Environmental Hazards

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Natural Hazard Mitigation Policy

Implementation, Organizational Choice, and Contextual Dynamics

Springer

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Springer

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This work was supported primarily by the Earthquake Engineering Research Centers Program of the National Science Foundation under NSF Award Number EEC-9701471 to the Multidisciplinary Center for Earthquake Engineering Research. Any opinions, findings and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect those of the National Science Foundation.

ISBN 978-94-007-2234-7 e-ISBN 978-94-007-2235-4
DOI 10.1007/978-94-007-2235-4
Springer Dordrecht Heidelberg London New York

Library of Congress Control Number: 2011939300

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Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

Natural Hazard Mitigation Policy

About the Series

Recent years have shown that all manner of disasters have become increasingly damaging, dangerous and complex. Recent examples include the 2004 South Asian tsunami, Hurricane Katrina in 2005, and the Sichuan earthquake of 2008.

Disasters like these have, for years, been understood as neither strictly man-made or strictly natural; most disasters are a complex blend physical forces and social organization. And some disasters, such as the Madrid bombings of 2004 and the London bombings of 2005, are man-made, but their effects are vast, with structural, social, and environmental ramifications that reverberate locally, nationally, and globally. We cannot explain the full complexity of these events using single-discipline approaches.

This series will therefore reflect and promote the increasingly interdisciplinary nature of hazards and disaster research. Its reach will be wide because hazards research is very broad, encompassing such varied fields of study as research on industrial accidents, research on public health, biosecurity issues and "homeland security", just to name a few. And its reach will include an wide array of facets because scholars from the social, natural, and behavioral sciences have concluded that we cannot fully understand hazards and disasters without an appreciation for the social, natural and man-made environments involved.

In addressing the technical, social and environmental issues of hazards and disasters, this series will include up-to-date, comprehensive texts on key hazards and disasters at the local, regional, national, and global levels. It will cover numerous issues critical to successful research and practice and will consider these issues through an international lens. And it will involve all fields connected to the study of hazards and natural disasters, including disciplines found within the natural sciences, physical sciences, social sciences, and engineering. The series' coverage will therefore be broad, but it will be centered on the interactions between society, technology, and the natural environment in the hazards and disasters field.

Proposals for this book series may be sent to the Series Editor, Thomas A. Birkland, Kretzer Professor of Public Policy, North Carolina State University, at tom_birkland@ncsu.edu or the Publishing Editor, Tamara Welschot, at Tamara.Welschot@springer.com

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Preface

This book is fundamentally about implementing public policy intended to mitigate the consequences stemming from hazardous events, particularly extreme natural hazard events. More than that, it focuses on the importance, when formulating public policy, of understanding the problem at hand in its various dimensions and from various perspectives, the importance of devising policies and programs based on an understanding of the likely consequences of implementing them, and the importance of taking steps to reduce the frequency and impact of adverse unanticipated consequences stemming from implementation.

Working together over the years, we have come to some basic, mutually shared conclusions. We have become convinced that, if one is to understand policy implementation, it is necessary to look beyond what government administrators do or do not do and the complexities of administration when many agencies at various levels of government are involved. One must look at the assumptions of cause and effect underlying the design of the policy itself, the anticipated responses of targeted populations, and the likelihood that things might not work out as anticipated. Years ago, we may have been surprised when things did not work out as expected; now, we are equally as surprised when things do work out as expected. It is essential to understand how the environment within which a policy is being administered affects the outcomes of attempting to administer the policy. Chance events confound policies based on relative certainty about "if we do this, then that will happen." The relevancy and the efficacy of policies change as the context within which they are promulgated changes. The relative long-term success of public policy design and implementation depends on the entire context within which the process takes place. As the context changes, so too must the policy. Rigidity in policy making and implementation limits the capacity of the affected system to achieve the initially desired outcomes in the face of dynamic contextual change.

In the case study that is the focus of this book, neither of the key stakeholder groups emerges clearly as the "good guy" or the "bad guy." Advocates of seismic safety sincerely believe that they are doing the right thing. Hospital administrators, charged with responding to what they call "an unfunded legislative mandate," also sincerely believe that they are doing the right thing. We have concluded that both are right in their perceptions of themselves, though perhaps not right in finding a mutually acceptable way forward. Our perception that both advocates and opponents are sincere has already caused some of our colleagues to tell us that we favor one side over the other. That simply isn't the case.

How can both sets of stakeholders be right? Two authors help us to understand this phenomenon. One of these authors, Harold Lasswell, a noted political scientist, observed that people are generally rational, but that they are typically rational to any one or any mix of different value bases. One person might be rational to the base "equity" while another person might be rational to the base "economic efficiency." When the two individuals look at a particular set of phenomena, they interpret the implications differently and, thus, hold different opinions concerning the phenomena. The second author is also a noted observer of human behavior. Kurt Vonnegut in a little known novel, "The Sirens of Titan," discusses a phenomenon of his own invention called the "chronosynclastic infundibulum." For Vonnegut, one of these phenomena exists between earth and Mars. It is a place in which the differences between completely opposite viewpoints concerning some matter are inherently resolved. In brief, two people can look at the same phenomenon, see it very differently, and both be right. The secret to progress is acknowledging this possibility, and then looking for a shared understanding that enables movement forward.

We have pointed out how important we perceive chance events to be in the course of events. This book itself is the outcome of chance events. Half a century ago, in the late 1960s, two of this book's authors, Dan Alesch and Bill Petak, along with Art Atkisson, became acquainted when they were at the School of Public Administration at the University of Southern California (USC). At the time, each was pursuing slightly different activities. Bill was heavily into public systems management, Art was heading an institute on urban ecology, and Dan was working on designing computer-driven information and decision support systems for local government applications. Bill became a member of the USC faculty in systems management and public administration, Art moved to the University of Houston, and Dan joined the Rand Corporation. About a decade later, Art and Dan found each other again in Green Bay, Wisconsin, where Art had accepted an offer to create a program in public and environmental administration at the brand new University of Wisconsin-Green Bay. Dan had moved to Green Bay for Rand to administer site operations for a large housing assistance experiment. Before long, the three were back working together on natural hazard concerns. Bill and Art were completing a major book, 'Natural Hazard Risk Assessment and Public Policy: Anticipating the Unexpected," and, as the Rand project wound down, Art had convinced Dan to join him on the faculty at UW-Green Bay.

Despite the subtitle of the book Bill and Art had published, we don't always anticipate the unexpected. Art, a very dear friend and colleague, died unexpectedly midway through an NSF-funded project he and Bill were conducting, having to do with mitigating the earthquake hazard associated with unreinforced masonry buildings. So, more than 30 years ago, Bill Petak and Dan Alesch undertook the completion of that project. The outcome of that effort was a book entitled "The Politics and Economics of Earthquake Hazard Mitigation." That book examined the decades of difficulty and frustration that the cities of Long Beach and Los Angeles experienced while trying to get owners to either enhance the seismic resistance of their unreinforced masonry buildings or to demolish them. We concluded that a primary reason it took so long and was so difficult to accomplish the goal was because the local governments failed to look at the problem from the perspective of the owners and to devise policies that would accommodate their basic needs, as well as those of the city governments. Ultimately, policymakers did just that and the problem of old unreinforced masonry buildings began to be greatly diminished.

Over the years, Bill and Dan continued to work together on projects related to natural hazards and mitigation. In the 1990s, Bill invited Dan to join him in conducting an analysis of implementation problems related to California legislation requiring that old hospital facilities in California be retrofitted to enhance seismic resistance, be replaced, or be removed from use as acute care facilities. Bill, while at USC, was a member of the Multidisciplinary Center for Earthquake Engineering Research (MCEER) research team working on projects initiated by an NSF-supported national earthquake center housed in the University at Buffalo, one of the SUNY campuses. A representative of the California Office of Statewide Health Planning and Development, Chris Tokas, served on MCEER's external board of advisors and suggested that MCEER conduct a study of the implementation of a new law, SB 1953, recently enacted by California to address pre-1973 acute care hospital facilities that did not meet contemporary standards for seismic resistance. MCEER agreed and Bill was selected to head the study. He subsequently asked Dan to work with him, and the project resulting in this book was born.

It didn't take very long in the analysis for them to understand that the decisions being made by the hospitals subject to the new public policy were critical to what was happening with program implementation. Fortunately for us and for the hazards field of study, when Dan approached Lucy Arendt about joining the research team, she agreed to do so. Lucy is an associate professor of management in the Cofrin School of Business at the University of Wisconsin-Green Bay with a focus on organizational behavior and decision making. She instantly became a full-fledged member of the team, bringing fresh eyes and important insights to the project. With Lucy becoming a full-fledged member of the team, with Dan a formally educated political economist, and Bill an engineer who moved on to public systems management, the combined efforts and approach to the study of SB 1953 policy implementation became very much an interdisciplinary effort.

The result of this long-standing collaboration is the book that you are about to read.

Acknowledgements

We are grateful to the hundreds of people with whom we have spoken on matters related to SB 1953 over the past decade on the condition of their anonymity: public officials, hospital owners and administrators, structural engineers, and professionals in related fields with an interest in the policy and its outcomes. We are grateful to scholars and practitioners who read early drafts of our material and commented on them with considerable perspicacity. We extend our special thanks to J. and B., William Anderson, and Peter May.

This work was supported in large part by the Earthquake Engineering Research Centers Program of the National Science Foundation under NSF Award Number EEC-9701471 to the Multidisciplinary Center for Earthquake Engineering Research (MCEER). The Center, with NSF funds, supported a very considerable proportion of our field research and early reports. Without the financial support from NSF and MCEER, this research could not have been conducted. We are particularly appreciative to the management and staff of MCEER who supported our work, including Michel Bruneau, Andre Filiatrault, George Lee, Jane Stoyle Welch, Sofia A. Tangalos, and all the members of the current and past support staff. Any opinions, findings and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect those of either the National Science Foundation or MCEER.

Last, but certainly not least, we extend our deepest appreciation to our respective spouses and families for their support over the decade or so during which this activity has had us travelling across California, the West Coast and the Gulf Coast, sitting at a computer or in a chair reading for hours on end while oblivious to most other things, and rambling on almost endlessly at inappropriate times about matters relating to the nexus of public policy formation and implementation, organizational decision making, earthquakes, and hospitals.

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Chapter 1
The Starting Point: A Confluence of Questions About Policy Design and Implementation

1.1 The Problem

Few things are as simple as they first appear.

The consequences of natural hazard events are large, pervasive, expensive, and growing. At the same time, implementing public regulatory policy to reduce the consequences of those events is rarely as straightforward or as successful as one might think. Neither the consequences of natural hazard events nor the continuing problems associated with implementing public policies to reduce those consequences is a trivial matter. This book focuses on gaining a greater understanding of public policy implementation, particularly as it applies to regulatory policy aimed at reducing the likely consequences of natural hazard events.

Newcomers to government often assume that a policy, once adopted, will be implemented faithfully in accord with the policymakers' intent and have the desired results. An increasingly rich body of research confirms what old hands already know: That is simply not the case.

Policies usually, either implicitly or explicitly, identify at least the general means by which they are to be implemented. When the agency that is specified in a policy directive begins to design the program and outline the regulations that define the policy in operational terms, implementation begins in earnest. This period can easily involve as much political interplay as did the process of enacting the legislation. Practitioners and scholars alike have come to understand that policy adoption is simply one milestone in an ongoing process of policy development. Calista's (1994) assessment is that the field of study has evolved from one of viewing implementation as simply the process of carrying out policy directives to one where implementation is now integral to the field of policy intervention, including recognizing its influence on policy formulation.

The reality is that policy may or may not be implemented as envisaged by those who put the policy in place. During implementation, policy may be altered or adapted either intentionally or inadvertently. The extent to which a policy leads to

D.J. Alesch et al., *Natural Hazard Mitigation Policy: Implementation, Organizational Choice, and Contextual Dynamics*, Environmental Hazards,
DOI 10.1007/978-94-007-2235-4_1, © Springer Science+Business Media B.V. 2012

the intended outcomes depends on many variables, only some of which may be controlled by policy makers. Moreover, policies often have significant, unanticipated consequences during implementation that may need to be addressed in order to move forward. Again, few things are as simple as they appear.

Multiple stakeholders, with varying perspectives, over time, and with differential access to information and resources – all tend to add complexity to what might seem to be straightforward and even simple prescriptions, goals, and preferred actions. Case in point: One might say that hospitals and other critical buildings like schools should remain standing and functional after an earthquake. Hospital patients and workers, schoolchildren and teachers – all should feel safe when faced with a natural hazard event such as an earthquake. Setting these simple statements aside, the reality of making them happen is complicated, and the path to goal achievement is seldom obvious. Different stakeholders interpret goal statements differently, have different values, change their views over time, and may or may not have the information and resources to achieve goals, regardless of the support those goals may have engendered.

This book explores the case of a state government regulatory effort to strengthen California's inventory of acute care hospital buildings against earthquakes. The effort is known as SB 1953. The case is a story of well-meaning seismic safety advocates attempting to require equally well-intentioned hospital owners and operators to retrofit acute care facilities built before 1973 to meet contemporary seismic standards, to replace them, or to remove them from service. The case is fraught with complexity. Nothing is simple. Neither the independent elements, nor the interdependent relationships, are easily understood.

1.2 Hazard Policy Implementation: Not a Trivial Concern

The consequences of natural and manmade hazard events are anything but trivial. Worldwide in 2010, for example, nearly 260,000 people perished in natural and man-made disasters, insured losses for the global insurance industry were more than $36 billion, and direct economic losses were in excess of $222 billion (Greil 2010). Each year, massive amounts of uninsured losses are borne by property owners, including extraordinary and uncounted costs of persistent community economic and social consequences stemming from the event. Perhaps even more importantly, the people affected have to bear the extraordinary emotional and psychological costs of being displaced from their homes or communities, from injury and death to loved ones, and from having their hopes and dreams shattered.

The problem isn't going away. Direct losses from hazard events and the consequences that cascade in their aftermath are astonishingly high now, and they are growing, as the most rapid population growth in the United States is taking place in locations that are inherently dangerous and as people and organizations fail to take adequate precautions. Despite the extraordinary social and economic costs of hazard events, Americans expend relatively little money and effort to reduce the likely consequences of hazards on themselves, those they love, and their organizations.

One could argue that we are optimists who believe that bad things won't happen or that we'll be able to repair whatever damage occurs. Or, one could say that we expect the government (local, state, and federal) to "make us whole" if we suffer losses. Perhaps we see that as our due as taxpayers. Or, one could say that we live in the moment, and prefer not to dwell on possible future outcomes. No matter what one says, it's clear that Americans are often ill prepared for hazard events and their consequences, especially outlier or extreme events that may include two or more disasters. A good example of an extreme event occurred in 2005, when Hurricane Katrina struck New Orleans, Louisiana. While the hurricane itself caused relatively little damage to the built environment, the flooding that swamped 80% of New Orleans in the aftermath of Katrina was devastating to not only the built environment, but also to the natural, social, and economic environments of New Orleans. Nearly 6 years later, New Orleans is still not recovered.

In addition to the costs incurred because of hazard events at home, Americans contribute massive amounts of money and material to those who suffer in disasters in other nations. Uncounted amounts of assistance flowed from the United States to those who suffered from the massive 2004 Indian Ocean Tsunami that killed almost 300,000 people, the devastating Haitian and Chilean earthquakes in 2010, and the tragic earthquake and tsunami that wreaked havoc on the northeast coast of Japan in early 2011. United States citizens are willing to help in the face of disaster, and we are supported in these efforts through tax credits and other mechanisms.

Scientists have sufficient understanding and engineers have sufficient technology to enable us to reduce substantially injuries and loss of life as well as damage to the built environment from most of the disasters experienced in the United States each year. That is not to say that we have the ability to protect ourselves completely from truly rare and devastating events such as Earth's collision with a large asteroid some 65 million years ago, the volcanic eruption that buried Pompeii and Herculaneum in 79, the 2004 Indian Ocean Tsunami, the Richter 8.8 earthquake in Chile in 2010, or the Richter 9.0 earthquake in Japan in 2011. We have the technical means, however, to reduce losses substantially from the most frequent and typical hurricanes, floods, earthquakes, tornadoes, winter storms, and other hazardous events we experience. We also have the technology to reduce the consequences of terrorist attacks from domestic and foreign interests.

In response to what they perceive to be inadequate preparations, advocates for enhanced safety from hazard events continue to work hard to get legislative bodies to adopt hazard mitigation policies into law and, then, convert them into programs that are intended to induce individuals and organizations to take additional precautions. These policies are not advocated by "busybody do-gooders" who want to dictate the personal behavior of others. Typically, advocates for hazard mitigation hold that, when private action or inaction creates considerable potential for losses not only to knowing risk takers, but also to the community at large, government has the right and, indeed, the obligation to take action in an attempt to alter that risky behavior. Consequently, governments have enacted policies to regulate land use, building construction, traffic and driving, and a host of other matters. History shows, however, that good intentions do not always result in good legislation, nor does good legislation always result in

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