day-to-day activity, but it does not often change the core of an individual’s or interest group’s belief system. Larger systemic shocks—perhaps larger than just a focusing event by itself—are required, such as the political realignments in the United States that preceded the Civil War, which led to the demise

of the Whig Party, or the Great Depression, which created a New Deal coalition in the Democratic Party that lasted nearly fifty years. These major shifts are not the result of one event but are often driven by a combination of related events. In the case of the New Deal, Franklin Roosevelt was required to react quickly to problems that resulted from the crash of the stock market, the collapse of the world trading system under crushing tariffs, the liquidity crisis of the early 1930s, and the related insolvency of many banks. Although the causes of these events are complex and hard to sort into neat categories, we can argue that the responses to these crises led to learning based on both experience and ongoing policy experimentation. Indeed, one of Roosevelt’s most famous statements, made in response to demands that the government address the Depression, is this: “The country needs and, unless I mistake its temper, the country demands *bold, persistent experimentation*. It is common sense to take a method and try it; if it fails, admit it frankly and try another. But above all, try something” (emphasis added).²

Perhaps the most obvious form of learning is lesson drawing (Rose 1993). This is different from experimentation. Lesson drawing involves scanning nearby jurisdictions or more distant places for policy ideas that can be applied to local situations; it is both stimulus driven and *externally* focused, but the mechanisms for learning—and the reasons for mere mimicking or copying—are not well defined. While lesson drawing may be important, particularly in federal systems, where subnational governments draw lessons from other governments’ experiences, lesson drawing is less a theoretical framework than a description of how learning proceeds. It relates directly to what Peter May (1992) calls instrumental policy learning, described in the next section.

In the end, no one type of learning can account for the full range of learning that can occur after a disaster. May’s depiction of learning from policy failure incorporates the strongest features of these learning types and provides a bridge between learning, policy failure, and disasters.

Policy Failure and Learning

In *After Disaster* I argued that focusing events get so much attention because they provide evidence of policy failure. May links

policy failure to learning and in particular provides guidance as to what would serve as evidence of learning. This is very important: May's 1992 article is one of the few works on this subject that considers the empirical implications of studying learning. May also draws upon the literature reviewed above to generate his theory of failure-inspired learning. He argues that policy failure inspires three different kinds of learning: instrumental policy learning, social policy learning, and political learning.

Instrumental policy learning is learning about the "viability of policy interventions or implementation designs." This learning centers on implementation tools and techniques.³ While this appears to be similar to lesson drawing, it differs in that it can involve indirect experience with the performance of policy instruments but also direct experience with policy instruments. When we analyze feedback from implementation and make changes in design that improve performance, we have *prima facie* evidence that learning has happened. Instrumental policy learning is central to this study because it is relatively easy to demonstrate the existence of policy change by pointing to legislation or regulation; one can then trace the ideas that fed into policy change in media reports, records of debates, congressional hearings, or public comments on proposed regulation.

Social policy learning involves learning about the "social construction of a policy or program." This learning goes beyond simple adjustments in program management to the heart of the problem itself, including attitudes toward program goals and the nature and appropriateness of government action. If applied successfully, social policy learning can result in better understanding of the underlying causal theory of a public problem, leading to better policy responses. Social policy learning involves the interplay of ideas about how problems come about and how they can be solved, and is much more likely to engage ideology and belief systems than are more practical aspects of instrumental learning. This distinction is not a precise one, however; the choice of policy tools is also influenced greatly by beliefs about what will work and what is desirable from managerial and ideological perspectives.

Political learning is considerably different from instrumental and social learning. Political learning consists of learning about "strategy for advocating a given policy idea or problem," leading

potentially to "more sophisticated advocacy of a policy idea or problem" (May 1992, 339). Political learning occurs when advocates and opponents of policy change alter their political and rhetorical strategies and tactics to conform to new information that has entered the political system.

In the ideal case, learning reflects the accumulation and application of knowledge and leads to better policies. But policymakers and their supporters may support policy change that is not objectively related to the actual problems revealed by a given event. May calls mimicking or copying policy without assessment or analysis "superstitious instrumental learning." Copying or mimicking can lead to positive policy outcomes by accident rather than by design. Stakeholders may believe that a policy is an improvement or at least is not harmful if the near-term outcomes are no worse, and perhaps better, than the outcomes of the policies that were replaced.

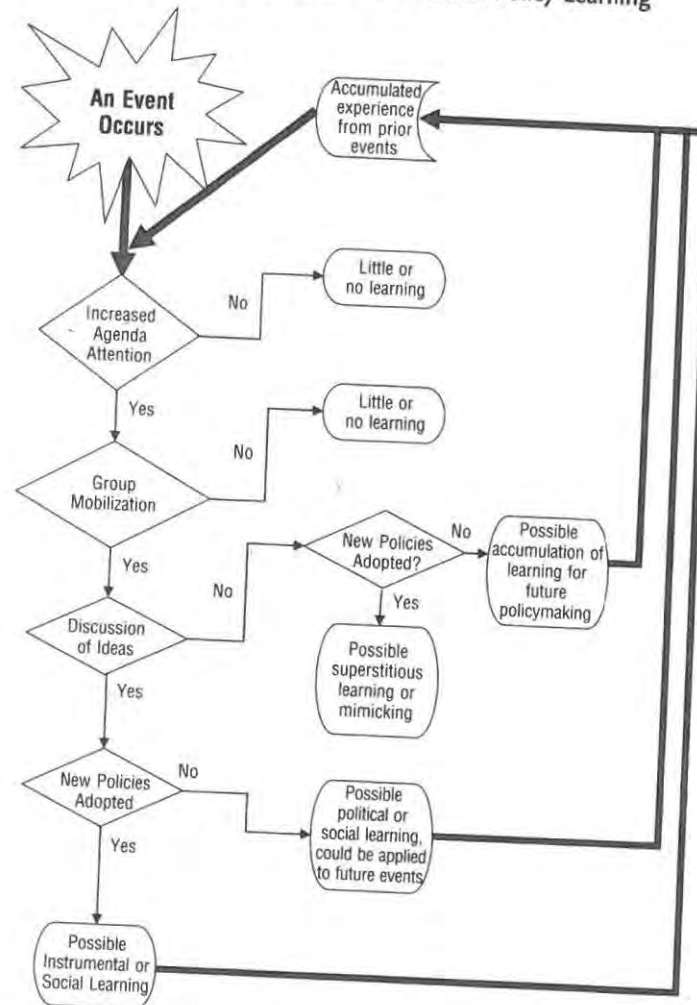
A Model of Event-Related Policy Change

Thomas Dye argues that "a model is merely an abstraction or representation of political life" (1992, 44). Good models seek to order and simplify reality, identify what is significant about a system, and square it with reality to the extent that this is possible. Models should communicate meaningful information about the policy process, including direct inquiry and research, and suggest explanations for public policy. On this last point, Dye argues that models "should *suggest* hypotheses about the causes and consequences of public policy" (45). Another useful feature of a model is parsimony both in its form and in the phenomenon it is attempting to describe; a model should be no more complex than it has to be to explain a given event.

The model outlined in figure 1.2 seeks to fulfill these criteria. In particular it helps us to generate propositions about what we might see in the policy process in domains prone to disaster. These propositions would suggest the data needed to understand a given event.

The first proposition is that most if not all participants in a policy domain want to address or solve the problems revealed by a focusing event, but that the proposed solutions are likely to

Figure 1.2 A Model of Event-Related Policy Learning



vary with the interests and motivations of these participants. This reflects the idea that nearly all participants in a domain are goal oriented, as suggested by Jones (2001) and as implied by the literature on learning. No legitimate actor in any policy domain wants to see planes hijacked or people displaced by natural disasters. But the policy instruments through which problems will be prevented or mitigated will differ from participant to participant in the policy process because the depiction of *how* problems come to be, and therefore how they are solved, will be different depending on each participant's ideological and organizational commitments.

The second proposition is that a few events will gain the most attention. The distribution of damage and deaths in disasters and accidents is not statistically normal; rather, the distribution of focusing events has a long "tail," where a large number of relatively small events garner little attention, and a few big events garner a great deal. For example, many tropical storms or hurricanes can strike the eastern United States during hurricane season, but only the very largest storms, on the scale of Hurricanes Katrina or Andrew, get serious attention and have the greatest potential influence on learning. Smaller incidents do not get attention because they are often successfully addressed by existing organizations and policies; Hurricane Katrina got more attention than did all four of the hurricanes that struck Florida in 2004 because the response to the Florida hurricanes was generally perceived as adequate, and because no individual storm was catastrophic, whereas Katrina was a catastrophe that overwhelmed the national emergency management system.

The third proposition is that group mobilization is linked in time to a particular focusing event. In particular, the activities of groups—or the representatives of such groups—will become more evident in news accounts of the issue. In congressional hearings, particular groups' representatives will be heard from more often. In the media and in the legislative branch, these actors' activities will be clearly linked to an event.

The fourth proposition is that group mobilization will be accompanied by an increase in discussion of policy ideas. This will include theories about the causes of and potential solutions to the problem and as such are primarily social and instrumental policy

learning matters. Evidence of political learning may also be present, but such evidence may be less apparent, given that this learning happens for the most part internally, within organizations in the policy domain or advocacy coalitions. In any case, policy learning is much less likely without the mobilization of ideas, and ideas are unlikely to come to the fore without some sort of group mobilization.

Thus the fifth proposition is that there is a relationship between ideas and policy change. In particular, change is more likely when ideas become more prominent after events than when they do not. Policy change can occur without ideas, but such policy change is not typically the result of careful debate and therefore does not result from learning; instead it is mimicking or copying without learning (May 1992). Table 1.2 shows the types of evidence one would use to illustrate learning as conceptualized in these propositions.

The sixth proposition is that it is possible for learning to decay over time. While policy change may result from an event, the time that intervenes between one focusing event and another and the demands placed on policymakers in that intervening period may cause participants in the policy process to “forget” the lessons they learned. In this study I am more concerned with event-related policy change and learning than I am with the long-term decay, if any, of the lessons of a given event.

As I finished writing this book in late 2005, Hurricane Katrina struck the Gulf Coast of the United States, resulting in what appears to be the largest natural disaster in terms of monetary damage in American history. The effects of Hurricane Katrina, and the apparently fumbled federal, state, and local response to the event, suggest that the putative lessons of Hurricane Andrew were not fully learned, were forgotten over time, or were influenced by the interaction between the natural hazards and the “homeland security” domains. Kingdon calls these interactions between policy domains “spillovers,” and such spillovers can theoretically reinforce or retard learning. I will show that the focus on homeland security had a corrosive influence on the nation’s preparedness for natural disasters. I address this problem of decay in more fully in chapter 5, where I discuss the implications of event-related policy change for policy implementation.

Table 1.2 Typical Evidence of Learning in the Policy Process

<i>Organization or Institution</i>	<i>Evidence of Learning</i>
News media	Stories about the problem Changes in the nature of news coverage (people quoted, substance of news coverage)
Interest groups	Change in appearances at congressional hearings Increased attention from news media (generated by the group)
Congress	Legislative change Change in the substance of debate Change in the topic areas of hearings
Regulatory and implementing agencies	Issuance of new and proposed regulations Change in the nature and substance of the regulations being issued Change in procedures and in the interpretation and implementation of statutes and regulations.

Figure 1.2 depicts what I call event-related learning. In this model, if actions occur at various points after a focusing event occurs, learning becomes more likely, as does policy change as a result of this learning. This model also suggests that learning without policy change may occur after one event, or that policy change may result from mimicking or “superstitious” learning. This kind of learning is the result of pressure to “do something” after an event without any careful analysis. Whether learning occurred is a qualitative judgment that must be made within the context of each case study. Finally, the model acknowledges that not every event will lead to policy change but that events may contribute to a base of experience that may promote learning from subsequent events as knowledge accumulates, as depicted by the feedback arrow.

I adopt Busenberg's definition of learning as "a process in which individuals apply new information and ideas to policy decisions." I modify this definition slightly, however, and define learning as a process in which individuals apply new information and ideas, or information and ideas elevated on the agenda by a recent event, to policy decisions. This amendment takes into account the ebb and flow of ideas on the agenda and the accumulation of ideas over time, even as those ideas are not uniformly translated into policy. For example, the risk of catastrophic terrorist attacks on the United States was probably about the same on September 12, 2001, as it was on September 10, but the September 11 attacks caused the public and elites to be much more attentive to the terrorism problem. A focusing event brings information to the attention of a broader range of people than normally consider the issues.

I do not claim to be able to measure "learning" directly at the individual level on the basis of behavioral-scientific notions of learning or improvement in cognitive skills. Rather, I focus on the apparent lessons of these events and ask whether it appears that the clear lessons of these events have been learned, as reflected in the policymaking process. In particular, we can say that there is *prima facie* evidence of learning if policy changes in a way that is reasonably likely to mitigate the problem revealed by the focusing event. This operationalization of learning cedes a great deal of judgment to the researcher making the claim that learning has occurred. The case studies in the chapters that follow will show, however, that empirical and narrative analyses can provide a strong base for learning or the lack thereof.

In the beginning of the process, an event happens. The first crucial step is for the event to gain attention. If it fails to gain much attention, it is unlikely to result in much group and policymaker mobilization. Events that fall into the low-attention category generally include events that do relatively little damage, appear to be unthreatening, or appear to be well contained within existing policies and require little or no action on anyone's part. The several cockpit intrusions that occurred in commercial airliners before September 11 are examples of such events; drunk or otherwise disorderly passengers perpetrated most such intrusions. The system then in place, which required that the cockpit door be closed and

rather weakly locked, was deemed able to cope with the occasional inconvenience of an intrusion. The threats contemplated before September 11 were not considered sufficient to require a more secure cockpit. In other words, the existing system treated the possibility of a fatal cockpit intrusion as very remote.⁴ Even when intrusions received much attention, they failed to cause groups and policymakers to move toward understanding whether policy failure had occurred and whether something should be done about it. The failure to mobilize stems learning because learning requires competition between advocacy coalitions, as each side tries to marshal evidence and knowledge about the policy process and about political tactics to advance its goals. By group mobilization, however, I do not mean broad-based citizens' groups or social movements but the relatively small groups of professionals, experts, and advocates that are mostly likely to be energized by an event.

If there is discernible group mobilization after a focusing event, we should expect to see a discussion of ideas in various forums—that is, an exchange of opinions, beliefs, and theories about why the event happened and whether existing policy can address the problems revealed by the event. If a policy is shown to have failed, the discussion will include policies that seek to remedy the failure and prevent recurrence. It is at this stage that we may see considerable evidence of learning. If there is change without such a discussion, it is possible that mimicking or superstitious learning is at work. If, by contrast, we can draw a link between ideas, an event, and increased attention to ideas and new policies, then we have strong evidence of instrumental policy learning, and possibly also some evidence of social policy learning and political learning.

Learning and Lessons in This Study

Evidence of political, social policy, and instrumental learning varies in both type and ease of identification. May notes that it is very difficult to find definitive evidence of political learning in a domain because secondary sources "rarely provide detail about the relevant policy elite's causal reasoning about a policy problem or

solution, often lack explanations for the choice of particular policy objectives or instruments, and are sketchy about different advocates' political strategies" (1992, 349). Prima facie indicators of social learning involve "policy redefinition entailing changes in policy goals or scope—e.g., policy direction, target groups, rights bestowed by the policy" (336).

As noted above, it is easiest to provide prima facie evidence of instrumental learning because a great deal of substantive legislation will often follow a focusing event. The substance of that legislation will often reveal the extent to which instrumental learning has occurred. The traces left by the legislative process—for example, in legislation that was introduced but failed to pass, media coverage, congressional testimony, and the like—provide at least indirect evidence of learning after a disaster, while an actual change in the law is obviously the most direct and important evidence.

I have adopted this somewhat stringent standard of evidence of learning because it is hard to measure learning outcomes without concrete evidence of change. Of course, the passage of legislation or enactment of a new regulation is not necessary to show that some sort of learning is likely to have occurred. As Kingdon notes, a focusing event, or anything else that moves the key streams together, merely opens a window of opportunity for change, without any guarantee of change itself. Thus I analyze both legislation that has passed into law and legislation that has not.

Methods

To assess these propositions requires the collection of data on key aspects of the policy process, as outlined in table 1.2.

Policy change can be defined broadly or narrowly. The most palpable form of policy change involves constitutional amendments or the enactment of major legislation. Lesser forms of change include modifications in regulations or standard operating procedures and transformations in the behavior of "street-level bureaucrats" (Lipsky 1978). In each of these instances policy change is detectable to some degree, but the mechanism by which this change occurs is often unspecified.

In this book I use proposed and enacted legislation and regulations as evidence of policy change, or movement in the direction of policy change, as reflections that some sort of learning may have occurred. Legislation and regulations are tangible evidence of learning outcomes, and we can assume that they are likely to be "reasonably enduring."

An important source of data for my case studies is the testimony of witnesses who appeared before congressional hearings. Congress is a good institutional venue to study, as its activities are consistently well documented through transcripts of testimony at hearings, committee reports, bills, and the like. Members of Congress, motivated by the desire to make good policy or by pressure from their constituents, are likely to react to focusing events. Specifically, congressional testimony is an appropriate indicator of group activity because it is among the most popular lobbying techniques employed by interest groups (Davidson and Oleszek 1994, 298). Because Congress keeps such copious records, congressional hearings provide a good record of what groups were most active in the policy domain, at least as far as Congress is concerned.

I found hearings using the Congressional Information Service index via the LexisNexis online database. This database allows researchers to isolate hearings on particular topics using a keyword search. This method is similar to that used by Baumgartner and Jones (1993), but as in *After Disaster* my unit of analysis is the individual witness before each hearing. I did not code appropriations hearings because they tend to cover routine budget matters and hear from a very limited range of witnesses compared with other legislative and oversight hearings. Once I had isolated hearings, I included them in a database listing each hearing and witness. I coded witnesses' testimony for group affiliation, the main subject of their testimony, and whether the testimony was related to a particular event. I used a very conservative method to code the last variable—the witness needed to mention the event directly in his or her testimony. I then categorized the witness's group affiliations by group type (industry, government, interest group, and so on) to understand how broad categories of groups behaved in the wake of focusing events.

Congressional testimony does have some shortcomings as a measure of an issue's importance. The partisan balance of

Congress or a committee chair's political preferences can influence the nature and number of witnesses. Furthermore, Congress is not the only arena of group activity or conflict. Mass protests and media pressure are two other methods of influencing policy. Still, focusing events can reasonably be expected to generate congressional testimony from groups that seek change as a result of the event. The event may be of such magnitude that it could be politically dangerous for a committee chair (and his or her allies outside Congress) to exclude opposing witnesses from hearings. Indeed, from the perspective of more powerful groups, it may be strategically wise to let such opponents vent their frustration at hearings, so as to prevent it from boiling over into other forms of political expression that could exert real pressure for policy change (Molotch 1970).

Another issue in the use of congressional testimony is the question of partisan control of the legislative branch and its concomitant influence on which witnesses are allowed to testify. But the issues studied here are not obviously partisan; we cannot say that aviation security is a liberal or conservative issue, or a Democratic or Republican issue, even if proposed policy tools may be more closely associated with a particular party or ideology. To the extent that partisanship matters, it can reasonably be assumed to be part of the "error term" of any model of focusing event dynamics. Of course, we can say that the potential solutions to the problem will reflect partisan preferences, but it is unlikely that a large focusing event will be ignored. Focusing events are of great interest to the news media and elite actors, and Congress, regardless of the party in power, will ignore such events at its peril. Data from floor debates that reflect the attitudes of rank-and-file members of Congress were gathered from the *Congressional Record* via the Library of Congress's Thomas search engine (<http://thomas.loc.gov>). Legislation was gathered from the same source.

News coverage of these focusing events, gathered to provide a sense of the broader public agenda, was generally collected from the *New York Times* via LexisNexis. I use the *New York Times* as a measure of the public agenda for substantive and practical reasons. The *Times* is readily accessible and searchable electronically, which makes it a particularly useful source, but it is also widely viewed as the national "paper of record," one that "aspire[s] to high journalistic stan-

dards" (Lawrence 2000a, 11) and thus epitomizes professionalism and journalistic excellence. For these reasons the *Times* has remarkable power in setting the agenda for other media outlets, such as the network news broadcasts (Auletta 2005).⁵

In the case studies that follow, the data collected are not fully parallel. Rather, I seek to use these data, and data from other sources as deemed necessary (such as local news coverage of disasters, employed in chapter 2) to illustrate what I see as the history of ideas and learning in a particular policy domain.

The Case Studies

Many policy domains are prone to disasters. A wide range of natural disasters, from the generally inconvenient, such as blizzards, to the potentially catastrophic, such as earthquakes and hurricanes, have the potential to change perceptions of problems and thus policy. Accidents that are a consequence of modern technology can also lead to policy change, but these accidents have the added dimension of being caused by—or at least blamed on—human error. The politics of policymaking after such events is likely to be different in analytically important ways, and it is worthwhile to consider both kinds of disasters, natural and "humanly caused."

Because of the breadth of these two categories, I focus on four types of disaster: domestic terrorist attacks (specifically the September 11 attacks), earthquakes and hurricanes (which I consider in one chapter because of some important similarities and contrasts), and aviation security breaches with fatal outcomes. The particular events of interest occurred in the United States. I study domestic events because they have the most direct and discernible effects on national policymaking. More details about each policy domain are provided in the following chapters, but we can briefly consider whether there are likely to be learning opportunities in these policy domains.

The first case study in this book is the September 11 terrorist attacks. One reason to study this case is that this was perhaps the most widely reported one-day catastrophe in world history. Because global communication is nearly instantaneous, a much

larger proportion of the world's population learned of this event within minutes or hours after the first plane struck the World Trade Center than has ever learned of a similar event so quickly. From a learning perspective, the September 11 attacks are important because they triggered the sweeping reexamination of a wide range of issues related to what has come to be known as "homeland security." The key question I consider in the case study is whether and to what extent the attacks led to policy change as a result of learning, or whether change occurred without learning. The analysis is painted with a broad brush because the September 11 attacks had a profound influence on a wide range of policy issues.

The second case study is a more intensive examination of a key feature of the September 11 attacks: the failure of the aviation security system to prevent hijackings. The problems of the aviation security system were not unknown before September 11. At least once a week since 1995 the aviation industry confronted some breach or attempted breach of the passenger screening system. Passengers, most often inadvertently, were caught attempting to carry prohibited items such as knives, chemicals, and occasionally guns onto aircraft. But only two major security incidents gained widespread public attention and influenced policy before September 11, 2001. The first of these was the bombing of Pan Am Flight 103 over Scotland in 1988. The second, the destruction of TWA Flight 800 off Long Island, New York, in 1996, was initially attributed to a terrorist bombing because the airplane exploded in a manner eerily similar to that of Pan Am 103. Mechanical failure was eventually isolated as the cause, and the FAA recently has begun to require that aircraft be fitted with devices that will reduce the possibility of fuel tank explosions.

Then came the terrorist attacks of September 11, 2001, which could be disaggregated into four, or even nineteen, separate breaches that allowed nineteen terrorists to hijack four commercial airliners in domestic service. Two planes were crashed into the World Trade Center in New York, destroying it, one crashed into the Pentagon, severely damaging it, and one crashed into a field near Shanksburg, Pennsylvania, the result either of a passenger uprising or of confusion in the cockpit.

We can therefore say with some confidence that across the three policy domains there are at least nine opportunities for learning, although the TWA crash is a bit of an anomaly, since it was not caused by a terrorist attack. Yet this crash may be the most fascinating single case, because it led initially to the conclusion that aviation security required attention. The mounting evidence that the plane was lost because of mechanical failure may have short-circuited efforts to pass legislation or regulations designed to prevent terrorist attacks on aviation; instead, the focus was on aviation *safety* rather than security.

The third case study considers whether and to what extent learning occurs after earthquakes and hurricanes. It is not surprising that there are several opportunities for policy learning in both the earthquake and hurricane domains. Between 1988 and 2004 there were at least three major hurricanes that were widely publicized and led to some attention to the problem: Hugo in 1989, Andrew in 1992, and Floyd in 1999. During the same period, there were two very damaging earthquakes—the 1989 Loma Prieta and 1994 Northridge earthquakes—and one somewhat less damaging earthquake, the Nisqually. The Nisqually earthquake struck near Olympia, Washington, in early 2001, causing mainly superficial damage in the Seattle area and substantial structural damage to structures and buildings in Olympia.

Conclusions

Postdisaster policy learning is more than simply a matter of agenda setting. Whether it seeks something more tangible than "greater attention" to a problem is the question of interest here. From a normative perspective, citizens expect government and other officials to learn from disasters and to prevent repeat disasters, or at least to prevent repeat mistakes in the response to disasters. Failure to learn from experience is particularly embarrassing to members of government if the mistakes of the past are repeated. If the political system and broader social systems fail to learn from these events, the public can plausibly claim that these systems are dysfunctional. There is thus a considerable incentive to learn. At

the same time, policymakers must calculate the costs of learning against the likelihood that an event will recur on their watch. If another catastrophic hurricane, earthquake, or terrorist attack is not expected to happen during a policymaker's tenure, the benefits that would accrue from the considerable efforts involving in learning and improving policy performance will not benefit the policymaker in the near term. Furthermore, the costs of change can be considerable if they mobilize opposition to change.

The chapters that follow explore whether and to what extent the increased attention that follows disasters leads policymakers to define problems and adopt new policies to address them. The concluding chapter assesses the model of event-centered policy change introduced in this chapter and considers reasons why learning happens or fails to happen after major disasters. It also looks at how learning fades over time, as other issues clamor for attention and policymakers forget the lessons of the past.

two

september 11, learning, and policy change

One would presume that an event as well documented as the terrorist attacks of September 11, 2001, constituted a classic focusing event: The event was rare—in fact, almost unprecedented—deadly, and caught the government and the public by surprise. The changes that followed the September 11 attacks have created a sprawling policy domain, “homeland security,” that evolved from older notions of counterterrorism, national security, and emergency management.

Even the casual observer of public policy must know that September 11 did “change things”: The simple acts of boarding a commercial airliner or crossing the U.S.–Canadian border have changed considerably since September 11, 2001. A new agency, the Department of Homeland Security, was created, although the term “new” is certainly contestable, considering that the DHS brought together at least twenty-two existing agencies and functions into one large and, many claim, unwieldy bureaucracy.

But can these policy changes be attributed to some sort of learning process? Recall Busenberg's definition of learning as “a process in which individuals apply *new information and ideas* to policy decisions” (emphasis added), and my expansion of this definition to include the proposition that learning is cumulative and



SPEAKER BIOS

**NHSC Meeting
Portland, Oregon
July 31, 2018**

**Andrew Phelps, Director
Oregon Office of Emergency Management**

Phelps began his career in New York serving as a response team member of New York Search and Rescue and Rescue Team Chief for New York City's first FEMA-recognized Community Emergency Response Team. He left New York to manage the New Mexico Department of Homeland Security and Emergency Management's Local Preparedness Program. Prior to his arrival in Oregon, he was the Director of Emergency Management for the City of Santa Fe, New Mexico, where he was also served as a volunteer firefighter with the Santa Fe County Fire Department. He was hired as director for the Oregon Office of Emergency Management in February 2015.



Phelps graduated magna cum laude from John Jay College in New York City with a degree in Public Administration/Emergency Management and Planning. He received his Master of Arts from the Naval Postgraduate School's Center for Homeland Defense and Security in Monterey, California. His master's thesis, *Play Well With Others: Improvisational Theater and Collaboration in the Homeland Security Environment*, was published in September 2013. [[RETURN TO AGENDA](#)]

**Dr. Paula Maurer, Superintendent
Southwestern Consolidated School District of Shelby County (Indiana)**

Maurer is a certified School Safety Specialist, A.L.I.C.E. instructor, and has certification in Event Security Training. She has been a presenter at several national, state, and local events concerning school safety; and, she testified for the need for school safety standards before national and state legislators. She has been an educator for over 30 years and has led several schools, including her current district, to earn academic accolades and recognition at the state level. Maurer was raised in Bluffton, Indiana and received her undergraduate degree in elementary and special education from Manchester University. She



earned her Master's Degree from Indiana University at the IPFW campus where she also earned an endorsement in gifted education. After teaching for 15 years, she completed coursework at the University of Dayton to earn her administrative license and has since served as an administrator in Indiana and Ohio. Maurer earned her Education Specialist Degree from Indiana Wesleyan and completed her Doctorate at Oakland City University. [\[RETURN TO AGENDA\]](#)

**Dr. Yee San Su, Senior Research Scientist
CNA Institute for Public Research**



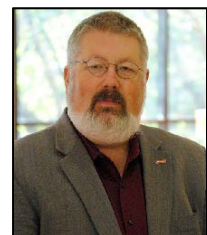
Since 2008, Yee San Su has been a senior researcher and project manager at CNA's Safety & Security Center. His work focuses on the intersection of risk, capability development, and preparedness investment and involves applying analytical methods and modeling frameworks to better assess homeland security preparedness at state, federal, and national levels. Su has supported assessments for legislative and executive branch stakeholders, including serving as the lead contractor for development of the 2015, 2016, and 2017 National Preparedness Reports. Prior to CNA, he spent two years as an American Association for the Advancement of Science (AAAS) Science & Technology Policy Fellow. Before being awarded this fellowship, Su was a technical consultant at Exponent, Inc., a leading engineering and scientific consulting firm. He has a Ph.D. in Chemical Engineering from M.I.T. and is a licensed Professional Engineer in the State of Illinois. [\[RETURN TO AGENDA\]](#)

**Dr. Daniel Kaniewski, Deputy Administrator for Resilience
Federal Emergency Management Agency (FEMA)**



As Deputy Administrator for Resilience, Kaniewski leads FEMA's insurance, mitigation, preparedness, continuity, and grant programs. He was confirmed by the U.S. Senate on September 14, 2017. Prior to joining FEMA, Kaniewski was Vice President for Global Resilience at AIR Worldwide and a Senior Fellow at the Center for Cyber & Homeland Security. Earlier, Kaniewski served as the Mission Area Director for Resilience and Emergency Preparedness/Response at a federally funded research and development center supporting DHS. He was also Vice President for Homeland Security and Deputy Director of the Homeland Security Policy Institute at the George Washington University. During the first Bush Administration, he served as Special Assistant to the President for Homeland Security and as Senior Director for Response Policy. Kaniewski holds a Bachelor of Science degree in Emergency Medical Services from George Washington University, a Master of Arts degree in National Security Studies from the Georgetown University School of Foreign Service, and a Ph.D. in Public Policy and Administration from George Washington University. [\[RETURN TO AGENDA\]](#)

**Thomas Birkland, Professor of Public Policy
Department of Public Administration
School of Public and International Affairs (SPIA), N.C. State University**



Birkland joined the NC State faculty in 2007 after 12 years on the faculty in the Nelson A. Rockefeller College of Public Affairs and Policy at the State University of

New York at Albany where he served as director of the Center for Policy Research from 2001-05. His research has centered on the politics of natural hazards and industrial accidents. Birkland attended the University of Oregon, earning his Bachelor's (cum laude) in political science. From there he attended Rutgers University's Eagleton Institute of Politics for his Master's in political science, focusing on public policy. He went on to work for the State of New Jersey, including roles in the office of Governor Kean and the New Jersey Department of Transportation. After five years of state employment, he returned to academia when accepted to the University of Washington, where he spent five years under the mentorship of Dr. Peter May. His dissertation became the policy book, *After Disaster*. [\[RETURN TO AGENDA\]](#)

Glen Woodbury, Director
Center for Homeland Defense and Security

Prior to taking over at CHDS, Woodbury served as the Director of the Emergency Management Division for the State of Washington from 1998 through 2004 where he directed the state's response to numerous emergencies, disasters and heightened security threat levels since his appointment by the Adjutant General and the Governor. He was the Director during the World Trade Organization disturbance in Seattle in 1999, the Nisqually Earthquake in February 2001, the TOPOFF II Exercise in 2003, the national response to the attacks of September 11th, and many other natural and manmade emergencies and disasters. He served as the emergency management representative to the Advanced National Seismic System Advisory Board, the Co-Chair of the Mitigation Committee, the interim Intergovernmental Relations Sub-Committee Chair to the developing National Homeland Security Consortium, and as Chairman of the Board of Directors for the Center for State Homeland Security. Woodbury served in the U.S. Army as a communications officer from 1985 until he began his emergency management career in the State of Washington as an operations officer in 1992. Prior to his selection as the agency's director, he managed the state's Emergency Operations Center for two years and served as a volunteer firefighter in East Olympia, WA. [\[RETURN TO AGENDA\]](#)

