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## The Privatization of Hazard Mitigation: A Case Study of the Creation and Implementation of a Federal Program

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The Privatization of Hazard Mitigation: A Case Study of the Creation and Implementation of a  
Federal Program

A Dissertation

Submitted to the Graduate Faculty of the  
University of New Orleans  
in partial fulfillment of the  
requirements for the degree of

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in  
Urban Studies

By

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**Dedication**

This dissertation is dedicated to my daughter, Catalina Marie Jerolleman.

## **Acknowledgment**

I have been incredibly fortunate to have so many wonderful mentors, colleagues, friends, and family who have supported me throughout this endeavor. In particular, I would like to acknowledge my advisor and friend, Dr. Shirley Laska for her continuous support and guidance. I would also like to acknowledge all of my committee members (Dr. John Kiefer, Dr. Monica Farris, Dr. Vern Baxter, and Dr. David Gladstone) for their endless guidance and patience throughout this process. Thank you for pushing me to improve and grow through this process.

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## **Abstract**

This dissertation explores the role of the private and public sectors in hazard mitigation, an important part of the Federal Emergency Management Agency's (FEMA's) performance requirements from the Stafford Act. Hazard mitigation is the effort to reduce societal impacts from natural disasters by reducing their risk to people, property and infrastructure; before hazards occur. The goal of the work is to contribute to the literature examining the national trend towards privatization and reliance on the free market economy for the provision of government social services, through such public management movements as the "New Public Management" (NPM) of the 1980s and the general efficiency movement that encompasses a greater market orientation in public government and an increase in the use of private sector contractors as an alternative to public provision (Boston 1996).

The primary question which this dissertation seeks to answer is: How has the provision of hazard mitigation services by the private sector come to be the norm and what have been the consequences. Due to the broad nature of the question and the lack of previous research, this dissertation will utilize a mixed methods approach with the goal of gaining a broad understanding of the privatization of the hazard mitigation sector in its various manifestations. The approach consists of one case study, broken down into two time periods: hazard mitigation prior to the passage of the Disaster Mitigation Act of 2000, and hazard mitigation following the Disaster Mitigation Act of 2000. The case study is based primarily upon a series of interviews and includes several imbedded cases. They will be contextualized within an overall description of hazard mitigation focusing on the history and the context of the relevant federal legislation.

## **Keywords**

hazard mitigation; disasters; contracting; privatization; recovery

## **Chapter 1: Introduction**

Institutionalized federal involvement in natural disasters has grown significantly since the 1930s and has been manifest in a great deal of complex regulations regarding both disaster recovery and hazard mitigation (efforts to reduce impacts from natural disasters). Local communities have come to rely on the federal government to fund almost all mitigation activities that have emerged from these regulations, and by making compliance the basis for receiving federal recovery funds, these communities have in fact been encouraged to comply with the regulations solely for the purpose of receiving the funds. The reliance on the federal government to fund risk reduction is a trend that will only worsen as budget cuts continue to reduce local capacity to function within these complex regulations without receiving assistance from the level of government that requires the activities. As a result of the overwhelming amount of technical and administrative requirements tied to federal mitigation funding, many communities turn to private sector specialists for assistance in meeting these requirements (Farris & Jerolleman, 2012). Two significant activities in which the private sector is involved are the administration of the local mitigation grants and hazard mitigation planning.

This dissertation explores the role of the private sector in hazard mitigation, an important part of the Federal Emergency Management Agency's (FEMA's) performance requirements from the Stafford Act, the details of which will be described below. Hazard mitigation is the effort to reduce societal impacts from natural disasters by reducing risk to people, to property and to infrastructure—before disasters occur. The goal of this work, through an analysis of privatization in risk reduction and hazard mitigation work, is to contribute to the literature that examines the national trend towards privatization and towards the reliance on the free market economy for the provision of government social services. Although hazard mitigation is not

considered a traditional social service, it contains many of the characteristics of a social service as defined within public administration<sup>1</sup>.

### *Overview of Hazard Mitigation*

Disaster mitigation activities in the United States are primarily funded by the federal government through both grant funds made available immediately following natural disasters and through yearly grant programs. Local governments may choose to provide mitigation funds at any given time, and individuals may elect to undertake self-protective behavior, but they ordinarily do not (Kunreuther, 2006). As a result of the Disaster Mitigation Act of 2000 (DMA 2000), one of the prerequisites for local governments receiving federal aid when a disaster strikes is that they have a written hazard mitigation plan in place. Local governments often use contractors for this work due to a lack of local resources (manpower or expertise), particularly after a disaster when local expertise is in short supply. Data from a recent study of mitigation plans in California show that at least 50% of local hazard mitigation plans involve the use of consultants (Schwab, 2010).

Another mitigation domain where private sector contractors are heavily involved is in the immediate aftermath of a large natural disaster, when an impacted state is faced with the need to significantly increase staffing levels of their Homeland Security and Emergency Preparedness departments<sup>2</sup> in order to manage the recovery process. States often use private contractors to administer hazard mitigation efforts and recovery activities such as 1) supplying the large amount of manpower needed to take care of the Public Assistance process; 2) making disaster payments to the affected area to rebuild the public infrastructure; and 3) providing technical

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<sup>1</sup> Hazard mitigation grants require case management, direct interaction with the public, and have an impact on the housing situations and safety of residents.

<sup>2</sup> Some states, such as Louisiana, may elect to establish Recovery Authorities, but the vast majority of mitigation funds available during recovery flow through FEMA and therefore homeland security agencies. The second most commonly used funding source flows through HUD.



support to affected counties in order to take advantage of the mitigation opportunities available within this public rebuilding process (Respondent 25).

### *Research Questions*

The primary question which I want to address through my research is this: *How has the provision of hazard mitigation services by the private sector come to be the norm, and how has it evolved over time?* To answer this question it will be necessary to look at the historical context of hazard mitigation in the United States as well as at the time period in which it became a formalized activity. This will include looking at both continual hazard mitigation planning and at disaster events to see how the roles of the private sector, of government, and of individuals have changed over time. It will be also be necessary to 1) analyze the growing use of disaster contractors and mitigation planners within the context of the technical requirements, and 2) the general trend toward privatization of government services. Chapter 2 will provide the theoretical framework for this analysis, while Chapters 4 and 5 focus on the wide range of actors involved as well as on the evolution and implementation of the programs.

The second question that this research will address is this: *What have been the consequences and outcomes of privatization, including their effects on accountability and on inclusivity<sup>3</sup> of service provision?*

- *Can government-sponsored hazard mitigation be effectively supported by private sector contractors working for the respective government agencies that manage and implement mitigation?*
- *Is this an appropriate public activity to be assigned to the market, or is the use of the private sector by government inherently destined to fail to achieve the public objectives?*

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<sup>3</sup> This question looks at the extent to which privatization of hazard mitigation has influenced the ways in which services are available to all sectors of the population, including those for whom service delivery is more challenging.

- *Or, is the core underlying premise of federal hazard mitigation policy—development of local government institutionalized capacity—too much at odds with the business plans needed to make a profit by which private firms must live?*

Answers to these questions will be sought in an examination of outcomes of hazard mitigation efforts. The existing privatization literature enables one to consider when privatization may or may not be appropriate. To evaluate the potential challenges of the privatization of hazard mitigation as shown by the literature, I will illustrate the ways in which hazard mitigation fits into those parameters. Chapter 7 will focus on the findings relative to these questions.

#### *Definitions of Hazard Mitigation*

In order to discuss hazard mitigation as an activity and as a business sector, it is necessary to spend some time looking at the range of definitions that are currently available. The particular components of these definitions, which are emphasized by particular programs or actors, have an impact on the outcomes of the activities. Neither the Stafford Act nor DMA 2000 provide a distinct definition for hazard mitigation. For the purposes of this dissertation, hazard mitigation is defined as the effort to reduce personal, societal, and governmental impacts from natural disasters by reducing the risk to people, to property and to infrastructure before hazards occur. However, it is useful to begin with a broader look at the different definitions within the literature of natural hazard mitigation. These definitions share certain characteristics but are sufficiently diverse as to direct academic inquiry and policy action in multiple directions. In particular, only some of the definitions consider the social elements of mitigation while other definitions focus solely on changes to physical structures. All definitions begin with the premise that mitigation constitutes an action that leads to risk reduction. However, this action, which can be voluntary

or required, can take on many different forms and can be carried out by a variety of agents. The government and individual roles in hazard mitigation vary by the definition used.

According to the Federal Emergency Management Agency (FEMA), whose definition is primarily applicable for grant-making purposes, hazard mitigation involves a “sustained action taken to reduce or eliminate long-term risk to human life and property from natural hazards” (PDM, 2006, p. 1). This particular conceptualization leads to an understanding of mitigation as an ongoing process. Mileti’s (1999) discussion of sustainable hazard mitigation also assumes a process, one that consists of policies and activities.

Godschalk et al. (1999) describe mitigation in terms of an action taken prior to a disaster, implying that mitigation is finite and must occur at a particular point in time, i.e., prior to the occurrence of a natural hazard. This definition emphasizes the ideal timing for best protection and purposefully de-emphasizes the greatest “window of opportunity” for mitigation that is opened by the occurrence of a disaster (Godschalk et al., 1999). Other definitions are much broader, calling for any action (Interagency, 1994). Furthermore, various states also provide their interpretations of the federal definition of mitigation. For example, in Pennsylvania, mitigation is explained as follows: “Hazard mitigation means reducing, eliminating, redirecting, or avoiding the effects of ... hazards” (PA, 2012).

The wide range of definitions of hazard mitigation suggests that there is a great deal of complexity involved in this activity. There is much that is unique about natural hazard mitigation in the U. S. as compared to other types of services that are typically considered in the privatization literature, such as wholesale take-over of prisons and schools. The characteristics of mitigation influence the way in which the private sector’s involvement has evolved. Prior to federal involvement in mitigation, there were a few state-level efforts in place, some utilizing

private and academic partners, but overall, early hazard mitigation consisted of activities that certain landowners (and later homeowners) undertook of their own initiatives. For example, landowners constructed many of the original levees in the United States. In other words, the levees were privately built (Colten, 2005). Owners have mitigated risks to their homes over time, and some literature exists on this effort (Laska, 1991). Hazard mitigation had its genesis as a federally funded activity at a time of increasing privatization of government activities, a movement that gained strength in the United States in the 1980s and that was carried over through the 1990s and beyond (Henig, 1989–1990). An outcome of this timing is that hazard mitigation may be the only federally required activity that is a government activity designed largely by the private sector for almost complete private sector implementation<sup>4</sup>.

#### *Characteristics of Private Sector*

The characteristics of private sector implementation of disaster mitigation also influence the outcomes of the mitigation efforts and are complex. There is a wide range of private sector entities involved in hazard mitigation, ranging from individuals who work as consultants and are usually involved in local mitigation planning to the national and global firms that work at the state or federal level. In between these two extremes are small- to medium-sized firms that become active in mitigation following a disaster or through the natural course of business expansion and are able to develop a professional reputation for themselves locally. These firms may be primarily engineering, planning or GIS firms that have developed a disaster response/recovery specialization and that have added specialists in the other areas as needed. Just as the range of private firms is complex, interactions between various private sector entities and various levels of government are also quite varied. There are a number of possible

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<sup>4</sup> The literature does not appear to contain references to any similar scenarios in the creation and implementation of other federal programs.

scenarios, ranging from a small firm working one-on-one with a local government, to a large firm under contract to the federal government to administer grants at the state level, to a medium-sized firm under hire, to a large firm contracted to coordinate Public Assistance (a federal program which provides funds for repairing damaged public facilities) efforts at the local level. The wide range of possible combinations and the range of effects that these have are discussed in Chapter 5. For example, large national firms are far more likely to be involved with federal mitigation efforts and far less likely to pursue the much smaller contracts available for local planning in small jurisdictions.

### *Uniqueness of Hazard Mitigation*

Hazard mitigation is currently a public activity that is largely funded by public dollars, but it has never been implemented solely by the government and is not structured in a way that would make total public implementation feasible in most communities. This makes it a unique industry to study through the lens of privatization, because the majority of privatization studies look at the transfer of activities from the purview of the government to the private sector. It is important to consider, as the private implementation dynamics of hazard mitigation are studied, why the federal government might have been attracted to a private implementation model. One reason may be that the demand cycle for mitigation services occurs in peaks and valleys: Post-disaster hazard mitigation is in strong demand immediately following a disaster and for some period thereafter, depending upon the magnitude of the event, but then the demand for services in an impacted geographic region tapers off. Similarly, there is an uneven cycle for hazard mitigation planning, which occurs in three and five year cycles at the state and local levels, because that is the rhythm of required mitigation plan revisions. Therefore, there is never a consistent demand level. It may be that the private sector can respond to this peak and ebb

demand cycle better than the government can. The peaks can be quite significant, as was the case with the hazard mitigation funding opportunities made available in 2005 following Hurricane Katrina, and can serve to overwhelm local capacity and to draw a great number of private actors to the enterprise. My research will explore this question by analyzing the ways in which the privatization came about as a result of a combination of the factors described above, as well as the ongoing efforts by the private sector to seek profitable opportunities.

### *Organization of the Dissertation*

Chapters 2 and 3 illustrate the process of the research, consisting of the review of existing literature and the research methodology. Chapters 4 and 5 provide background of the history of federal involvement in hazard mitigation up until the present time, including a discussion about the complexity of relationships among actors involved in hazard mitigation and a discussion about the evolution and implementation of mitigation programs. Chapter 6 will focus on the findings, relative to the two questions, that guide the research. The final chapter is the conclusion and recommendations to be made from the findings of this dissertation.

### *Significance*

The role of the private sector in hazard mitigation has increased over the past few decades, particularly within the context of disaster recovery. There is no indication that its role will diminish, particularly as government budgets continue to be cut, further reducing local capacity. Given this trend, it has become necessary to more completely understand the effects of this historically and currently significant role. This research will contribute to such an understanding and can serve as the foundation for future research into the effects of increased privatization on disaster resilience and future losses. Such an understanding will allow government officials to make more informed decisions regarding the use of contractors. It will also allow contractors to

find ways to maximize profits while providing a high level of services to the communities that they serve.

## Chapter 2: Literature Review

As described in Chapter 1, the use of the private sector for the provision of hazard mitigation has been prevalent, dating back to the creation of the related federal policies. However, there has been very little research done that specifically concerns the role of the private sector in hazard mitigation. There are several bodies of research that can be brought together to bear on the subject and to begin to lay out the context for the two primary questions of this dissertation. These bodies of knowledge include 1) the literature on privatization in general, in particular the literature that discusses the various typologies related to privatization; 2) the literature on program implementation and evaluation; 3) the literature on natural disasters and hazard mitigation, including a relatively newer literature relating to disaster recovery and privatization; 4) an emerging literature in Public Administration that deals specifically with the practice of government contracting; and 5) recent research on the current state of hazard mitigation planning. This chapter is organized along the two primary research questions and illustrates the ways in which these literatures have been used to derive the research questions. The first question is *How did privatization come to be the norm for hazard mitigation?* The literatures on privatization, on hazard mitigation, and on contracting are relevant to that question. The second question, *What are the outcomes of privatization, including the effects on accountability and equity considerations?*, draws upon all five bodies of literature. In addition to the literature cited for the research questions described above, the interviews and preliminary findings revealed some further areas of inquiry that were pursued in the literature. These are described in a brief section at the end of this chapter.



*Q1: How did privatization come to be the norm for hazard mitigation?*

Although as a service mitigation has never been formally privatized<sup>5</sup> (i.e., the entire service has not been sold to a corporate entity<sup>6</sup>) there is much in the literature on privatization that can be used to explore this question. There is an extensive body of literature in the fields of public administration and political science that has looked at the privatization of government services in general and that has focused on particular contexts such as those that involve schools and prisons. This literature, which serves as a starting point for this analysis, includes works by Craig Calhoun (2006), John Chamberlin (1987), John Jackson (1987), Robert Denhart (2003), Joseph Grubbs (2003), Harvey Feigenbaum (1994), Jeffrey Henig (1994), Jane Franklin (1998), Anthony Giddens (1998), William Gormley (2004), Steven Balla (2004), Andrew Healy (2008), Neil Malhotra (2008), Hugh Heclo (1978), Michael Lipsky (1980), Ronald Moe (1987), Laurence O'Toole (1999), Michale Trebilcock (2003), and Edward Iacobucci (2003) among others. These works, although not specifically focused on mitigation, provide a historical context for the time period when privatization advanced within the realm of hazard mitigation and disaster recovery. The literature has focused heavily on the “make-or buy-decision”, more specifically on the decision of whether to perform a service or to purchase it. This includes extensive discussion on the strengths, weaknesses, and dangers of increasing private involvement in activities that are under the purviews and responsibilities of local, state, and/or national governments.

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<sup>5</sup> Savas (1987) defined privatization as: “...the act of reducing the role of government, or increasing the role of the private sector, in an activity.” Under this definition hazard mitigation could be said to be privatized.

<sup>6</sup> In hazard mitigation planning, just one component of hazard mitigation, the vast majority of local and state plans are written with the use of a consultant (Respondent 25).

### *Literature on Privatization*

The discussion of privatization has a long history within the fields of political science and public administration. In fact, the field of public administration was born out of a desire to understand how the business of governing differed from that of private business. The earliest literature deals with the question of whether some government services ought to be provided by the private sector and with the question of how to determine which sector—public or private—is best suited to serve the public. The federal government itself has provided guidance on when it is appropriate to use the private sector. As an example, Budget Bulletin No. 55-4 (BB 1995) indicates that federal policy is to not produce products or to provide services that are available from the private sector. This guidance, from 1995, indicates the existence of a political and government climate favorable to private provision of services. However, Part 7.5 of the Federal Acquisition Regulations indicates that activities that “significantly affect the life, liberty, or property of private persons” ought not to be contracted out. This guidance provides a clear test for the make-or-buy decision, but it does not appear to have been applied to the creation and implementation of mitigation programs. Even outside of hazard mitigation, which can impact life, safety and property, privatization of prisons or police departments would appear to go against this guidance.

In the case of hazard mitigation, at the time in which the federal programs were being developed, it appears there was an assumption (as evidenced by the lack of attention to the make-or-buy decision) that privatization would be the best, or possibly the only, option. Several things led to the decision to use the private sector: 1) the strong ideological preference for privatization at that time period (Cohen & Eimicke, 2008); 2) the existence of firms that had relationships with FEMA and that were well positioned to add another product line; 3) the concern that risk assessments were too complicated for most communities. Considering the existing climate,

primarily the New Public Management (NPM)<sup>7</sup> movement that was taking place in the United States at the time of the creation of hazard mitigation policy and activities, it is not surprising that the private sector played such a key role. Furthermore, once private firms were hired to draft the programmatic guidance, they operated from the assumption that the local implementation would involve similar (or sometimes the same) firms. This reliance on private sector expertise and on labor by bureaucrats is currently seen at both the federal and local levels (Cohen & Eimicke, 2008), with the federal government currently using more contractors than at any time in history (Breul, 2010). It is therefore not surprising that so little attention was paid to the make-or buy-decision.

The United States has a long history of growing corporate power, dating back to the period immediately following the civil war, in which emerging national industries were successful in utilizing the 13<sup>th</sup> and 14<sup>th</sup> amendments to establish themselves as legal persons (Reid & Taylor, 2010). This granted corporations greatly expanded powers, and reduced liability, all assisting with the creation of the multi-national firms in existence today. The structure of the United States Government, with such different authorities at the local, state and federal levels, also served to allow corporations to grow in their power and influence. All of this impacted the eventual push towards privatization of government functions. Additionally, when it came to discussions regarding planning as a component of hazard mitigation, there were existing interest groups as far back as 1932 looking at public planning as a route to profits (Fischer, 2005).

Savas (1987) describes various pressures for privatization across government programs, including the search for more cost-effective services, ideological bent, the desire to enrich

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<sup>7</sup> NPM emerged in the 1980s in response to the high, public expenditures that had characterized the 1980s and grew in momentum through the fiscal crisis of the 1980s and 1990s. Although NPM does not specifically call for privatization, privatization is seen as clearly meeting the efficiency objectives of the NPM (Foster & Plowden, 1996).

corporations, and the desire for less bureaucracy. These various pressures were all present at the time in which hazard mitigation programs were created.

It is possible, however, to identify clear criteria within the literature related to whether a practice should be privatized and to consider these criteria when evaluating how hazard mitigation falls within the typology created by the various authors who address the make-or-buy decision. These criteria are illustrated in Table 1 on page 13. One example of these criteria is John Chamberlin and John Jackson's 1987 article on privatization, which provides an analysis of the appropriate time for public institutions to pursue the privatization approach. They create a clear dichotomy between a situation in which privatization is appropriate (frequent purchases, abundant information, active competition, and low cost of mistakes) and a situation in which there are collective interests<sup>8</sup>, distributional goals<sup>9</sup>, and the presence of natural monopolies – making public provision is the best option. Chamberlin & Jackson's work, however, fails to clearly address what should be done with services or goods that have characteristics which do not clearly put them into one of the two groupings. I propose that this is the case with hazard mitigation. It is unclear to which 'provider'—public or private—the function should be assigned.

Based upon the elements which Chamberlin and Jackson suggest make privatization appropriate, hazard mitigation is not necessarily a good fit. Communities do not make *frequent purchases*, because hazard mitigation planning occurs only every five years at the county level and because projects typically occur after a disaster (Godschalk, 1999). Given the technical nature of data analysis for many hazards and the lack of knowledge at the local level regarding the technical aspects of hazard mitigation, *abundant information* is also lacking. *Competition*

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<sup>8</sup> Collective interests refer to the need to consider not just individual needs but those of society as a whole.

<sup>9</sup> Distributional goals refer to the need to ensure fairness in distribution of a good or service.

can sometimes be in place, but more often than not, a very small range of firms is involved. Finally, *mistakes* can carry high costs because what is at stake is a community's resilience. Thus, the typology suggests that privatization of mitigation would be considered highly risky. Several other authors observe the challenges of privatization for services in which there is insufficient information or no clear way for the purchaser to select between options. If hazard mitigation fits these criteria, then it may be a service that ought not to be privatized. Hazard mitigation is a specialized activity, making it nearly impossible for a local-government purchaser to judge the product it is receiving or for it to select between providers, especially during the creation of the first plan done by the community and in the first few subsequent revisions of that plan. Hazard mitigation by this quality may create a market failure<sup>10</sup>, as will be described below. This research will show the extent to which these criteria were or were not considered in the creation of federal hazard mitigation programs. It will also discuss the resulting outcomes in terms of equity, quality of mitigation, and other criteria. Although the following criteria are related to the make-or-buy-decision, the literature also speaks to the potential outcomes, which are further discussed in question two.

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<sup>10</sup> Market failure takes place when the free market cannot efficiently allocate goods and services.

Table 1

*Criteria for Privatization Decision*

Criteria <sup>11</sup>	Private Provision Recommended	Public Provision Recommended	Application to Hazard Mitigation
Frequent Purchases		X	Most communities do not frequently purchase hazard mitigation services. Hazard mitigation plan updates take place every five years at the local levels, and major disasters can be infrequent.
Abundant Information		X	Hazard mitigation has many technical requirements and is not always fully understood by communities. Those at the local level making the contracting decisions cannot easily evaluate the private sector firms.
Active Competition	X	X	The amount of competition varies by the location and size of the community needing hazard mitigation services. Large communities, or states with substantial amounts of money available, may see significant competition. Smaller communities may struggle to receive any bids at all. Additionally, there is a small group of firms that consistently obtains the majority of the larger federal contracts – all of which frequently work together. <b>There is too much variability in hazard mitigation for these criteria to be fully evaluated.</b>
Low cost of mistakes		X	Hazard mitigation decisions have a great deal to do with the health and safety of residents, as well as with continuity of government, and economic vitality. As a result, the consequences of mistakes can be quite high.
Collective interests		X	Hazard mitigation decisions have to do with the whole community, and must take into account the needs of society as a whole.
Distributional goals		X	Hazard mitigation efforts must strive to ensure that all stakeholders are included and given a voice.

As Table 1 indicates, the criteria provided within the literature would not support the use of the private sector for the provision of hazard mitigation. Yet, many authors argue that the private sector is inherently better suited to the provision of some services (perhaps mitigation) despite

<sup>11</sup> Chamberlin & Jackson, 1987

these concerns and that the private sector is more efficient and is better able to mobilize resources (Foster & Plowden, 1996), (Trebilcock & Iacobucci, 2003) regardless of the concerns mentioned by Chamberlin and Jackson. In fact, it is argued that as government budgets continue to be reduced, the private sector may have a much greater capacity than the public sector to provide good quality services (Frederickson & Frederickson, 2007). In the case of hazard mitigation, it is not clear that the public sector could provide these services without private assistance, due to the costs, to the infrequent need for the expertise, and to the technical nature of the service.

The notion of market failure is worth revisiting. As Bozeman (2007) points out, market failure theory states that the market is the best tool unless there is a monopoly or a lack of information to customers. Warner (2010) has predicted that the lack of competition in local government service markets will actually lead to a reversal of the privatization process. When the characteristics are present for market failure to take place, the inherent regulatory functions of the market, which are typically considered to be the best and most efficient providers of quality goods, do not operate. If this is the case, then the use of the private sector to ensure that a service is provided by the most efficient means possible is not feasible. It is worth examining whether hazard mitigation fits these criteria. Given the relatively small number of major firms involved and given the challenges of judging the quality of services provided or of electing between consultants, it would appear that hazard mitigation is an industry in which market failure is taking place and that the market is not able to ensure that the best quality services are provided. If this is indeed the case, then one of the major arguments in favor of privatization, that of increased efficiency and quality through the market, does not hold true for hazard mitigation. In

order to understand the impacts of the effective privatization of hazard mitigation, this research will explore the extent to which market failure is or is not taking place.

Another cause of market failure listed by Bozeman is the concept of externalities, such as when benefits are provided to persons who do not pay for the goods or when costs are taken on by society as a whole for the decisions of a minority, such as construction in unsafe areas. In a sense, public services such as hazard mitigation do just that. The current mechanisms for disaster recovery, including the hazard mitigation component, provide assistance to those who have experienced damages, even if those damages were preventable and were the result of poor decisions. In other words, the costs of bad decisions by one community are born by national taxpayers in general. Additionally, the benefits of mitigation planning and projects accrue to the community as a whole regardless of who pays for the services or participates in the process. If it is the case that market failure is indeed occurring and that hazard mitigation does not meet the criteria in the literature for privatizing a service, then the question must be raised as to whether hazard mitigation ought to be provided by the public sector. As previously mentioned, this conclusion might have to be tempered by the potential inability of the public sector to provide these services, regardless of who ought to be providing them. The conundrum of mitigation appears to be that even if it is a service that should not be privatized, the public sector may not be able to otherwise provide it.

Returning to the question of whether hazard mitigation is a service that meets the criteria for privatization, it is important to note that the Disaster Mitigation Act of 2000 (DMA 2000)<sup>12</sup>, which amended the Stafford Act, came about at a time in which privatization was seen as the norm. In Europe, many government functions had been sold to the private sector as early as the late 1970s. In the United States, privatization began to gain momentum following the NPM

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<sup>12</sup> DMA 2000 established the requirement for hazard mitigation planning.



movement, as described previously. However, the United States model was more focused on contracting and not on wholesale transfer of government functions (Henig, 1989–1990). The result of both models still favor private sector provision of public services. The literature described above does not always distinguish between the privatization model being used, a fact which may limit the direct applicability of the recommendations discussed earlier. However, the literature describing the historical time clearly shows that the federal hazard mitigation programs came about at a time when private sector provision was becoming the norm, both nationally and internationally. Although there may have been some concerns expressed in the theory, contracting was rapidly growing and was heavily promoted as a means to reduce government spending. The mitigation programs which focus on disaster recovery also saw heavy private sector involvement as did those providing mitigation services. The social sciences literature on natural hazards describes these privatization trends following disasters (Klein, 2007).

#### *Literature on Natural Disasters and Hazard Mitigation*

The social sciences literature on natural disasters and hazard mitigation includes a focus on disaster recovery and privatization. It is also useful in understanding the post-disaster environment (a time in which a great deal of hazard mitigation activities are currently done by the private sector). This literature is also helpful in understanding the particularities of the mitigation as compared to the various other government activities, which are typically provided as examples of privatization in the United States.

Naomi Klein (2007) coined the term “disaster capitalism”, which has led to increasing interest in the role played by corporations after major disasters. According to the theory of disaster capitalism, disasters are used by corporations to promote their free market goals or are used to push neo-liberal market reforms upon nations undergoing upheavals. Her work has given rise to

a new body of research, which is beginning to take a closer look at the intersection between the private sector and disasters. This research is primarily concerned with disaster recovery and has paid little attention to the private sector's role in the types of prevention efforts which are or are not taking place; in fact, it argues that in some cases crises are promoted by corporations to increase their control (Klein, 2007). In the context of natural hazards and hazard mitigation in the United States, it is difficult to argue that corporations can promote crises; however, in light of this theory, it is worth questioning whether corporations have any real incentive to mitigate hazards at all. In general, hazard mitigation and disaster risk reduction reduce the need for post-disaster recovery services and could impact potentially lucrative contracts. However, Klein's research deals only with large multi-national corporations and does not address the wide range of corporate entities and sizes that are involved, for example, in public hazard mitigation efforts in the United States. However, the concept that corporations can benefit from disasters is certainly seen in the United States context, as is a resulting growth in contracting following disasters (Calhoun, 2006).

Although most of the disaster capitalism research has focused on Third World concerns such as the aftermath of the 2004 Tsunami and rarely on concerns pertaining to the United States (Gunewardena & Schuller, 2008), Hurricane Katrina has been an exception to this trend, with many authors noting the role of capitalism. The various theorists writing on the Hurricane Katrina experience provide multiple examples: 1) the increases in vulnerability and inequality that resulted from the disaster, and 2) the role that private sector contracts played in those increases. One of these theorists, Calhoun (2006), has described relief efforts as being designed to enrich corporations. He argues that the language of preparedness is being used for political

and corporate ends. He places the Hurricane Katrina recovery within the context of the larger privatization trends (Calhoun, 2006).

Another theorist, Dyson (2006), also writing about Hurricane Katrina, observed that many large corporations immediately began obtaining no-bid contracts, a situation in which smaller local and minority-owned companies are excluded. In fact, he observes that within a month of landfall, over 15 contracts larger than \$100 million dollars had been awarded. He also notes that over 80% of the contracts awarded by FEMA were either no-bid or had limited competition (Dyson, 2006). On a similar note, a Government Accountability Office (GAO) report following Hurricane Katrina describes the tensions between the use of national contractors and the Stafford Act requirement to use local contractors, a requirement that most researchers say was not met. The report also notes a lack of personnel to provide contractor oversight (GAO, 2006).

The second question and related sub-questions begin to explore what some of the effects of that privatization may be, as indicated by the literature.

*Q2: What are the outcomes of privatization, including the effects on accountability and equity considerations?*

The privatization literature described in relation to the first research question is also a starting point for the second research question. In particular, the discussion regarding the pros and cons of privatization and the one regarding the evaluation criteria for the make-or-buy-decision take into consideration potential outcomes. In their discussion of the decision to make or to buy a good or service, Chamberlin and Jackson (1987) divide goods and services into three categories: government-owned assets, goods and services consumed by government agencies, and goods and services delivered directly to private citizens and firms. They suggest that the third category provides more challenges for the use of private sector contracts, a suggestion which is similar to

that made by the various theorists described previously; they suggest that there may be challenges related to equity and distribution in services provided directly to the public. A lot of the hazard mitigation activities that are typically managed by private sector firms following a disaster fall into the third category, although a great deal of planning might fall into the second. This appears to indicate that there may be particular challenges in ensuring accountability and equity in the private sector provision of these services. In particular, one interesting observation by Chamberlin and Jackson (1987) regarding the use of the private sector for the third category is that the practice of paying a flat rate per person served discourages corporations from serving those clients whose needs are greatest and who will require the most investment of time. This earlier finding has implications for the research reported herein. This exact allegation was made against the Road Home program (a private sector firm had been contracted to manage distribution of recovery dollars) in Louisiana following Hurricane Katrina, but there were multiple complaints regarding the appeals process and the ability of the firm to treat all applicants fairly (Scott, 2009). More specifically, there was a concern that the terms of the contract, which were based on a total number of cases, allowed the firm to focus on the easier cases in order to quickly meet the assigned deliverable of cases. Additionally, the Road Home program was not responsive to local concerns and did not take into account the content of local plans. According to FEMA, in a letter dated February 2, 2007 to the Louisiana Governor's Office of Homeland Security and Emergency Preparedness "Initial Road Home decisions are currently being made without regard for the local communities' development plans and local mitigation plans" (2).

Many of the challenges with the management of the Road Home program stemmed from the contract between the Louisiana Recovery Authority and ICF International. The contract did not

contain clear performance goals and the state was later unable to add them as the program begun to be questioned. As one editorial stated: “ICF’s abysmal management of the Road Home program hampered people’s recovery from the 2005 hurricanes and caused great misery and hardship” (Sisco 2009). The state of Louisiana also had to enter into disputes with ICF over the billing of legal expenses for ICF to defend itself against lawsuits by employees (Scott, 2009). When ICF was finally replaced, it was replaced by a former sub-contractor, HGI, who had initially come onto the ICF team in 2006 with a contract worth over \$70 million, despite allegedly having very little experience in the work it was being hired to do (Scott, 2009). As the Road Home example illustrates, there are many challenges to evaluating contracts for certain types of hazard mitigation services. Chamberlin and Jackson (1987) propose two types of evaluation criteria for privatization efforts that may prove useful to this discussion: outcome-oriented criteria, which include efficiency, distribution, and innovation; and process criteria, which include decision costs<sup>13</sup>, due process, and responsiveness. The majority of the literature currently available regarding privatization, including arguments for and against the practice, focuses primarily on outcome criteria, some of which are the focus of the make-or-buy-decision and are illustrated in Table 1. The criterion cited the most often is efficiency, with several theorists, such as Ronald Moe (1987), describing privatization as originating from the notion that the public sector is less efficient than the private sector and should therefore be replaced by the marketplace whenever possible. However, this research will examine whether responsiveness to the client as well as the other process criteria described by Chamberlin and Jackson (1987) should be the evaluation criteria for an adequate assessment of the role of the private sector in mitigation.

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<sup>13</sup> Decision costs (which can be difficult to know beforehand) include the costs or negative impacts that may result from a particular decision or from not selecting a particular option. They also include the unanticipated costs such as the need to invest in management and oversight.

The dichotomy presented by Chamberlin and Jackson (1987) regarding outcomes and process appears to imply that there are fundamental differences between the public and private sectors. However, the article does not clearly articulate what those might be. Other theorists, such as Moe, have attempted to draw a clearer distinction between the two sectors. According to Moe (1987), the federal government has certain rights and immunities as the sovereign<sup>14</sup> and should retain control of any functions for which these rights and immunities are needed. He argues that between the two sectors there is a fundamental difference, based on these rights and on the private sector profit motive, which needs to be taken into account any time privatization of a particular service is considered. In the case of hazard mitigation services, one of the most effective hazard mitigation measures (land use) is clearly a function of local government. Also of note is the fact that the livelihoods, safety, and even survival of communities can depend upon hazard mitigation decisions.

Another relevant difference that is often cited is the idea that the public sector is better equipped to provide equitable distribution of services. In fact, many opponents of privatization are concerned that too many cuts to social services have been made in the name of the market without the private sector or any other entity filling the gaps (Calhoun, 2006). Additionally, several theorists, including those who favor privatization, have observed or admitted that the results are not uniform and that certain groups invariably benefit more than others (Feigenbaum & Henig, 1994). In terms of hazard mitigation, it may be that private sector involvement does not lead to equitable distribution of services. Equality of distribution is a basic tenet of the American political system. Furthermore, inequality is unacceptable, especially when human safety is at stake. This research will explore the incentive to service those clients who have

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<sup>14</sup> This refers to the rights belonging inherently to a government, such as the ability to tax or to declare war.

lower transaction costs during disaster recovery and preparedness phases and its relation to issues of equity.

Also of concern is accountability; there is widespread agreement that accountability is challenging when government services are privatized. In particular, Gormly and Balla (2004) have noted that government officials often lack the information necessary to distinguish between good and bad service providers, that responsibilities are often vague and therefore difficult to monitor. With little oversight once a contract is awarded and with little competition for certain services, this may well be the case. Hazard mitigation appears to meet this description: The service provided is quite varied (on a case-by-case basis) and relies on a great deal of discretion (which projects to pursue, what groups to involve in the planning process, etc.). Local and state governments have almost no grounds to distinguish between providers because the cost and scope of work are determined by federal grants and because there are very few providers in the market. Lipsky's (1980) description of street-level bureaucracy, which is examined further below, notes the ambiguity of performance measures even within the public sector, a challenge that is further amplified by private sector actors who must keep profit in mind in order for their businesses to survive. The wide range of hazard mitigation services and other unique characteristics previously mentioned only serve to make accountability and standardization more difficult (Lipsky, 1980) when the private sector delivers public services.

However, some theorists who also focus on accountability write in favor of privatization. One example is Trebilcock and Iacobucci (2003) who argue that there are two types of accountability: within an organization and of the organization. They contend that there are differences between public and private provision of services but that accountability is not lost through privatization. In response to the various arguments that the public sector is better equipped to pursue social

ends, they note that public actors often act out of political self-interest<sup>15</sup> and propose that the profit motive can actually have a positive effect on social welfare due to the greater discipline that is required to make a profit. In particular, they argue that because of this requirement, the private sector has more experience using resources wisely. Based upon this theory, it might be assumed that the private sector would be inherently more efficient because efficiency only serves to increase profit. Additionally, there is an inherent assumption that government is by its nature wasteful of resources and that the market will ensure that only companies that provide a quality product will continue to receive business. This research will look for indicators of market failure but will not be able to establish whether this action is indeed taking place.

Trebilcock and Iacobucci (2003) do admit, however, that in order to have work, the private sector may have incentive to encourage recidivism<sup>16</sup>. However, they argue that the market provides its own form of accountability and that private corporations do not survive when they perform poorly. In fact, if hazard mitigation creates market failure by its very nature (i.e., the service is being provided for the community rather than the community providing it for itself), then it becomes necessary to question whether their assumption would hold true regarding accountability. Regardless, it is clear that political self-interest does play a role when significant amounts of money are made available to communities following a disaster. These questions too will be explored in the context of accountability and equity.

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<sup>15</sup> This statement is supported by the disaster literature; it notes that the long-term actions required for hazard mitigation are not always in the immediate political interest of those in local government.

<sup>16</sup> This concept stems from private sector involvement in programs for which the goal is to wean clients off a system. Simply stated, if the service provider is being paid per client, then there is no incentive for it to work towards an eventual reduction in the number of clients.



### *Literature on Street-Level Bureaucracy*

As previously mentioned, the literature on “street-level bureaucracy,” describing the ways in which a street-level bureaucrat is a government employee within an agency who has discretion over provision of services to the public, is relevant to this research as well. In particular, it is quite relevant to the analysis of the implementation of hazard mitigation services by the private sector, in which private sector employees function as in the role of street-level bureaucrats. It is informative because it provides a window to understand how the provision of government services takes place, particularly when discretion is required (Lipsky, 1980).

Within hazard mitigation as an activity, street-level bureaucrats have a role that involves a great deal of discretion, because the regulations contained within the regulatory language (44 Code of Federal Regulations Section 201) were purposefully designed to allow for some flexibility at the local level. Element 2a, which deals with the planning process, is one example. It states the following: “The planning process shall include an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process” (44 CFR 201). This does not clearly indicate what an opportunity entails. In some communities all that is done is to send an invitation letter to various identified stakeholders; this invitation rarely results in participation. Private sector companies have an active disincentive to assist individuals (units) who have more complex problems because this increases their time required per individual and thus reduces their profit per unit. These recovery contracts can be based upon the number of individuals served, in which case dealing with the easier cases can maximize the number of people “helped”. In mitigation, a similar challenge occurs because the contracts are written to an individual community client. An ‘easier’ client will produce a completed project and thus remunerate faster

than a 'difficult' one. This research will examine whether this type of "helping" is indeed taking place and the impacts it has on issues of equity.

Although there has been no clear analysis of how the street-level bureaucrat functions within the private sector when a private firm is contracted to provide service delivery, Lipsky (1980) does describe the challenges inherent to the public sector. These challenges are relevant to this discussion because the services provided during the disaster recovery period essentially require that the private sector function as a street-level bureaucracy. In Louisiana's Road Home program, for example, private employees handled case management for impacted Louisiana residents, making recommendations regarding the options they should pursue and making decisions regarding which appeals to respond to and in what time frame.

According to Lipsky (1980), it is bureaucrats themselves who create policy through their actions. Lipsky states that the best possible outcome is mostly fair, mass production while the worst is favoritism and stereotyping. In short, at best, there should be no attention to the unique elements of particular cases, while at worst, bureaucrats cherry pick those cases with which they wish to deal and deal with them uniquely. Discretion is required because of the range of human situations with which the bureaucrat comes into contact. The provision of post-disaster aid occurs in a similar environment to that characterized by Lipsky (1980), an environment of inadequate resources, of increasing demand as supply grows, of ambiguous or conflicting goals, of non-voluntary clients, and of performance which is difficult to measure. Mitigation is in this context.

Based on the above, it is clear that the privatization of hazard mitigation may face some challenges in terms of accountability and equity, at least as shown by the literature on privatization. The literature on hazard mitigation from the social sciences can also be used to

begin to answer this question. In the social sciences, primarily in sociology and in anthropology, there have been several texts written regarding natural hazards and their effects. These include works by the following: Ben Wisner (2004), Beverly Cigler (2007), David Alexander (1999), Gilbert White (1993), Ian Burton (1993), Robert Kates (1993), Ronald Daniels (2006), Donald Kettl (2006), Howard Kunreuther (2006), Carla Prater (2000), Michael Lindell (2000), Peter Gosselin (2006), Kathleen Tierney (2006), Mark Pelling (2003), Dennis Mileti (1999), Ann Larabee (2000), Charles Perrow (2007), Kai Erikson (1989), David Sanderson (2000), Cass Sunstein (2002), Sandra Shneider (1995), Lawrence Campanella (2005), and Thomas Campanella (2005), among others. These authors deal primarily at the individual level, but the communities in which hazard mitigation takes place are comprised of these individuals. In fact, many of these authors find that the vulnerable populations are often clustered into particular communities (Burton, 1993).

The literature on program implementation can be thought of, in part, as having both a bottom-up view and a top-down view. The work of Lipsky (1978) is an example of the bottom-up view, which focuses on service delivery at the street level. Other theorists have focused more on the implementing agencies, the authorizing legislation or statutes, and the problem being addressed (Sabatier, 1986). These theorists examined the ways in which the objectives of legislation were achieved.

Van Meter and Horn (1975) provide a review of the implementation literature through an analysis of these two approaches: top-down and bottom-up. They argue that the typical time frame for implementation research is too low for a true analysis of results. They suggest at least a 10–20 year time frame, which would indicate that DMA 2000 has not yet been in effect for a sufficient amount of time to allow for an accurate assessment of its implementation.

Also present in the literature is discussion on the challenges of creating centralized programs which can address local particulars and avoid rendering the subject matter overly homogenous. Turgerson (2005) suggests that top-down control can exclude those who actually grasp the particulars of an issue and therefore cannot deal with the holistic features of reality.

### *Literature on Natural Hazards*

Over the past 20 to 30 years there has been a dramatic increase in the depth and breadth of the literature dealing with natural hazards, disaster, resilience, mitigation, vulnerability, and related issues. Several theorists have found a significant relationship between pre-disaster vulnerabilities—such as those imposed by poverty or by a lack of access to resources—and the impacts of a natural hazard event itself (Wisner, 2004), (Tierney, 2006), (Pelling, 2003), (Gosselin, 2006), (Vale & Campanella, 2005), (Mileti, 1999), and (Laska & Morrow, 2006). It is now understood that natural disasters are in fact born of the interaction among the physical event, the built environment, the socio-demographic characteristics of the affected population (Mileti, 1999) and the social structures and systems in existence when and after the event occurs (Laska & Morrow, 2006).

While a great deal of the research dealing with vulnerability to natural disasters has focused on Third World populations (Wisner, 2004), (Gunewardena & Schuller, 2008), (Burton et al., 1993), there has been some research within the United States context, particularly following the impact of Hurricane Katrina on the Gulf Coast. Much of the Hurricane Katrina research has focused on issues of social vulnerability, with several theorists drawing parallels between New Orleans and the Third World (Tierney, 2006), (Gosselin, 2006). This illustrates a shift in thinking about disasters towards a broader view of social forces and their roles, as advocated by Dennis Mileti

(1999), Laska & Morrow (2006), and others. The existence of these concerns elevates the importance of equity even further and suggests a similar challenge for hazard mitigation. Large-scale disasters can have significant impacts within the political arena and can often lead to changes in policies and regulations (Mileti, 1999), (Klein, 2007). As Burton et al. noted, major United States legislation has often been preceded by a crisis (1993). Mark Pelling makes a similar observation, noting that disasters can serve to weaken existing power structures and challenge the status quo (2003). He describes formal responses as strengthening the state structure and successful informal responses as weakening it. Yet this change is not necessarily permanent and can often prove to be negative because the destabilization allows for the intrusion of the neo-liberal privatization agenda (Klein, 2007). In addition, those segments of the population that were the most vulnerable prior to the disaster tend to remain the most vulnerable, and their vulnerability is actually increased due to an inability to fully recover (Tierney, 2006), (Burton et al., 1993). These individuals may constitute the more challenging cases for both recovery and mitigation efforts, which, as the literature points out, may not be adequately addressed by the manner in which the private sector provides government services. It is necessary to ask whether communities with a high concentration of these individuals may be at an even greater disadvantage from private sector provision, particularly given the previously described equity challenges.

Several theorists describe disasters as being inherently inequitable, noting that the burdens associated with them are shouldered primarily by those who are least able to handle the strain (Burton et al., 1993). The poor segments of the population, particularly in the mega-cities of the Third World and in other areas characterized by extreme poverty, face disaster on a daily basis and have significantly depleted their resources before the “real disaster” occurs (Pelling, 2003).

Pais and Elliott (2008) observed that poorer residents lack the financial resources for recovery and have greater challenges navigating the bureaucracy of assistance, resulting in poor outcomes. This discussion of equity is present within the literature that followed Hurricane Katrina, with the effects of Hurricane Katrina often cited as examples of the inequitable distribution of disaster risk and damages (Tierney, 2006). Among the theorists who have written on this topic are the following: Kathleen Tierney (2006), who has focused on the perpetuation of social inequalities by disasters; Beverly Cigler (2007), who has also looked at the situation in New Orleans prior to Hurricane Katrina and has observed that the city was suffering economically and socially at that time; and Peter Gosslin (2006), whose analysis describes the reconstruction as a private-market affair but does not attribute this to privatization, instead focusing on government inattention. Gotham and Greenberg (2008) observe that even federal programs (such as which must meet HUD criteria that mandate that benefits be given to persons of low and moderate income) have had these requirements waived in many recent disasters. It is unclear if these waivers have been influenced by private sector contractors, but there are several instances in which these contractors have sought to streamline processes by seeking to have requirements waived.

It is worth noting that Cigler (2007) pays some attention to the role of the market. She notes that the disaster recovery dollars associated with some of the larger recovery contracts all went to companies headquartered outside of the region. She also observes the role that private industry (i.e., the oil companies) had played in the destruction of the coast, a coast whose condition has directly impacted the level of damage from hurricanes. She also observes that these private sector businesses have not been asked to assist in repairing those damages, indicating that they faced no direct consequences for their actions, no impacts to their bottom lines, and therefore have no market based incentive to change.

Also relevant is the literature on the role of development practices on the impacts of hazards at the local level. Mileti and Peek (2001) state that the inability of the United States to reduce disaster losses is due to attitudes towards the natural environment and short sighted development practices, among other reasons. They also address the differential impacts of disaster on minorities and on low-income households (individuals who are more likely to live in lower-quality housing). This is particularly relevant to the question of equity in hazard mitigation. Burby has also pointed out the role which development practices, as supported by the NFIP, have played in increasing risk and losses (2006).

The research described above serves as an introduction to the literature and makes it clear that additional research focused particularly on mitigation at the community level and on the role of corporations, particularly that which looks at the variety of corporate types and general situations, is still lacking. However, it is clear that government at all levels lacks the capacity to deliver the range of services which they are charged to provide (Cooper, 2003) and that they are therefore utilizing contracts quite heavily.

#### *Literature on Contracting*

Further discussion on the use of contracts has more recently been developed, as public administration theorists such as Hansen (2006) have begun writing about the selection and management of private contractors and consultants within a government setting. Others, such as Cooper (2003), have drawn attention to the significant growth in the use of contracting that lacks sufficient management. They indicate that although a few local and state statutes address bidding and procurement regulations, there is not much guidance available regarding the management of contracts and service delivery (Hansen, 2003). This becomes particularly problematic when what is being purchased is a technical service, such as hazard mitigation

planning or grants administration, for which a local official may be unable to gauge the quality. Smaller communities, in particular, are at a significant disadvantage in monitoring contracts due to their lack of staff and may receive an insufficient number of bids to guarantee cost savings (Mohr, Deller & Halstead, 2010). Contracts are the primary mechanism for privatization in the United States and serve to guide the official relationship between the public sector entity and the service provider. The ways in which the contract language itself does or does not allow for accountability are worth exploring, as little attention is made to the language utilized and to the provisions which require certain levels of accountability.

Cohen & Eimicke describe the make-or-buy-decision, previously described within the privatization literature, as the first question that must be answered by a local government or agency trying to decide whether to contract at all (2008). This decision is affected by several factors such as local capacity, the function of the contracting agency, and the type of good or service being purchased. It is interesting to note that hazard mitigation may be assumed to be a necessary purchase in many communities, meaning that communities themselves assume they must use a contractor and the states and FEMA regions also assume they will do so, thereby circumventing the make-or-buy-decision process. This research will explore this question.

In their recent book, which is designed to provide advice to local officials, Cohen & Eimicke (2008) suggest that any activities that do not fall within an agency or department's core set of responsibilities are most appropriate for contracting. Utilizing this decision criterion, the appropriateness of contracting mitigation might have a lot to do with the departments that are given that responsibility and their capacities and organizational foci.

The literature includes some references to the need to use contract specifications to control contractors, but few specific examples are given (Ferris & Grady, 1986). Clearly the failure to



do so was one of the key challenges facing Louisiana's Road Home program. One exception is Cohen & Eimicke (2008) who suggest that contracts contain the following:

- “ability to define/shape work of contractors”
- “flexibility to make mid-course correction”
- “ability to obtain frequent and accredited measures of contractor performance”
- “methods for systematically providing performance-based incentives and disincentives – particularly financial bonuses and penalties”
- “procedures for developing and maintaining informal communications from government staff and management to contractor staff and management”.

A newly emerging literature on public-private partnerships provides an alternative to traditional contract mechanisms in which a more formal partnership between the public and private entities is laid out. Under these mechanisms, accountability is based upon the relationships between the parties (Forrer et al., 2010).

#### *Literature on Hazard Mitigation Planning*

Another recently emerging literature focuses specifically on hazard mitigation planning. This literature has focused primarily on the interactions between mitigation planning and comprehensive land-use planning and has paid little attention to the actual quality of the hazard mitigation plans or to who was actually doing the writing.

One recent publication by James Schwab (2010) does consider the use of contractors as one variable. Focusing primarily on plans in California, Schwab found that consultants prepared 24% of plans. He noted that the use of consultants could lead to the exclusion of vital information that is unknown to those who are not familiar with local circumstances.

Additionally, he found that consultants were ranked second out of nine in a list of planning

participants, by importance, behind only police, fire departments, and emergency medical services. This indicates that their participation was considered more important than that of many local stakeholders, and that the majority of communities were assuming that a consultant would be involved in some capacity.

#### *Additional Literature Identified Following Preliminary Analysis*

The role that connections among public and private stakeholders at all levels played in successful local hazard mitigation efforts was made clear through many of the interviews. As a result, Clarence Stone's "performance regimes" concept was explored as the most applicable framing available within the public administration literature for these types of local collaborative efforts (1998). Performance regimes, part of the broader concept of urban regimes discussed by Stone, are characterized by collaboration among a wide range of stakeholders (some of whom may have differing or competing objectives) that are working together towards a particular goal. A regime is simply the set of arrangements and relationships through which a community is governed (Stone, 1998). Performance regimes are focused on action and they allow for the creation of coalitions among interested parties, including local government, community actors, the private sector, and others.

Several theorists have applied the concept of performance regimes to emergency management. Among the first to do so were Clarke and Chenoweth (2006). They describe the use of performance regimes as a viable strategy for local governments to utilize in response to high levels of risk and vulnerability. Their reasoning is based on the increased need for coordination both among local actors and with various levels of government. Additional research by Bowman and Parsons (2006, 2009) has found examples of local emergency management agencies building

performance regimes as well as evidence that those counties with greater levels of vulnerability in North Carolina tend to be more active in building collaborative relationships.

Other authors, such as Mileti and Peek (2001), have described the need for local networks as a component of fostering disaster resilience. They describe a holistic approach in which mitigation is situated within the context of broader community goals, as well as in the need for local consensus building. Although not directly related to the performance regime literature, there are several similarities in the type of coordination described.

The value of public-private partnerships, as a collaboration mechanism, is also described by several authors and respondents. Kunreuther describes public-private partnerships as a component of reducing disaster losses, of aiding in recovery, and of promoting individual action (2006). Anderson and Pearce (2012) define public-private partnerships as “collaborative, cooperative groups with the aim of proactively addressing community issues, such as pre-disaster mitigation” (60). They cite public-private partnerships as key components of Project Impact’s success and as key components of local mitigation efforts. Their description of public-private partnerships, is also quite similar to the language used to describe performance regimes. In fact, a recent report by the National Academy of Science indicates that this type of collaboration is crucial to strengthening local resilience. The report describes a few key principles to success, including flexibility, communication and collaborative missions (NRC, 2011).

Another theme that emerged from the interviews was that of the role of expertise in public decision-making. The literature on the politics of expertise, including that by theorists such as Frank Fischer (2005), provides some insight into the changing role of the technical expert in public policy and deliberation. Fischer argues that the reliance on experts disenfranchises the

general public and does not allow for consideration of the normative dimensions of public decision-making. In essence, expert opinion is consistently valued more highly than public opinion, and there is little room for democratic decision making (Fischer, 2005). As several interviews made clear, hazard mitigation decisions at the local level stem from community values, and only those communities that truly desired risk reduction saw particularly good results from their hazard mitigation planning efforts (Respondent 2). Therefore, the role of expertise in decision-making, including the decision to utilize the private sector and to create highly technical cost-benefit and risk-assessment methodologies, is one that must be further analyzed.

Thus, this earlier research suggests that performance regimes generate response resources but sometimes diminish the response capacity of some actors in the collaboration when other actors are added whose skills diminish those of the local participants. This integrated finding will be explored with the data collected for this study.

### *Summary*

The various literatures described above provide a theoretical basis for this research but do not directly address the topic at hand. Privatization has been studied extensively in different contexts, with the majority of the literature focusing on the make-or-buy-decision and on the outcomes. This literature is relevant to hazard mitigation because it inferentially draws from the types of situations studied, such as prisons and schools. However, there is much that is unique about the disaster context and about hazard mitigation itself, as illustrated by the literature above. Additional review of the bodies of literature related to collaboration, technocracy, and regimes is needed, beyond that which is presented above.

The various bodies of literature described in this chapter will serve as a lens through which to analyze the findings of this research.

### **Chapter 3: Research Design and Methods**

This chapter describes the conceptual framework for this research as well as the research design and methods utilized for this dissertation. The chapter includes operational definitions for the terms utilized in this study, a discussion of interview themes, and a brief overview of the limitations of this study.

#### *Conceptual Framework for Research Design*

The primary question that this dissertation seeks to answer is this: *How has the private sector come to play such a significant role in government hazard mitigation services and what have been the consequences of extensive privatization of these services?* The second question that this research will address is this: *What have been the consequences and outcomes of privatization, including their effects on accountability and on inclusivity<sup>17</sup> of service provision?* Due to 1) the broad nature of the question; 2) the lack of previous research on the topic; and 3) the need to gather basic historical data, this dissertation utilized a mixed-methods approach with the goal of gaining a broad understanding of the privatization of the hazard mitigation sector in its various manifestations. This dissertation consists of a case study, broken out into two time periods: 1) the role of the public and private sector in hazard mitigation prior to the Disaster Mitigation Act of 2000, and 2) the role of the public, private, and other sectors from the creation of the Disaster Mitigation Act of 2000 until the present time. The study of these two time periods will be based primarily upon a series of interviews and will include several imbedded cases because various programs and initiatives are analyzed in greater detail. These imbedded cases will primarily focus on hazard mitigation planning and on mitigation following federally declared disasters. Analysis of these two time periods, presented in Chapters 4 and 5, is followed by a more in-

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<sup>17</sup> This question looks at the extent to which privatization of hazard mitigation has influenced the ways in which services are available to all sectors of the population, including those for whom service delivery is more challenging.

depth discussion of the outcomes and findings, a discussion that cuts across both cases and all imbedded cases. The following table describes the imbedded cases included within each chapter.

**Table 2: Imbedded Cases**

<b>Chapter</b>	<b>Imbedded Case</b>	<b>Criteria for Selection</b>
4	The National Flood Insurance Program	The NFIP was cited by multiple respondents as the first effort by the federal government in risk reduction. It is also cited by many as a program that has led to mixed results. The NFIP is particularly interesting given the changes over time in the level of involvement of private insurers – ranging from the involvement of an insurance consortium to the far less involved Write Your Own program. Many respondents made recommendations regarding changes to the NFIP, another indication of the importance of looking at this program.
4	The Blizzard of 1978	The hazard mitigation efforts following the Blizzard of 1978 were cited by multiple respondents as illustrative of the early ‘guerilla’ efforts at hazard mitigation. It serves as an excellent example of the ways various agency programs could be combined with political will and leadership to achieve results. Many respondents described these earlier efforts as being quite different from modern day disaster assistance, primarily in terms of the federal attitude and the level of involvement of consultants.
4	The Community Rating System	The Community Rating System (CRS) is quite often cited as an example of a successful program or initiative. Unlike other federal programs, the CRS has functioned as a collaborative effort between the public and private sectors. The contracting model utilized for the CRS is unique in that it is not a direct federal contract with the private partner. Instead it is an extension of the Write Your Own program.
4	Project Impact	Project Impact was quite different from the programs that preceded and followed it in that it focused heavily on empowering local efforts as well as on fostering partnerships. Project Impact was described by multiple respondents as being a successful program as well as being an example of a model that ought to be replicated.
4	The Federal Emergency Management Agency	The creation of FEMA, of its designation as the federal agency charged with hazard mitigation, and of the history of the agency itself are all relevant to the discussion of the public role in hazard mitigation. The contracting practices utilized by FEMA, as well as the role of the private sector in FEMA efforts, are analyzed in both chapters.

**Table 2: Imbedded Cases (cont)**

4	Florida Local Mitigation Strategy	As one of the earliest examples of a hazard mitigation planning initiative, the creation of Florida's LMS program is quite relevant to this dissertation. The LMS program was utilized as a model by the federal government in the creation of DMA 2000 guidance. A comparison of the level of involvement by the private sector in the LMS program, as opposed to DMA 2000, is also of interest.
4	North Carolina Hazard Mitigation Planning	As one of the earliest examples of a hazard mitigation planning initiative, North Carolina's program is relevant to this dissertation, so is its history. The program was utilized as a model by the federal government in the creation of DMA 2000 guidance and was far more focused on land use than previous initiatives. The role of academic institutions in the creation of the program is also of interest.
5	Creation of Guidance re: DMA 2000	The creation of federal guidance for hazard mitigation planning illustrates the extensive private sector involvement in federal hazard mitigation efforts. Additionally, the heavy private sector role in the subsequent federal and local implementation is of interest.
5	Creation and Growth of the Mitigation Industry	The trajectory of the hazard mitigation industry, in which the federal funding and programs led to the generation of a robust private sector, is also of great interest.
5	Hazard Mitigation Grant Administration	The use of contractors for grant administration is a more recent phenomenon described by many respondents.

A qualitative case-study is particularly well suited to the questions addressed in this dissertation because it allows for an active learning process in which the researcher can, throughout the process of inquiry, make choices based upon the emerging findings (Rossman & Rallis, 2003).

Case studies in particular are useful for exploring programs, events, and processes in depth (Creswell, 2003), (Yin, 1994). Another reason for the selection of a qualitative methodology is the ability of this research paradigm to recognize the unique perspective and contribution of the researcher's own personal biography (Rossman & Rallis, 2003). The author of this dissertation is a long-time practitioner in the field of hazard mitigation with many years of employment in the



field, including 1) employment with a national firm; 2) employment with national and international non-profit organizations; 3) employment at an academic research center; and 4) employment as an individual consultant to private and public sector clients. As a result of this extensive background in the field, the researcher has access to a broad community of practice in which she actively participates and has been involved in making recommendations for many of the recent national initiatives analyzed in this dissertation. This dissertation utilizes a mixed-method approach consisting of semi-structured interviews, a review of primary sources, and various coding and analysis strategies. The mixed-methods approach was selected in the interests of credibility and rigor, as there is little information available on the subject matter. The use of semi-structured interviews allows the respondents to provide a range of information and analysis in a conversational fashion.

### *Operationalization of Terms*

Hazard mitigation is a highly specialized field with unique terminology, terminology that can often be understood in different and conflicting ways. The following table provides operational definitions<sup>18</sup> for the terms used within this study.

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<sup>18</sup> These definitions are as designated by the researcher.

**Table 3: Operational Definitions**

<b>Contracting</b>	<b>The purchase of services from the private sector by a government.</b>
Disaster Related Mitigation	All mitigation activities, including planning when funded by HMGP, which occur within the context of the recovery and reconstruction phases following disaster events.
Grants Administration	The administration, including program design and regulations, application and disbursement, of hazard mitigation funds.
Hazard Mitigation	Sustained actions taken to reduce or eliminate long-term risk to human life, to communities, and to property from all hazards by institutionalizing disaster risk reduction <sup>19</sup> .
Hazard Mitigation Grant Program (HMGP)	A grant program administered by FEMA following a disaster declaration.
Independent Consultant	A one-or two-person team, working primarily as hazard mitigation planners or recovery consultants, who are either hired directly by a local community or serve as sub-consultants to a larger firm. This term is not spatially bound as these individuals often work in various states.
Large Local Firm	A company of over fifty employees which otherwise meets the requirements of a small local firm.
Mitigation Planning	The process through which hazard mitigation plans are generated.
Multi-National Firm	A company that operates in multiple countries.
National Firm	A company that operates in multiple states throughout the nation. A national firm that is conducting business in its home state will be considered as a small or large local firm within that particular context.
Privatization	In this context, privatization primarily takes place through contracting. European privatization models can involve the sale of government functions to private sector providers. That has not occurred with mitigation in the United States.
Post-Disaster Time Period	The immediate aftermath of a natural disaster including the initial recovery and grants management period.
Public Assistance	A category of post-disaster assistance to repair government infrastructure provided by the federal government, which includes a hazard mitigation component.
Small Local Firm	A company of less than fifty employees that is headquartered within the state in which business is being conducted. Small local firms may either be hired directly by the local community or state, or may serve as sub-consultants to larger national

<sup>19</sup> Examples of hazard mitigation include floodplain management, elevation of structures, retrofitting structures, education and outreach, land use and building codes.

	firms. Under certain circumstances, such as location near a state border, a firm may be considered local although it is officially headquartered in a neighboring state.
Unified Mitigation Assistance	The federal hazard mitigation grant programs dependent upon Congressional authorization.

*Data Collection and Analysis*

Data collection consisted of a series of structured interviews, which were conducted in two phases. It also consisted of a concurrent review of all relevant and available primary documents identified by respondents. All research complied with the University of New Orleans’ policies regarding human subjects. Approval by the IRB Committee of the research protocol was obtained prior to the interviews. Participant selection for the initial phase of interviews was as follows:

1. The first two respondents were identified as opinion leaders within the field because they both had a long history of engagement with hazard mitigation efforts in both the public and private sectors.
2. Because of the responses of interviewees and because of the researcher’s knowledge, a snowball sample methodology was utilized to identify the remaining nine respondents who were interviewed as part of the initial phase.
3. Several types of individuals were interviewed including
  - a. Public sector employees from all levels of government;
  - b. Representatives of the various types of private sector entities;
  - c. Individuals who have transitioned from one sector to the other (usually public to private);
  - d. Individuals with knowledge of local government officials who have chosen not to use contractors.

These initial 11 structured interviews focused on the evolution of hazard mitigation and on the role of the private sector over the two time periods. Respondents were initially asked directly about the role of the private sector, including the decision to use private actors and about the results from this decision, but appeared hesitant to answer the question or were defensive of the decision. The initial interview guide can be found in Appendix A. The initial interview process made it clear that respondents were disinclined to respond to a direct question regarding private sector involvement. Instead, when asked more broadly about the involvement of various sectors, they responded with information regarding private and public roles. In particular, certain respondents defended the private sector role when the word ‘privatization’ was used, even if it was only used in the context of a description of the research question. As a result of the apparent effect of the phrasing of the question on responses, the primary question was reworded to inquire more broadly about the roles of the various sectors. Respondents were asked to share their histories with hazard mitigation, and following their initial recounting of their histories, they were further asked to expand upon the roles of the various sectors.

The vast majority of respondents expressed their pleasure at being able to share their experiences and expressed the desire that their histories be recorded. The respondents spoke for as long as forty minutes in response to the request that they share their experiences. Follow-up questions focused on clarification of points made, on requests for additional information regarding the roles of the various sectors, and on questions regarding additional responses. Many of the respondents shared recommendations for the improvement of hazard mitigation and for the reduction of disaster losses. These are utilized at the end of this document. Many interviews focused primarily on the history of privatization in hazard mitigation as well as on the history of the federal regulations. There was diversity in the backgrounds of the individuals

interviewed; consequently, some provided information relevant only to certain imbedded cases, while others provided a wide range of knowledge. Further information regarding interview themes and approaches is provided below. Primary sources were also obtained where possible and as identified by the interviews. Primary sources reviewed included the following:

- Mitigation planning guidance from Florida and North Carolina
- Notes and materials from FEMA Listening Sessions
- Various mitigation plans from Illinois, dating as far back as 1979
- Federal legislation
- Transcripts of Congressional Testimony
- Congressional Records from the House and Senate
- Various FEMA documents related to the programs described
- Relevant newspaper articles

The second phase consisted of interviews with 17 individuals taken out of a pool of suggestions for interview subjects generated by snowball sampling from the initial subjects. Additional interviews were conducted in some cases because recommendations for specific respondents were made due to the fact that there were certain unanswered questions regarding the embedded cases. To further explore the issues raised, frequent comments from the initial phase of interviews were shared with interviewees in the second phase, in a variation of participant validation, which allows emerging findings to be shared (Rossman & Rallis, 2003). One of the themes from the first phase that was shared with respondents in the second phase of interviews regarded the concern that spending money quickly had become the primary desired outcome in disaster recovery.

Additionally, follow up interviews were done with some of those interviewed in the initial phase because of additional questions that arose from preliminary analysis of the phase-one interviews. These interviews filled in any gaps in the study of the two time periods or of the embedded cases identified from the initial phase of interviews. This was particularly important because some individuals had only limited knowledge of one time period or program while others had a much wider range of experience but less depth of insight on any particular program. Overall, 28 individuals with a wide range of experience across multiple roles were interviewed. The following table provides summary information regarding the interviewees.

**Table 4: Interviewees**

Respondent #	Private Sector?	Public Sector?		Academia or Professional Association?	Pre DMA 2000?
		State or Local	Federal		
1	Yes		Yes		Yes
2	Yes	Yes			Yes
3	Yes	Yes			Yes
4	Yes	Yes			Yes
5	Yes				
6		Yes	Yes	Yes	Yes
7		Yes			Yes
8			Yes		Yes
9				Yes	Yes
10	Yes	Yes			Yes
11				Yes	

**Table 4: Interviewees (cont)**

12	Yes		Yes		Yes
13		Yes			
14	Yes		Yes		Yes
15			Yes		Yes
16		Yes			
17				Yes	
18	Yes	Yes			
19				Yes	
20		Yes			
21	Yes	Yes			Yes
22	Yes				Yes
23	Yes	Yes		Yes	Yes
24				Yes	
25	Yes			Yes	
26		Yes			Yes
27	Yes	Yes			Yes
28			Yes		Yes

A wide array of sources was used to complement the interviews, including primary sources identified by the interviewees; these sources strengthened the case studies through the use of triangulation, a process in which multiple methods and sources of data are used to increase credibility and rigor (Yin, 1984).

Over 30 primary sources were analyzed, including early guidance documents (which are described in Chapter 5), as were many of the early hazard mitigation plans that were described in Chapter 4. Primary sources were not available in any one repository or at any one institution but were instead obtained from the files and records of many respondents. Some respondents reported that they had destroyed primary documents because they were unable to find an entity willing to house them.

#### *Interview Themes and Approach*

The theme and the two time periods have been selected for this study because they represent the historical trajectory of the roles of the public and private sectors in hazard mitigation. They also represent different applications of federally funded hazard mitigation involving a range of different relationships between public and private players. The embedded cases cover a range of possible interactions between the public and private players. All embedded cases focus on particular programs, disasters, or discrete moments in time. Many of the embedded cases cover the decision to privatize or at least cover the interactions between the various sectors outside of formal privatization, and explore the effectiveness of the particular strategy chosen.

All interviews were transcribed and coded for various themes, some of which emerged from the interviews themselves. The themes analyzed are as follows:

- Measures of mitigation success



- The managing public entity (planning or emergency management)
- Use of contractors
- Collaborative models
- Public vs. private control
- Hazard mitigation prior to DMA 2000
- Hazard mitigation in recovery
- Hazard mitigation planning guidance development
- Private actors in public roles.

The initial analysis of the interviews focused primarily on the identification of key points along the chronology as well as on the identification of some emergent themes relevant to the questions asked. Based upon review of the literature and upon the key concepts that emerged, such as the questions of equity and whether there was market failure, key themes were identified. A second analysis of the interviews coded the response by the context of the hazard mitigation, particularly hazard mitigation planning, post-disaster hazard mitigation, and the development of policy. Other themes, which then emerged, became the basis for the various embedded cases. These themes included the following:

- The role of the various sectors
- Hazard mitigation outcomes
- Hazard mitigation plan quality
- Role of the managing entity
- Market failure
- The decision to utilize the private sector.

As is mentioned above, all interviews were transcribed, coded, and subjected to various qualitative analysis methodologies including both within-case and across-case techniques. All interviews were coded for the themes described above as well as for references to particular time periods, programs, sectors, and relationships with other interviews (Miles & Huberman, 1994).

The techniques utilized for within-case analysis included the following:

- Time-Ordered Displays: diagrams that illustrate the order of events within a case.
- Explanatory Effects Matrix: diagrams which illustrate cause and effect within a case.

The techniques utilized for cross-case analysis included

- Content-Analytic Summary Table: diagrams which illustrate emerging themes across interviews.
- Time-Ordered Meta-Matrix: diagrams which illustrate the chronology of events by theme, across the various interviews.

The techniques to be used were determined by the data gathered through the interviewing and research process, in order to allow the methodology to be responsive to the emerging findings. This is one of the strengths of case study methodologies (Yin, 1984). The researcher's unique position within the field also provided a lens for the analysis.

The following list of embedded cases are found in Chapters 4 and 5:

- National Flood Insurance Program
- Blizzard of 1978
- Community Rating System
- Project Impact
- Federal Emergency Management Agency
- Florida Local Mitigation Strategy

- North Carolina Hazard Mitigation Planning
- Creation of Disaster Mitigation Act of 2000 guidance
- Creation and Growth of the Mitigation Industry
- Hazard Mitigation Grant Administration.

### *Research Limitations*

One of the primary limitations of this study was the time and financial constraints placed upon it. The research conducted was limited in scope to a moderate number of interviews, all but three of which were conducted over the phone. However, it is worth noting that the population of potential interviewees is rather limited in scope. Future research might improve upon this study by selecting a broader range of interview subjects, further expanding upon the snowball methodology. Additionally, a travel budget would have allowed for in-person interviews nationally and perhaps internationally as well.

Additional limitations are inherent in the use of a qualitative methodology. Qualitative approaches suffer from a lack of generalizability, which can make their results difficult to apply to future policy and action (Rossman & Rallis, 2003). It would be beneficial to follow this initial study, which seeks primarily to understand a phenomenon and its results, with quantitative research into the nature of the results as uncovered by this research. Several recommendations for additional research are made in Chapter 7.

## **Chapter 4: Federal and Private Sector Involvement in Hazard Mitigation Prior to the Disaster Mitigation Act of 2000**

This chapter describes the historical context of both federal and private sector involvement in hazard mitigation in the United States prior to the passage of the Disaster Mitigation Act of 2000 (DMA 2000). This description will look at both early hazard mitigation planning efforts and at examples of post-disaster mitigation to see just how the roles of the private sector, of the government, and of individuals came about and how they have changed over the time period leading up to DMA 2000. This chapter begins with a historical overview, followed by a discussion of 1) the ways the various sectors have interacted with each other; 2) the roles they have played; and 3) an analysis of the range of options regarding which sector ought to be responsible for the provision of hazard mitigation as indicated by the literature as well as applied in practice, a question which has sparked considerable controversy.

### *A Historical Overview of Hazard Mitigation Prior to the Disaster Mitigation Act of 2000*

In order to adequately chart the evolution of federal government involvement in hazard mitigation, it is necessary to begin by looking at the federal government's involvement in disaster recovery. The federal government has been involved in disaster recovery as far back as at least the early 1900s, but this involvement was isolated to particular events, and there was little to no involvement in hazard mitigation efforts. Early efforts at hazard mitigation were either undertaken by individuals or by corporations for their own protection or were driven by economic considerations and/or the insurance industry. An excellent example of this followed the Great Chicago Fire of 1871 when pressure from the private sector led to the adoption of fire codes by the public sector in many parts of the city.

More extensive federal involvement with hazard mitigation, although still driven by disaster events, began with flood-protection efforts. These efforts focused solely on structural

mitigation projects following a series of flood disasters. Beginning in 1917 and culminating in 1944, Congress passed a series of Federal Flood Control Acts; they led to the federal government taking on the costs of constructing structural mitigation projects such as dams and levees and to giving the U. S. Army Corps of Engineers (USACE) a major role in disaster recovery efforts (FEDERAL, 1996). During this time period, disaster recovery efforts were piecemeal, were not associated with any particular federal agency (despite the growing role of the USACE following floods), and were dependent upon congressional or presidential action. For example, Congress provided some disaster recovery funds for a series of significant floods, including the 1927 flood. It is unclear the extent to which the federal government utilized private contractors in these early efforts (if they were utilized at all); however, private sector entities do appear to have been actors in some of these efforts. For example, many of the early USACE studies utilized local engineers (Respondent 3).

In 1950, this piecemeal approach changed when disaster relief for victims of flooding was made into official policy with the passage of the Federal Disaster Act (FEDERAL, 1996). This legislation occurred in a period of continuously increasing floodplain occupancy and of a growing belief among individuals and local governments that the federal government would step in and offer assistance once an area had flooded (Wright, 2000). The national culture of disaster recovery (and hazard mitigation efforts by extension) shifted away from the model of 1871 in which individuals and corporations occupied the primary role without government involvement. By the 1960s, the increase in federal expenditures on disasters coupled with the increasing number of individuals at risk had institutionalized the costs to the federal government and set the stage for additional federal legislation to be put in place, as described further below.

Throughout this time period, the USACE often remained the primary federal agency involved in disaster recovery. It also began to create Reconnaissance Reports for communities with significant flood problems. These reports followed a systematic method of taking a basic look at the flood problem, looking at alternatives, and determining if a flood control project could be done. In many cases, these reports indicated that structural projects would not be an option, and they helped to shift the focus to smaller projects that the states and communities could do. This was a driver for local planning efforts in Illinois (Respondent 2). (These efforts will be described later in this chapter). However, the reports themselves focused on large flood control projects. Their influence on local efforts depended very much on local officials who could choose to use them as a means to spur local action. Over time, the USACE moved away from doing those reports; their focus shifted to more exact planning for much larger projects.

#### *The National Flood Insurance Program*

As described above, the growing federal role in and increasing expenses related to flood recovery set the stage for the creation of the National Flood Insurance Program in 1968, which was the first significant public sector involvement in mitigation prior to a disaster (Respondent 1). Earlier efforts had focused primarily on disaster recovery and not on the incorporation of mitigation, much less mitigation outside of the recovery context. The NFIP made flood insurance available to homeowners in participating communities, something which private insurers were not able to offer due to the high level of risk and to the challenges of maintaining a sufficiently diverse portfolio to diversify that risk (FIFMTF, 1996). The private insurers simply could not provide flood insurance policies at a low enough premium for a sufficient number of policies to be purchased. Although many respondents did not consider the NFIP to be an example of a federal mitigation initiative, it was in fact created in part to reduce losses to the

federal government following floods (Respondent 1). Initially, the insurance component was managed by a consortium of insurance companies known as the National Flood Insurance Association (NFIA). These companies “were used to hazard mitigation, had grown up with the accepted concepts of reducing risks, reducing consequences, through zoning and building codes” (Respondent 1). This partnership model between government and private insurers allowed for greater ease of arbitration and brought together the expertise of companies and individuals who were trained in reducing risks and consequences. The insurance industry, as illustrated by the Great Chicago Fire, had long been a driver of risk-reduction efforts (Respondent 1).

However, some within the Department of Housing and Urban Development (HUD), which was then responsible for disaster response, were concerned at a lack of transparency in the process of determining damages, feeling that HUD was simply being billed for damages without transparency in the claims process (Respondent 2). The role of private insurers was reduced in 1978 when the decision was made to shift away from the use of the private sector and to the use of the federal government to manage the NFIP. However, the private insurers were later re-engaged through the Write Your Own (WYO) program under President Reagan and eventually managed over 90% of all policies, but did not assume the risk (Respondent 2). There was a concern that the insurance industry was making too much money and that the system had been designed to place greater costs on the government than on the private insurers (Respondent 1). Unfortunately, detailed records regarding flood insurance policies at this time are not available; it is unclear if there was indeed any impropriety (Respondent 2). This is particularly interesting considering the fact that the federal government entered into the insurance market specifically because private sector insurers did not consider it economically viable to offer flood insurance at rates that homeowners could afford. This shift had several negative consequences for both the



federal government and for policyholders. Some respondents argue that the focus on insurance as a driver of risk reduction was lost at this time (Respondent 1). Private companies are still responsible for wind coverage, leading to challenges in disasters such as hurricanes where flooding and winds occur simultaneously. This has often resulted in battles over which damages are caused by wind or by water (flooding). These battles are difficult to resolve without the partnership of coverage within the same entity, despite the fact that insurance companies are still involved through the Write Your Own (WYO) program. Whereas initially the need to reduce costs (profit motive) drove hazard mitigation, it now drives insurance companies to declare that flooding has caused damages (including more recent court battles regarding the distinction between wind-driven rain and other sources of water damage) and are therefore not their responsibilities (Respondent 1). This results in harm to the policyholders due to the fact that they must await resolution of this conflict to receive their insurance award to begin rebuilding.

It is also interesting to note that the mandatory purchase requirement, which requires borrowers who are purchasing a home within a mapped flood zone to purchase insurance, has been consistently ruled by the courts to represent protection of lenders and not just of homeowners (GFW Forum, 2010). This is particularly relevant because the protection of the lenders helps to ensure the continued availability of home loans within the floodplain and potentially contributes to the further development of the floodplain. This in some ways supports the arguments that the NFIP has promoted development of the floodplain by both subsidizing insurance and requiring its purchase when a mortgage is secured.

During this same time period of growing federal involvement, and beginning in 1973, HUD was given authority over disaster relief and recovery, which it retained until the formation of the Federal Emergency Management Agency (FEMA) in 1979. The Federal Disaster

Assistance Administration (FDAA), a subset of HUD, was responsible for disaster operations and utilized disaster reservists<sup>20</sup> in addition to some full-time staff in its response efforts. Once FEMA was created, it continued that policy of utilizing reservists to increase capacity following a disaster. The reservists served the same function as private sector contractors, supplementing existing federal staff when additional resources were needed. The reservist model is, in some ways, an alternative to direct, private-sector involvement which is also utilized by FEMA. Some of these reservists spent years responding to a variety of disasters and began to ask “Why are we putting this back the same way? Is this a non-efficient use of government funds? Isn’t there a better solution? Haven’t we been in this town before? Haven’t we fixed this bridge before? What are the costs” (Respondent 12)? Although FEMA officially recognized mitigation as one of the four phases of emergency management, it was pretty much treated as “just an idea in the mind of a number of researchers” (Respondent 14). Initially, mitigation was considered to primarily consist of building codes and construction standards (both of which are controlled locally); perhaps this was due to the earlier role that played by HUD. There was little to no money associated with mitigation at this time. Although federal expenditures on recovery had increased dramatically, the NFIP, with its flood mapping program and the requirement for local flood ordinances that reflected the flood map risk, was still the significant federal mitigation effort outside of isolated actions by reservists and others (Respondent 14). In fact, the effectiveness of the NFIP as a risk reduction measure, or even as a means of reducing government expenditure in disasters, has been called into question, as is described further in this chapter. Although the NFIP did require that certain regulations be met, it also had the adverse effect of increasing federal expenditures through the payment of claims to homeowners who built their homes in high-risk areas.

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<sup>20</sup> Individuals who were called upon following a disaster to serve as temporary employees.

### *The Blizzard of 1978*

HUD did lead an extensive mitigation effort following the “Blizzard of 1978” along the New England coast. Following the blizzard, the substantial damage requirements of the NFIP were enforced for the first time, showcasing the role of the NFIP in promoting hazard mitigation during recovery when utilized in this fashion (an example of the power of street-level bureaucracy and individual discretion). Substantial damage requirements are triggered when a structure is considered to be more than 50% damaged. In cases of total destruction it is clear that substantial damage has taken place, but there is a greater amount of subjectivity when damages are moderate or not clearly visible from the exterior of a property. In many instances local officials under designate the number of substantially damaged properties in an effort to alleviate the potential regulatory burden on homeowners. However, this only serves to promote their continued high risk. HUD employees chose to actively enforce and promote substantial damage requirements, in part by showcasing the value of hazard mitigation.

An additional resource from the NFIP was Section 1362, referred to as the 1362 Program. It allowed for the buyout of properties. This was part of one of the first concerted federal efforts at post-disaster hazard mitigation. The recovery effort included the compilation of the first post-disaster hazard mitigation report, and it marked the first real organized effort to integrate HUD’s flood insurance program into disaster relief efforts. Mitigation efforts in New England were driven by committed HUD staff and were supported by state leadership (Respondent 1). They included elevation of homes on a voluntary basis, wet flood proofing<sup>21</sup>, dry flood proofing<sup>22</sup>, and other innovations. The Small Business Administration took on a role as well, paying out disaster

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<sup>21</sup> Wet flood proofing is the use of materials that can survive brief inundation and other mechanisms to minimize damages when water does enter a structure.

<sup>22</sup> Dry flood proofing is the use of sealants, short walls, and other mechanisms to prevent water from entering a structure.

loans that, for the first time (following the intervention of the Lieutenant Governor of Massachusetts and the Speaker of the United States House of Representatives), included hazard mitigation elements. The interest of the Lieutenant Governor in promoting hazard mitigation was a key driver of the efforts that followed and illustrates the extent to which one individual can have a significant impact (Respondent 1). In fact, individual action and community desire for change appear to have been far more of a driver than was the existence of federal policies, although it can be argued that the existence of federal programs was a key resource to this effort (Respondent 2, Respondent 8).

Just as there were in New England in 1978, over the course of the 1980s and early 1990s there were isolated efforts at hazard mitigation across the nation. These efforts were dependent upon having a committed individual in a leadership position, such as the Federal Coordinating Officer (FCO), upon the knowledge or interest in mitigation of the disaster reservists responding, or upon having a state that was already progressive in that regard; however, hazard mitigation at this time could be described as a “guerilla” effort (Respondent 1) by some dedicated FCOs and others within FEMA and in certain states; it “had a lot to do with personal leadership and personal values” (Respondent 1). When hazard mitigation was undertaken, it was done quietly to avoid controversy or push back by agencies—another example of street-level bureaucracy at work. The philosophy among those who promoted mitigation was to avoid documentation and to use public assistance and other funding sources, such as SBA, as creatively as possible to do what needed to be done. “We just wanted to do what had to be done and then leave” (Respondent 6). However, in cases where state government was very supportive, such as in Massachusetts in 1978, a great deal could be accomplished. Unfortunately, as late as 1990, the mantra remained: “Restore to pre-disaster conditions” (Respondent 1). Through the early ‘90s,

more and more likeminded people began pushing for hazard mitigation, and it gained greater acceptance.

In addition to these isolated efforts, there were changes at the federal level that helped to set the stage for increasing hazard mitigation. One of these changes, in the early 1980s, was the formation of the Flood Hazard Mitigation Task Force as a result of a 1980 OMB directive that all federal disaster assistance programs incorporate mitigation (Respondent 6). The Task Force was composed of twelve federal agencies that provide technical assistance for non-structural measures during the recovery phase, and its goal was to ensure that personnel would be available to search for obstacles to mitigation in current policies and to participate in post-disaster teams (Wright, 2000). As a result of this OMB directive, interagency teams were convened by a mitigation officer following a disaster; they created hazard mitigation reports, also called 15-day Reports. This team would include representatives from USACE, SBA, National Weather Service (NWS), and others. It was given 15 days to identify ways in which existing programs could be used for hazard mitigation and to identify opportunities. The teams also created a 90-day follow up report.

Many respondents saw these teams as excellent mechanisms for fostering collaboration among federal agencies, for promoting coordination between the state and federal efforts (and occasionally the local), and for focusing on mitigation. Much like the role of committed individuals, the institutionalized creation of collaborative groups, which (as described in Chapter 2) could function as performance regimes, resulted in a great many successes; however, these groups were more effective in some regions than others, depending greatly upon their implementation. In some cases, the 12 federal agencies would send different representatives to each meeting or would send individuals who only had knowledge of their own program, not of

the range of programs offered by their agency (Respondent 12). Although the various federal agencies, such as the Department of Agriculture, all had or were developing relevant programs for funding and technical assistance, these programs were not always utilized or brought to the attention of the teams. This conundrum remains a challenge today. The wide-range of programs available is not widely known, and there are various challenges to face in making the guidelines work with each other, a problem which has only been exacerbated by the now long history of program implementation and resulting bureaucracy. The Coastal Barrier Resources Act of 1972, which prohibited the expenditure of federal resources on undeveloped barrier coastal islands (denying flood insurance and disaster assistance to anyone who developed those areas), was a key tool as well.

#### *Federal Emergency Management Agency*

FEMA Region VIII<sup>23</sup> was one region that quickly saw the value of mitigation. It took steps to convene the team outside of disasters and to identify the most appropriate individuals from the agencies represented. The team in Region VIII was headed by FEMA reservists, many of whom had come out of graduate programs at the University of Colorado and were focused on floodplain management; as previously described, other regions also utilized reservists and followed the model set by Region VIII. This key role for reservists remained in place until the regions began to hire full-time mitigation employees. Between 1980 and 1982, the team in Region VIII wrote the first Standard Operating Procedures for a hazard mitigation team. It also served as a leader in mitigation planning. By 1986, Region VIII had statewide multi-hazard mitigation plans and mitigation officers in every state (Respondent 12).

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<sup>23</sup> FEMA Region VIII includes the following states: Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming.

Around this same time, FEMA created the first all-hazard pre-disaster mitigation grant program, the Hazard Mitigation Assistance Program (HMA). In its first year, the program provided \$18,000 grants to each region. It was created in response to a request from Region VIII for funding to conduct a study to assist a local community in Colorado with creation of a local storm water management district. At the time of the request, FEMA Headquarters had some funding that could be made available but had to ensure its equitable distribution across regions. As a result, the one-time funding request became the responsibility of the HMA and was made available across the nation (Respondent 12).

In the late 1980s, as FEMA began to create mitigation offices and positions, some reservists who had been active in previous post-disaster mitigation efforts were unable to secure the positions due to federal hiring criteria (e.g., the requirement to provide preference to veterans and former federal employees). Many of these reservists went on to work for the private sector, either as individual consultants or in positions with the larger firms, continuing their existing model of periodic engagement with FEMA. As FEMA staff members who were engaged in mitigation retired in the mid- to late 1990s, many also moved into private sector positions (Respondent 12).

The interagency team process remained in place until the 1990s and allowed FCOs who wanted to promote hazard mitigation to pull together broad coalitions. The absence of dedicated funds sparked creativity and forced many agencies to bring resources to the table (Respondent 14).

Over time, the various federal agencies developed technical assistance and funding programs. This played a key role in the response to future disasters. Some of these programs had begun as early as the 1970s and 1980s. The Department of the Interior, which houses the U. S. Fish and Wildlife Service and the U. S. Geological Survey, had twenty-six programs with which the

interagency teams actively worked. Another resource was the 1988 Upton Jones Amendment to the NFIP. It allowed for the relocation of coastal properties at risk of imminent collapse, without having to wait for the properties to actually collapse or be significantly damaged. This allowed the NFIP to spend less on relocation than the cost of a full insurance claim. Projects funded during this time were done with comprehensive packages of funds from various agencies and the affected states. In Illinois, for example, FEMA funds were used to purchase insured buildings. HUD funds were used to purchase those structures where the property owners met income requirements, and state funds covered the rest.

An important piece of legislation in the late 1980s was the Robert T. Stafford Disaster Relief and Emergency Assistance Amendments of 1988. The stated reasons for the amendment are as follows: “ (1) because disasters often cause loss of life, human suffering, loss of income, and property loss and damage; and (2) because disasters often disrupt the normal functioning of governments and communities, and adversely affect individuals and families with great severity; special measures, designed to assist the efforts of the affected States in expediting the rendering of aid, assistance, and emergency services, and the reconstruction and rehabilitation of devastated areas, are necessary: (Stafford Act Section, 101). It is worth noting that these reasons are premised upon the assumption that federal aid will be provided to affected states.

The stated intent of the Stafford Act is as follows: “It is the intent of the Congress, by this Act, to provide an orderly and continuing means of assistance by the Federal Government to State and local governments in carrying out their responsibilities to alleviate the suffering and damage which result from such disasters by doing the following: (1) revising and broadening the scope of existing disaster relief programs; (2) encouraging the development of comprehensive disaster preparedness and assistance plans, programs, capabilities, and organizations by the States and by



local governments; (3) achieving greater coordination and responsiveness of disaster preparedness and relief programs; (4) encouraging individuals, States, and local governments to protect themselves by obtaining insurance coverage to supplement or replace governmental assistance; (5) encouraging hazard mitigation measures to reduce losses from disasters, including development of land use and construction regulations; and (6) providing Federal assistance programs for both public and private losses sustained in disasters” (Stafford Act, Section 101). The specific language utilized within the Stafford Act is particularly interesting. Item number (4) specifically cites insurance coverage as a means for supplementing or replacing governmental assistance, despite the fact that the NFIP is heavily federally subsidized. Also, item (5) specifically describes the encouragement of land use and construction regulations both of which are largely outside the purview of the federal programs. Although federal mitigation dollars can be used for projects such as acquisitions, which remove existing properties from the hazard area, land use has not been the focus of the vast majority of programs which have followed. In fact, it is worth noting that acquisitions of existing properties are not an example of utilizing land use constraints to prevent at risk development, instead they remove existing development which has experienced a certain degree of loss.

Overall, the Stafford Act made changes to existing relief programs to increase mitigation and to encourage acquisitions. The inclusion of management costs within the Stafford Act funding allowed states to play a larger role in the management of funds and mitigation projects, but it also opened the door for some of the recovery contracts in place today. The act was intended to guide rebuilding towards non-hazard areas, thereby reducing future exposure to risk following reconstruction (Wright, 2000). It also created the Public Assistance (PA) program that allowed for the incorporation of hazard mitigation into the repair and replacement of damaged

elements of public buildings and infrastructure. The federal government was becoming aware that simply rebuilding in a hazard-prone zone might lead to the need for additional federal aid in the future but was limited in its ability to promote or demand local change.

Hazard Mitigation Plans following a Presidentially declared disaster were required under Section 409 of the Stafford Act. Within the guidance documents, FEMA specifically mentioned land use and construction practices as components of successful hazard mitigation efforts. The 409 guidance also recommended that local plans be developed for areas with repetitive events and/or extensive damage from a particular event. The guidance described existing hazard identification and capability assessment studies which had been completed for every county in the 1980s. Although this guidance helped to set the stage for the later guidance under DMA 2000, the concept of a nationally maintained database of hazard identification and capability assessment studies was not a part of the conversation at that time. In fact, these studies were not mentioned by any respondents, including many who expressed concern about the ability of local communities to undertake technical risk assessments.

Section 404 of the Stafford Act created the Hazard Mitigation Grant Program (HMGP). It allowed for hazard mitigation projects following a declared disaster. Originally, up to 10% of the monies allocated to recovery could be used for mitigation, a number that was raised to 15% following the 1993 flooding and was subsequently reduced to 7.5% when the amount of Pre-disaster Mitigation funds available were increased (Hinshaw, 2006). The goal of this program was to reduce future suffering and damage by reducing future losses. Initially, under Section 404, there was a 50/50 cost share, and few communities took advantage of the available funds. This was changed to 75/25 following the 1993 floods, with the federal contribution being the 75%. Perhaps the most important effect of this Act was that it made FEMA formally responsible

for implementing hazard mitigation. Previously, hazard mitigation had not been considered a key role of any one agency, or even of the federal government, despite the creation of the NFIP and the role in response being played by several agencies such as the USACE. The assignment of that responsibility to a particular federal agency indicated a sea change in the federal emphasis on hazard mitigation and a tremendous shift from the days of guerilla FCOs finding ways to make hazard mitigation work. Additionally, states were encouraged to begin creating hazard mitigation plans and were able to receive assistance from the 10 regional FEMA offices to do so (Godschalk et al., 1999).

As the range of federal hazard mitigation programs expanded in the 1980s, the corresponding private sector organizational infrastructure expanded as well. Large engineering firms had become involved in the flood plain mapping program under the NFIP, and many other small industries, such as home elevation, were growing in response to greater demand for their services following the release of federal funding for these activities. Regional and local firms became involved in mitigation efforts within their geographic areas, and individual consultants established themselves, often as they left public sector employment. Large firms, which were not yet ready to build hazard mitigation product lines, turned to these few consultants to bring the needed expertise as they sought to enter into the developing mitigation marketplace (Respondent 12). While initial private sector involvement in hazard mitigation was focused heavily on protecting private sector assets and interests, the newly emerging mitigation marketplace established hazard mitigation services as a product line (Respondent 12). Private sector firms, particularly the national and international firms, continued their own efforts to protect their assets under the umbrella of risk management.

Several programs were created in the 1990s to promote hazard mitigation. These included 1) the creation of the Community Ratings System (CRS); 2) the addition of Increased Cost of Compliance (ICC) to the NFIP as a result of hearings in 1990–1991; and 3) the Pre-Disaster Mitigation Program (see following page for descriptions). These programs illustrate a growing federal role in hazard mitigation through local and state incentives, grant programs, and mandates. At the same time, these new programs, with the accompanying regulations, began creating a greater need for expertise in the public sector to handle grants management. The new programs also created a greater need for review capabilities at the federal and (occasionally) state levels (Respondent 1). The 1993 Midwest floods were a key event during this time period; existing programs were expanded, and others were created, after which FEMA played a significantly increased role in mitigation efforts. The need for grants management and administration assistance further expanded the private sector mitigation marketplace, as will be described further on in this chapter.

### *The Community Rating System*

One of the programs in place prior to the 1993 floods was the Community Rating System (CRS); it was implemented by FEMA in 1990 but was discussed as far back as the mid 1980s as a way to reward communities that exceeded the minimum regulatory standards for flood plain management (including risk reduction through ordinances) as set forth by the NFIP. The CRS is administered by the Insurance Services Office (ISO), a private firm that has many other federal and state clients looking to identify and to mitigate risk. ISO initially participated as a stakeholder in the first CRS Task Force, created in 1987. ISO was invited to participate in the Task Force because of its expertise in rating communities for fire. Other stakeholders with experience in risk reduction were included, such as representatives from ASFPM.

The primary goal of the program was to encourage communities to practice comprehensive floodplain management. Participating communities are rewarded through a system of lowered insurance premiums (Wright, 2000). The CRS included a planning component and recognized the key role of a comprehensive planning process. It was eventually used as one of the models for the development of federal hazard mitigation planning guidance. The management model of the CRS is quite interesting; FEMA appears to maintain a significant level of involvement with ISO, in addition to utilizing individual contractors, in more of a partnership model than is traditionally the case for federal contracts. In fact, ISO does not actually have a contract with FEMA. Instead there is an “arrangement” in place modeled after the WYO system, which allows FEMA to pay for “rate-making assistance” (Respondent 2). At the time in which ISO was approached by FEMA to assist with the creation of the CRS, there was a great deal of distrust between the insurance industry and the federal government; it had only been a few years since the NFIA had been removed from their role with the NFIP due to HUD’s concerns regarding transparency. Although ISO worked closely with FEMA as a stakeholder, there was concern about entering into a contract with the federal government; however, FEMA recognized that ISO had ratemaking expertise and that it was uniquely qualified to assist with the creation of a program such as the CRS. In order to secure the participation of ISO, which explicitly did not want a federal contract (and all of the complications they involve), FEMA worked with a group of WYO insurance companies to fund the assistance by ISO, because the WYO had an existing arrangement with FEMA which did not involve a specific contract. The partnership model that exists between ISO and FEMA appears to be a function of the commitment of ISO to risk reduction, of the continued involvement by the same individuals from the creation of the CRS up until the present day, and of the relationships that have been

established. It is unclear whether the contracting mechanism utilized has had any real impact on the outcomes (Respondent 2). It is interesting to note that the lack of an actual contract means that components such as non-discrimination are not explicitly required. This arrangement stands as an interesting, seemingly productive form of public–private implementation of a new (at the time), innovative concept. That it has remained functioning in a form similar to how it was conceived for over 30 years makes it worthy of continued attention.

In 1991, Disaster Assistance Employees received the very first formal hazard mitigation training. This training, building upon the successful mitigation efforts of the 1980s (in which those contractors had been involved), was developed by FEMA with the assistance of some individual contractors. As previously described, FEMA reservists had been involved in mitigation efforts for some time, but there was no formal mechanism in place to promote or to teach hazard mitigation. Some regions had very committed reservists who were knowledgeable, and others did not. The implementation of this training led to the brief norm of FEMA having a cadre of people in place who understood mitigation, who could easily become temporary full-time employees following a disaster, and who could help implement hazard mitigation following a disaster. FEMA, much like the states, could not sustain a large enough disaster recovery and mitigation staff to be prepared for the eventuality of a major disaster. Utilizing a cadre of individuals who could be hired as needed reduced FEMA’s normal operating costs. To this day, FEMA utilizes reservists. These reservists often function as private contractors, still known as DAEs, and occasionally increase FEMA’s staff through standing contracts with the larger firms. This cadre was in place at the time of the 1993 Midwest Flooding, often considered a turning point in national policy regarding mitigation because it led to a national policy shift towards relocating families outside of the floodplain (NWF, 1997). The flooding, which affected over

80,000 buildings in nine states, contributed to the growing realization that structural flood control measures alone were insufficient, thus resulting in the Hazard Mitigation and Relocation Assistance Act of 1993 (NWF, 1997).

At the time, there was a federal administration in office that was very supportive of mitigation, and a great deal of money was made available. Various federal agencies worked together to fund the buyouts by combining multiple funding programs. However, some argue that the sheer amount of money and the challenge of managing it made planning less of a priority than “just lining up all of the qualified properties” (Respondent 2). This is cited as marking a post-disaster shift away from looking at ways to make the programs work together for solutions and a shift towards justifying the expenditure of money (Respondent 2). “If there is a lot of money, your job is to get rid of it because you won’t get that money again if you don’t spend it” (Respondent 2). The need to spend the money quickly, and the fear of losing the funds if the local expertise to manage the grants was not in place, is a key component to appreciating the future involvement of the private sector. There was a need to be able to bring in experts who would not be kept on staff between disasters, and there were funds available to pay for them when a disaster occurred.

Although many respondents questioned the quality of the projects and the challenges of the process that was taking place, mitigation had become publicly accepted (Respondent 3, Respondent 5). In particular, relocation was clearly taken seriously at the federal level, and mitigation was shown to be a federal priority, both during the 1993 floods and over the following years. However, the challenges of issuing regulations for mitigation funds were tremendous. FEMA, as an organization, was conservative in its definition of mitigation, focusing almost exclusively on construction, on buyouts, and on relocations (Respondent 14). At the same time,

there was external pressure to emphasize EOC operations, communications systems, and generators. Also, there were real, local funding needs for response equipment that communities and states were trying to fit into the mitigation process, because federal funding was directed towards hazard mitigation.

Also in 1993, the FEMA Mitigation Division was established to manage the National Flood Insurance Program and mitigation programs. Its goal was to create safer communities and to reduce disaster losses (Mitigation, 2006). However the Mitigation Division had very little staff until 1995 when, as part of the continuing effort to encourage mitigation, FEMA published the National Mitigation Strategy. Its primary goal was to find the means by which to change the public's attitude towards and awareness of risk (Hinshaw, 2006). A secondary goal of the strategy was to provide resources to communities to encourage mitigation (CPCU, 2001). The National Mitigation Strategy marked a turning point at FEMA because the Mitigation Directorate became a major business segment for the organization and a major business line for its contractors. As the federal government further institutionalized mitigation funding mechanisms, the corresponding private sector grew to meet the needs of the marketplace.

Increased federal efforts to promote pre-disaster mitigation continued in 1997 when Section 203 of the Stafford Act authorized the Pre-Disaster Mitigation Grant (PDM). PDM came about as part of an effort to do more pre-disaster mitigation to reduce the impacts and costs of recovery. It was heavily lobbied for by organizations such as the National Emergency Management Association (NEMA), an organization formed in 1974 by state directors of Emergency Management; they sought to share information and to work together. NEMA represented state directors who relied heavily on federal funding for their emergency management activities and has continued to lobby strongly for maintaining existing grant



programs. As part of its passage, there was a compromise in which the percentage of disaster funding allocated to HGMP was reduced; this was due to the underlying assumption that spending money on hazard mitigation prior to an event would have a greater return than if spent following an event. Unfortunately, this premise does not take into account the impacts of continued development into at-risk areas. Nor does it take into account the possibility for some mitigation efforts, such as flood control or insurance, to potentially lead to increased development. Ray Burby (2006) has described this as a “safe development paradox” in that through its efforts to make hazardous areas safer, the federal government has increased the potential for property damage and catastrophic loss in those areas. It is important to note that this marked both a shift away from post-disaster mitigation funding and a shift away from a flood-heavy focus towards an all-hazard approach, which later characterized mitigation planning. This new approach was influenced by recent disasters that were not flood based (such as the Northridge Earthquake), as well as by frequent localized weather events such as tornadoes. Emergency management as a field was also attempting to look at the range of possible hazards that could impact their communities (cite).

### *Project Impact*

Project Impact was also introduced by FEMA in 1997 as a pilot program under PDM and as part of the broader push to increase mitigation at the local level. It was a community-based program that used a four-step approach to creating disaster-resistant communities: building community partnerships, assessing risks, prioritizing needs, and finally, building community support and communicating findings (Johnson, 1998). Unlike many other FEMA programs that responded once damages occurred, the focus of Project Impact was on prevention. It was

promoting the all-hazards approach previously discussed. All of these changes were consistent with the strategy being implemented through PDM. However, it was very unique in many ways.

Project Impact was developed from the concept that the community itself could define its needs and identify solutions to its problems, a perspective which is missing from most current programs, despite the fact that the most successful examples of mitigation all included significant community involvement, desire for change, and engagement. The program was led internally at FEMA by an individual who had a background in sociology and political science, both of which social sciences informed the program design. Project Impact was designed based on three principles: that mitigation is primarily a local issue, that local private sector participation is essential, and that mitigation requires a long term commitment (ASFPM, 2000). This is a very different view of private sector participation in which the private sector is viewed as a part of the community with a vested interest in the protection of its employees, customers, and property. Despite being found to be a cost-effective program and representing significant government savings by reducing losses, Project Impact has since been terminated (Multihazard, 2005) largely due to a change in political administrations (Respondent 8). Project Impact was closely associated with FEMA Director James Lee Witt, as well as with President Bill Clinton. As such, it was quickly terminated when a new administration of the opposing party came into power (Respondent 17).

In the first two years of Project Impact, there were seven pilots, each of which was given \$1M for its projects. The following year, each state was given \$500,000, and in the one following that, communities were given \$250,000. Eventually, communities became participants without federal funding, indicating that the program itself was seen as valuable by participants. This notion of seeding community efforts was a key component of the project. It worked so well

in some communities that community members maintained the efforts after the program was defunded entirely (Respondent 27). The challenge was how to allow communities to be creative while maintaining federal requirements. Another challenge was how to avoid just creating “grant experts”, instead creating mitigation experts within local communities (Respondent 15). As was previously described, the expansion of federal mitigation programs had generated an expertise in grant applications because of the sheer amount of effort required to locally manage the funds (eventually this would lead to the use of contractors following disasters as programs became more complex), not necessarily in hazard mitigation. Additionally the communities had to meet a lot of requirements for the right to participate; this placed a burden on their limited resources. An annual conference was used to promote peer mentoring and to allow the communities to talk with each other. There was also an element of linking practitioners and researchers.

With the exception of Project Impact, the preceding discussion on private sector participation has largely focused on the private sector’s role as a vendor of services. However, the private sector remained involved throughout the 1990s, not just through contracting mechanisms, but also by being a partner in education and outreach efforts. Following Hurricane Andrew, FEMA, Home Depot, and the American Red Cross worked together to create videos and brochures that educated homeowners on basic mitigation measures (such as the use of hurricane clips). This outreach increased the visibility of these companies and marketed mitigation products. The private sector also turned to hazard mitigation for the protection of its own assets as a means to promote business continuity, a business practice that has grown, creating its own industry of consultants to private sector firms. The various federal disaster assistance programs that had been developed did not provide much (if any) assistance to

impacted business owners (Respondent 12). In fact, it is possible that the lack of federal assistance for private firms actually spurred the development of in-house expertise in order to minimize losses post-disaster. It is interesting to note that a similar development of in-house expertise developed in some states but not among the majority. Likely the difference was that the cost of the damage was absorbed by the federal government, not the case for businesses. In addition to the growing federal role, many state governments were becoming involved in hazard mitigation as early as the 1970s. These states all had significant risks, primarily from flooding and seismic events, and all took steps to reduce their vulnerabilities. This was mostly done through comprehensive planning mechanisms, with several states including a requirement in their state planning legislation that hazards be addressed. This requirement was known as a safety element. In 1972, California, a state concerned particularly with the risk of significant earthquakes, was one of the first to do so when the state legislature passed the Seismic Safety Studies Zones Act (Respondent 17). In the 1980s and 1990s, some cities in the state were also looking at recovery and reconstruction plans, which were first tested following the Northridge Earthquake in 1994.

A 1985 report on state activity found that Maryland had funded 14 watershed studies to identify flood-prone areas and possible mitigation measures (Wright, 2000). A similar study in 1989 found that Minnesota had established a grant to assist with homeowner mitigation (Wright, 2000). Other states, such as Florida, required a flood control and coastal management element. There were many other such isolated efforts at risk reduction taking place around the nation.

In addition to the requiring of safety elements (which were specific components of comprehensive plans and were not focused on hazard mitigation efforts), other states, such as Illinois, had actively been doing mitigation planning (as far back as the early 1980s) as part of an

effort to reduce flood losses. In Illinois, this effort was driven by the Office of Water Resources. Projects were funded through the use of FEMA 1362 funds as well as through state funds. The projects were pretty much all acquisitions, due in part to the fact that Illinois had authority to purchase any flood plain lands it wanted. The projects were always preceded by mitigation plans that framed the problem, estimated funds, and included redevelopment concerns. The earliest of these plans were completed at the very end of the 1970s and beginning of the 1980s and were focused on small communities. They were prepared primarily by employees at the Division of Water Resources Emergency Services & Disaster Agency, working in partnership with federal agencies, other state departments, and with local actors. The planning process which was initially followed involved direct work with homeowners as well as efforts to identify individual actions that could be taken in frequently flooded areas. They often described development regulations, floodplain management, storm water regulations, zoning and land use (i.e., N.A. 1979).

The state eventually provided a template for these plans, in order to ensure consistency as state staff retired (Respondent 4). Through its early efforts, the state realized that, without these plans, acquisitions resulted in checkerboard effects and that communities had to have a plan for the use of the vacant lands as well as the funds to maintain them. Although many communities preferred structural flood control projects, the mitigation planning process showed that there were no economical projects for some areas, and that buyouts were appropriate.

The State of Illinois conducted annual program reviews throughout the 1980s in order to track the success of these local mitigation efforts. In some cases these reviews were conducted by contractors or university staff. Recommendations included that the mitigation plans should ensure implementation of projects identified and that mitigation plans should be a condition of

any assistance (IL DWR 1985). At times, these state successes influenced future federal policy, as will be discussed in Chapter 5.

The successes in Illinois influenced the USACE's later thinking on acquisitions, in which communities would need to show a greater amount of planning for how that land would be used. Even when the 1362 funds faded, Illinois continued funding acquisitions and began including funding in the state budget (up to \$5 million for 1993). This funding then became a match when the flood of 1993 triggered a tremendous amount of federal funding for mitigation. The increased funding shifted mitigation away from something that had just been done in a few small towns to something that was a statewide effort.

#### *Florida Local Mitigation Strategy*

Another state that had begun doing hazard mitigation planning prior to DMA 2000 was Florida. The Coastal Management Element in Florida Comprehensive Plans was a requirement by 1975. It required that coastal jurisdictions address post-disaster recovery. However, in the mid-1990s, Florida launched its Local Mitigation Strategy Program (Florida, 1997). This was a statewide initiative which required the development of local mitigation plans done on a countywide, multi-jurisdictional basis.

This effort was born out of a realization that Washington was questioning the fact that disaster costs continued to rise despite the expenditures of the mitigation programs. It was also born out of the desire of the then Florida Emergency Management Division's director who wanted to simplify grant review at the state level. It is worth noting that the focus of the program was, at least in part, on being prepared to apply for federal mitigation funds, described within the guidance as "intergovernmental coordination" and a "funding and recovery" (Florida, 1997). This focus on simplifying grants administration does not necessarily lead to the state to focus on

the important question of what areas could benefit from the greatest risk-reduction efforts, nor does it easily take into account solutions such as land use and regulations (which do not easily fit into a “project”). The planning steps required for the LMS were essentially the same as those later developed for DMA 2000; the primary goal being the identification and prioritization of eligible projects—perhaps one of the reasons why DMA 2000 has not succeeded at comprehensive risk reduction. The focus on “eligible” projects is particularly problematic because it forces an emphasis on those project types that can be funded through grants, not necessarily on the best solutions to the risk identified.

In Florida, many of the early LMS plans were heavily driven by emergency management and did not involve local planners nor pay sufficient attention to land use (Respondent 21), a fact which may have influenced the project focus described above. However, the Guidebook created by Florida did mention code enforcement and responsible development as part of risk reduction. It is worth noting that a sample Scope of Work, providing a template for a fixed fee contract for the development of the LMS plans, was provided as a template with the guidance (Florida, 1997). This indicates an early assumption that contract mechanisms would be utilized by at least some communities. DMA 2000 drew upon some of the lessons learned in Florida and actually reciprocally influenced the Florida plans being that it required that planning and land use be addressed.

#### *North Carolina Hazard Mitigation Planning*

Another state that designed a local hazard mitigation planning initiative was North Carolina. It had greater focus on integration into local, comprehensive planning than was the case in Florida (Florida, 1997; North Carolina, 2000). Although the Florida guidance did mention land use, the various guidance documents created by North Carolina went into much

greater detail on the importance of land use, zoning, integration with development plans, and sustainable development (North Carolina, 1998). The value of including hazard mitigation as a component of comprehensive planning is reinforced by the literature (Burby, 2006) but outside the purview of an emergency management agency. This is a different focus from the expenditure of federal funds, although federal funding was certainly a consideration in North Carolina's efforts as well. The State of North Carolina worked closely with the University of North Carolina's urban planning department and had access to the documents created in Florida and to the staff that had been previously working in Florida.

North Carolina published three documents as part of its voluntary mitigation planning initiative. The first of these was a Hazard Mitigation Plan Workbook to assist local communities. It included a worksheet that walked community members through the process of creating a plan, while emphasizing land use and zoning. The second was a manual which highlighted the uniqueness of each different community, described the possibility of including the mitigation plan as part of the comprehensive plan, and suggested planning for post-disaster redevelopment. It went into more detail and included technical guidance on risk assessments and other elements. Finally, there was a third document, a Tools and Techniques Manual, referred to as an "encyclopedia". It included information on regulatory tools such as development regulations, on basic planning tools such as transferring development rights, and on capital improvements and structural mitigation projects. The Tools and Techniques Manual considered potential impacts to low income residents, political challenges, and included a strong focus on plan integration. Although there is some discussion of these components within the DMA 2000 guidance, it is nowhere near as much of a focus as in the North Carolina documents.



The State of Ohio began a hazard mitigation-planning project when DMA 2000 passed but before federal guidance was available. The State wanted to have a head start and was able to do mitigation plans in 15 communities that had recently flooded (Respondent 10). Ohio created a mitigation planning guidebook that also preceded the DMA guidance.

*The Historic Role of the Public Sector, Private Sector, and Academia*

The previous section describes the history of hazard mitigation in the United States, particularly the creation of federal policies and the development of a private sector mitigation industry. Throughout this discussion, some of the various roles played by the private and public sectors were described, as was some minor involvement from academic institutions. As the previous section shows, although the public sector has obviously driven some of the hazard mitigation efforts, both at the state government level and at the federal level, it has often done so either in partnership with the private sector, in response to private sector demands (as in the Chicago Fire), or by utilizing private firms through contracting mechanisms. In fact, the private sector has historically played a key role in both disaster response and hazard mitigation efforts in addition to its continuous role in the protection of its own investments. This section expands upon the discussion of the roles played by the public and private sectors and begins to describe the role of academic institutions.

As described in the previous section, early public sector involvement in hazard mitigation was often driven by demand from private industry or insurance interests. This demand resulted in some of the first fire codes at the state level, and similarly in federal guidelines for airport safety, among other examples (Respondent 1). Public sector involvement through policies, regulations, and other actions take place at the federal, state and local levels (although the preceding section focused primarily on federal actions). The public sector role in hazard

mitigation varies across the various levels of government, across the various communities and states, between day-to-day activities and post-disaster efforts, and also by type and magnitude of a disaster event.

In terms of federal involvement, and as shown previously, institutionalized involvement stemmed from growing public expenditure in disaster response and recovery that was primarily related to flooding. At the federal level, early public investments in risk reduction were structural projects related to flood control. Creation of the NFIP in 1968 marked not only the first significant federal mitigation program (through its emphasis was on land use and flood reduction), it also increased the costs to the federal government from damages to insured properties. As a result, the NFIP provided an increased incentive for the federal government to promote hazard mitigation as a means of reducing its expenditures on claims.

Although some have argued that the NFIP was actually more of a mechanism to allow for floodplain development than it was a true deterrent, the challenges faced by the NFIP in remaining solvent (particularly once the initial public-private partnership was dissolved) spurred a great many of the federal grant programs and efforts. The institutionalization of disaster response funding, through the Disaster Relief Act of 1974 and later through the Stafford Act amendment in 1988, had a similar impact. It increased the response costs consistently born by the federal government through Individual Assistance and Public Assistance, leading to a need to defray costs with upfront measures.

This model of valuing hazard mitigation primarily for its potential impact on future costs (aka an investment now to reduce cost later) is not so different from the early impetus for private sector efforts at mitigation. In a sense, it illustrates the public sector behaving in a similar fashion to that of the private sector, a behavior that was sought after through the NPM

movement. It is also worth noting that mitigation, which is focused on reducing expenditures and not necessarily on reducing risk and vulnerability, can have the unintended consequence of failing to assist the most vulnerable within a community. The public hazard mitigation programs and policies that exist at this time are largely focused on individual structures and provide the greatest assistance to those homeowners (not renters) who have insured structures and who experience frequent losses. It is therefore critical to ask whether the goal of mitigation programs is solely the reduction of federal expenditures or the reduction of community vulnerability. Current mitigation practices do not appear to consider the overall vulnerability of the community, including the need to take into account those who are most at risk within it. This is particularly troubling because public sector provision of services is seen by much of the literature as a means of improving equity (Chamberlin & Jackson, 1987). Although DMA 2000 mitigation planning guidance does require some level of vulnerability analysis and consideration of vulnerable populations, this is not reflected within the FEMA grant programs. Essentially, in the case of hazard mitigation, it is unclear that equity was a clear goal of the public sector.

The notion that federal mitigation programs are geared primarily towards the reduction of federal expenditures, particularly those related to the NFIP, is supported by the comments of several state and local informants. At the state and local levels, several informants reported that they faced challenges in attempting to incorporate mitigation strategies which went beyond structure-by-structure solutions or which did not fall under the purview of federal grant programs. It is unclear, given the data available, whether states would have been more able or willing to utilize self-funded mechanisms for risk reduction, as a select few have and do, without the existence of federal funding and the assumption that funding hazard mitigation is a federal responsibility. This question is key to understanding the actual impacts of the federal mitigation

efforts on local mitigation outcomes. If the states and communities that have been successful would have been equally successful without the federal programs, then the primary outcome may have been the growth of an industry. On the other hand, if communities engaged in hazard mitigation which would otherwise not have, then the outcome may have been risk reduction at the local level.

The measures emphasized by the NFIP, and therefore by many of the mitigation programs, are geared at floodplains that are already developed or are pending development (Respondent 11). In fact, it can be argued that insurance is more a tool for reducing the risk to existing buildings than it is for the preservation of open space or for the promotion of safe development and building practices. One respondent reported a meeting in which the then administrator of the NFIP stated that it was not appropriate to incentivize communities against development because “a good risk is better than no risk at all” (Respondent 11). Although land use is a local decision, federal regulations and funding programs can push communities towards floodplain development and push them away from other approaches that would achieve risk reduction. As Mileti and Peek (2001) described, the inability of the United States to reduce disaster losses is clearly a consequence of development patterns and attitudes towards the natural environment.

Only one short-lived public program, described earlier in this chapter, sought to promote public-private partnerships in support of holistic and whole community mitigation efforts: Project Impact. Researchers such as Kunreuther (2006) have found that public-private partnerships can serve to promote individual mitigation actions. The program focused on reward mechanisms instead of on compliance enforcement and was geared toward local consensus around solutions to identified problems. The model for this program was based on collaboration

and partnership among many community actors, including the private sector. Another interesting component of the program was its design to be both responsive to local needs and to remain within the bounds of federal government regulations. This was constantly a challenge. This challenge appears to be present in all federal efforts to promote hazard mitigation, leading to the question of whether the federal government can truly effect positive, risk-reducing, local change. It is interesting to note that Project Impact was designed without the use of consultants and instead represented more of a joint effort between FEMA and participating communities, a further example of the use of partnerships, in this case between levels of government. This included ensuring that federal dollars were well spent while still giving communities the freedom to be creative so that they could focus on using the funds and not on becoming “grant experts”.

Many respondents cited the Project Impact model as a successful means of encouraging local action and fostering hazard mitigation. The challenge of keeping the focus on mitigation itself and not on grants management is one that exists in all the federally funded programs and one which no other program seems to have handled as well. In fact, the focus on federal grants is a key downfall of the mitigation planning efforts. However, not all Project Impact communities were successful. As with all the mitigation efforts described in this chapter, the local communities had a strong role to play in the success of the program. Those communities that had the capacity to be innovative and inclusive were far more successful. Each community structured its Project Impact program in a different way. Some were informal, but others were structured. Some of the least wealthy communities, which could be assumed to have the lowest capacity, were the most successful. However, a key component appears to have been a local advocate, partnership development including collaboration with the private sector, citizen associations, NGOs, academia, and the involvement of elected officials (a key indicator of

political support). The program eventually funded local coordinators because doing so was seen as a key component of success. The model of private sector involvement, which Project Impact utilized, was partnership based. For example, “we had one community that had a bank as a partner on to the committee and one of the first meetings they had they said wait a second you guys you’re just looking at us because you want to make available low interest loans for mitigation, but what you are not looking at is we have financial management capabilities that our people can help you guys organize that financial management if you use our skills don’t just look at us as a bank” (Respondent 15). The Project Impact communities also worked with state and federal agencies as partners and were able to access technical skills for risk assessments and other difficult components (Respondent 15). This model is particularly interesting because the federal government filled the technical assistance role now filled primarily by contractors. No other program successfully institutionalized public and private sector collaboration in quite this way.

The Project Impact model was quite different from the DMA 2000 mitigation-planning model that followed it (described in Chapter 5) in that it fostered collaboration and not simply the identification of projects. It also sought to build local capacity and to spur local action, in some cases perhaps setting the stage for the creation of local performance regimes in which broad coalitions could come together in support of a common goal of risk reduction. The Project Impact model managed in many cases to successfully navigate the challenge of creating a centralized approach without being insensitive to local particulars, a challenge described by Turgerson (2005). Under Project Impact, public and private sectors worked together in a collaborative model and not simply as contractors.

The private sector role in hazard mitigation, as described in the preceding section, has been quite varied, ranging from the collaborative model described above to one in which public entities purchase services in the marketplace. The insurance industry is a key example of a private sector industry, which has been, and remains, an advocate of specific risk-reduction efforts as insurers seek to protect their investments by requiring protective and preventative measures such as sprinklers as a prerequisite to providing insurance. In some ways, the insurance industry has even served as a model for public programs. However, the application of this model to federal programs has raised some key challenges regarding equity, as previously described. Even when programs have been authorized or mandated by the government, private industry has still played a significant role in the design of the programs (either as a model or as the designer) and often in their implementation at all levels of government. This may largely be due to the fact that the ideological climate of the late 1980s and early 1990s was marked by a strong preference for privatization with little discussion around the make-or buy-decision (Cohen & Eimicke, 2005). In fact, as was described in the earlier section, private industry initially managed the insurance components of the NFIP through a consortium of insurers (Respondent 1). Although some federal staff expressed concern at the ways risk was shared between insurers the federal agencies, at least one respondent recalled the private sector role as leading to a far better arbitration process for issues such as wind versus water. Later efforts to involve the insurance industry were limited primarily to the WYO, which focuses solely on the sale of policies and the limited engagement of ISO through the CRS.

At the local level, the private sector has a long history of involvement in floodplain management and projects. Local engineers worked with groups such as USACE on local projects and studies. These local firms had strong relationships and often “when it became a

planning effort, they put their engineers into the planning or hired planners” (Respondent 2). This shifting role will be described further in Chapter 5.

The development community, although it does not typically consider itself a part of the mitigation industry, also plays a key role in either preventing or encouraging the adoption of safer construction practices that reduce risk and vulnerability. However, it has not been a key partner in the many federal efforts and has often opposed efforts to promote stricter building codes and land use requirements. In fact, development decisions play a key role in increasing risk at the local level (Freudenburg, 2009). It is worth noting that the National Association of Development Associations was present at the DMA 2000 Listening Sessions.

Academic institutions have also played a significant role in several public initiatives, at times providing a similar type of expertise to that provided by the private sector. It is unclear whether academic institutions have followed a model that is different from that of the private sector or if they have been any more successful at building capacity. Academic partners played a larger role prior to the growth of the private hazard mitigation industry and were quite active in several of the efforts that pre-dated DMA 2000, such as efforts in North Carolina. In some communities, representatives from the academic community who were also residents were able to step up and serve as the local drivers of the process.

One example of a university professor who spearheaded a local planning process was in the town of Campsville, Illinois, where Northwestern University had an archeological dig. The archeologists and other experts became very active in the local planning process and served as a resource to the community (Respondent 2). This planning effort preceded DMA 2000.

Universities were also used as contractors to states. North Carolina contracted with the University of North Carolina’s planning school for its state-run hazard mitigation planning



effort, which was described in the previous section. University contractors put together all of the guidance materials, documents which are still described as some of the best guidance available (Respondent 3). The guidance that they created included a Hazard Mitigation Plan Workbook to assist local communities that lacked a lot of capability. A second component of the guidance was a Mitigation Plan Manual that went into greater technical detail on components such as the risk assessment.

As another example, Ohio University was looking at long-range planning for water quality and was able to assist the state with its efforts to provide technical assistance to counties undergoing early planning efforts as described in the previous section (Respondent 10).

#### *What Roles Should The Various Sectors Play?*

The preceding discussion leads to the question of what role the various sectors are most suited to play in risk reduction. At the most basic level, there is a debate regarding whether the private sector is better suited to the promotion of hazard mitigation and provision of such services for the government (part of the broader debate around privatization and whether the private sector is more efficient) or whether the government is better suited to provide such services in a fair and equitable manner. This debate takes place primarily within the public administration literature described in Chapter 2 but does not appear to have been given much consideration during this time period. There is a further distinction in this discussion between levels of government and the various types of firms (described previously in Chapter 3) that act in the private sector. Even among those actors who feel that a government role is necessary, the extent of private involvement which they advocate can range from harnessing private industry through contracting mechanisms to partnership models which make use of the expertise housed within the private market to complete local control with little to no private involvement, except as in Project

Impact, as a co-equal member of the community. Perhaps a more important consideration is the scale of the effort, with many respondents suggesting that locally driven efforts are far more effective, regardless of the implementing sector.

This debate does not appear to have significantly influenced early hazard mitigation efforts. This may be due to the political and ideological climate in which private contracting had been, and in many ways continues to be, an accepted norm for the public sector. A recent report found that using contractors, as opposed to direct hiring by the federal government, can add up to 1.6 times the cost per position and that government is failing to get market prices (Project, 2011). Despite these findings, the overall climate remains in favor of using private contractors for a wide range of services. The decision to use the private sector for hazard mitigation may also be due to the long history of private involvement and to the fact that the public programs were designed in part to reflect the private models of investing now to reduce future costs, often under pressure from private industry, and shared a similar goal to that of private efforts: the reduction of government costs. However, hazard mitigation, as an activity, does not really meet the elements that the literature would suggest make a service appropriate for privatization. Hazard mitigation is characterized by infrequent purchases, a lack of adequate information by government actors with which to compare providers, insufficient competition at the federal level, and a high cost (life safety) in the case of mistakes (Chamberlin & Jackson, 1987). In fact, in many ways, hazard mitigation as an industry exhibits some of the characteristics of market failure described in Chapter 2 (Bozeman, 2007).

During the time period covered by this chapter, there has been, within the public sector, the constant challenge of determining which agencies should be in charge of mitigation efforts.

There has also been the challenge of determining which levels of government ought to provide

guidance or regulation and just how much guidance should be provided. The majority of the federal hazard mitigation programs defer to the authority of the states, and their success is dependent on a wide range of local actors. Additionally, even if hazard mitigation is best suited to public sector provision, there is a real question regarding the capacity of the public sector to provide it. Consistent reductions in budgets, in staffing cuts, and in the inability to pay competitive wages create a situation in which the prerequisite expertise is not always available within the public sector when it is needed episodically (Frederickson & Frederickson, 2007). Chapter 5 will discuss the various models available for the management of hazard mitigation, particularly planning. In this discussion, collaborative models will be one of the avenues explored. Another successful model is the use of local expertise, regardless of the sector that provides it. As an example, local engineering firms can provide continuity and tend to be active in local projects. To a large extent, the local desire for hazard mitigation in the self-interest of the community, coupled with the development of a performance regime, appears to be a greater predictor of successful hazard mitigation than the role played by the government or private sector. Chapter 5 will continue to explore these themes from the time period in which DMA 2000 was signed into law up until the present day.

## **Chapter 5: Federal and Private Sector Involvement in Hazard Mitigation During the Development and Implementation of the Disaster Mitigation Act of 2000**

This chapter describes the historical context of federal involvement in hazard mitigation in the United States in the time period during which DMA 2000 was initially developed and implemented up until the present day. This time period, beginning in the very late 1990s, included the development of the associated hazard mitigation planning guidance. Much like Chapter 4, this chapter begins with a historical overview, followed by a discussion of the ways the various sectors and levels of government have interacted with each other and the roles they have played. It also begins with an analysis of the discussion and models regarding which sector ought to be responsible for the provision of hazard mitigation. This chapter continues the discussion begun in Chapter 4 regarding the public and private roles, including early state efforts, describing the creation of DMA 2000 guidance, development and peaking of the mitigation industry, changes in post-disaster hazard mitigation, and growing concerns regarding the quality of hazard mitigation. As this chapter will show, the role played by the private sector was significant and was premised on the assumption that private involvement was necessary for most mitigation efforts.

### *The Creation and Early Implementation of the Disaster Mitigation Act of 2000*

FEMA had been looking at local planning efforts, such as those described in the previous chapter, as far back as 1979, with the NSF study on land use planning previously mentioned, and had been requiring state hazard mitigation plans for some. The deliberations around mitigation planning included having individuals who had been active in the early mitigation plans in Illinois testify before a House Committee from 1989-1991, along with other groups such as NEMA and ASFPM, as described in Chapter 4. Their testimony focused on the need for money to get plans

and projects funded (Respondent 2). These hearings laid the groundwork for creation of FMA, ICC, and other efforts in the 1990s, which were described previously. Although these hearings helped set the stage for passage of DMA 2000 and for FEMA efforts to promote hazard mitigation planning, they had the unintended consequence of focusing discussion on the need for funding above the need for collaboration and local engagement (both of which are clearly identified as important by the literature).

The Congressional Record, for both the House and Senate, shows that discussion regarding DMA 2000 (H.R. 707) focused primarily on reducing the impacts to people and property from natural disasters. Various senators and congressional representatives shared statistics regarding disaster losses in their particular states and described the inability of insurance to fully cover the needs of people. They cited the support of agencies such as FEMA, NEMA, ASFPM, the National League of Cities, and the American Red Cross as well as potential savings to the federal budget of up to \$109 million over the first five years (Congressional Record 1999, H965). The conversation in the Senate, in particular, referenced “months working closely with FEMA, the States, local communities, and other stakeholders” in the development of the bill. Congressman Oberstar stated that: “The cost of the Federal, state, and local response to disaster has been going up incrementally and, in the last few years, almost explosively with the number of disaster and the greater intensity of disasters we are seeing.” (Congressional Record 1999, H966) The need for public-private partnerships was also described as key to effective mitigation. The congressmen who spoke in favor of the bill were from states which had experienced recent disaster such as California and Florida.

Beyond the legislative efforts, FEMA headquarters staff members were aware of hazard mitigation programs in states such as North Carolina and Florida and were engaging in dialogue

with some individuals involved in the local initiatives. This dialogue included listening sessions, and at least some awareness of what the local guidance materials were. However, actual federal mitigation planning guidance was created by a hired consulting firm: United Research Services Corporation (URS). URS was established in 1951 as a commercial research group in the physical and engineering sciences. By the early 2000s, URS had expanded through various acquisitions and began focusing on architectural and engineering practices as well. One of these acquisitions, EG&G Technical Services, was a long-time provider of technical support to the Departments of Defense and Homeland Security. This acquisition positioned URS as one of the primary U.S. federal services contractors<sup>24</sup>.

As described in Chapter 2, the hazard mitigation-planning program was created at a time when the private sector played an increasing role in the implementation of many federal programs. Within FEMA, there were already many existing contractual relationships with engineering firms, particularly ones that involved working on floodplain mapping. There were also many existing contractual relationships with firms that were assisting with the hazard mitigation grant program (application review for technical components such as the risk assessment), and they were well positioned to simply add a product line (Respondent 3). These firms already had offices established in Washington D.C. to pursue just these kinds of contracts. Given the existing relationships that these companies had with FEMA and given the prevailing climate of using private sector contractors, they were tapped early on in FEMA's hazard mitigation efforts and were able to leverage that involvement to obtain hazard mitigation work locally.

The decision to hire a contractor—instead of creating the guidance in-house or in partnership with the states that had already undertaken these efforts—appears to stem from the

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<sup>24</sup> [http://www.urscorp.com/About\\_URS/index.php?s=2](http://www.urscorp.com/About_URS/index.php?s=2)

habitual reliance on contractors. The National Flood Insurance Program, as one example, relies heavily on contractors for flood insurance mapping. Greenhorne, O'Mara, Dewberry & Nealon (Dewberry) is one example of a national corporation that has served as a key HUD/FEMA contractor since the 1970s. Dewberry began in the late 1950s in Arlington, Virginia as an engineering firm involved in development of the beltway suburbs. Dewberry's involvement with flood insurance mapping began in the 1970s and marked the beginning of significant contracts with HUD and FEMA. Dewberry, much like URS, later became active in hazard mitigation planning.

#### *The Creation of the Guidance for DMA 2000*

URS, which was described previously, was hired by FEMA in the fall of 1999 to develop hazard mitigation planning guidance (which eventually became the guidance for DMA 2000). URS utilized several other beltway firms as subcontractors for the effort. Firms such as URS drew upon staff with a range of experience levels and had a great deal more engineering expertise than planning expertise; many actually had to hire planners and then educate them in hazard mitigation (Respondent 5). As the federal programs helped to create a mitigation industry, firms such as URS would go on to use their existing networks in states where they had offices to pursue local hazard mitigation work or acquire local engineering firms in order to do.

URS staff members were tasked to create what are now referred to as the state and local mitigation planning how-to-guides, without access to any draft materials (Respondent 5) but with the understanding that federal regulations were forthcoming. This situation resulted in what one respondent described as a "psychophrenic approach" in which the guidance documents were created as if there would be no law, while those creating it knew the regulations were being enacted, but even those within the public sector could not necessarily participate in that process

(Respondent 5). There appears to have been a disconnect between the efforts to draft the law and corresponding regulations and the effort to create the guidance. In fact, there are a series of mitigation planning guidebooks, referred to as the How To Guides, as well as a much shorter mitigation planning guidance document, referred to as The Blue Book. The How To Guides were developed as part of a FEMA push for consistency and improved quality in mitigation plans across the United States and not intended to serve as a the programmatic guidance for DMA 2000. These were separate from the efforts to enact a law such as DMA 2000, which was driven primarily by other divisions (departments) within the agency (Respondent 5). Although there had been some isolated state initiatives, and states themselves had plans, there was no overall guidance from the federal government prior to this effort.

The URS team was asked to look at the CRS process as a model, but not to mimic it; FEMA wanted communities to be able to choose to do both at the same time (Respondent 5). It is unclear why a separate process was generated when existing models were in place for a planning process which already existed and had similar goals, although they were focused solely on flooding. In addition to the question of how to set up the process, there was also a great deal of debate within FEMA over how to structure the guidance documents themselves, and eventually the vision for the guidance was that there would be core documents and additional resources for specific topics (Respondent 5). Although DMA 2000 was about to become law, the guides were not supposed to be the handbook for DMA 2000. In fact the consultant team was repeatedly instructed to ensure that they were not creating DMA 2000 guidance, a fact that puzzled many of them (Respondent 5).

That handbook was created later and was referred to as the “Blue Book”. It focused more on how to make a plan that passed the minimum standards set forth by the regulations; it was



essentially a compliance manual. This emphasis on writing a plan to meet a standard, as opposed to creating one that emphasizes the value of the entire planning process, has often been cited as one of the greatest failures of the program (Respondent 20). Although the focus on meeting the minimum requirement could stem from the initial decisions regarding the structure of the guidance, it is unclear if this was due to the contractor or to a lack of internal coordination within FEMA itself. Additionally, the broader historical context regarding the growing role of technical expertise through a focus on mechanisms such as benefit cost analysis and risk assessment (Fischer, 2005), may have influenced the perception that local communities were unable to manage the process without the help of a detailed process and technical assistance.

It is also interesting to note that the How To Guides were developed with local planners, and not emergency managers in mind (Respondent 5). Many at FEMA saw the local planners as key to the hazard mitigation effort, but were faced with the challenge that FEMA funds would go through emergency management departments. It is unclear if the disconnect between intended and actual audience was taken into account, but it certainly added to the challenges faced by local emergency managers seeking to develop these plans.

The consultants involved in developing the guidance in addition to the FEMA staff, seem to have operated from the assumption that many local communities would elect to use contractors for the writing of their plans (Respondent 5). Although the federal model had been to use contractors, many local planning efforts such as those in Illinois, which pre-dated DMA 2000, had barely relied on contractors at all. More recent models, such as the LMS in Florida, had seen greater contractor involvement. Many of the models relied on technical assistance from the State or other sources (Respondent 3). In fact, risk-assessment guidance was the first area of focus because it was expected to be the most difficult, with training sessions conducted in each

region (Respondent 8). This existing model was far less dependent on private sector infrastructure than the developers of the guidance appear to have assumed. However, the capabilities of the states to support a national expansion of mitigation planning was limited outside of those states that already had efforts in place. In many ways, it appears as though the process and guidance were made more complicated than was necessary (Respondent 5). Whether this had anything to do with the assumption that communities might hire contractors to do their plans is unclear. However, the decision to deviate from the CRS framework, by modifying the planning process while still using it as a model, is particularly important to examine, as there was existing capacity in some areas for CRS planning.

When DMA 2000 became law, the corresponding guidance documents were still in the process of being created, and some states chose to begin their mitigation planning efforts without the formal guidance. Other communities took much longer to become interested in mitigation planning, despite the consequences of not participating, i.e., the inability to access federal mitigation funds and some components of federal disaster assistance. However, many communities had been submitting applications for planning grants prior to the release of the guidance, and some received funding prior to the guidance being released (Respondent 10).

As communities began issuing requests for proposals to complete their mitigation plans, the same firms that were actively working on the guidance for FEMA were actively preparing to bid on the planning work. There was minimal discussion at FEMA as to whether there might be a conflict of interest, and firms such as URS were given the green light to go after the projects (Respondent 5). This set a precedent for the other major national firms that had existing contracts with FEMA and DHS to also expand into the local mitigation realm. The firms that were active in creation of the guidance or that were already doing similar work in other states

had a tremendous advantage over local firms. These same firms were also contracted by FEMA regions for plan-review assistance and they could point to their involvement in the creation of the guidance, something local firms could not claim(Respondent 5).

One respondent described the situation as follows:

There was no perceived conflict of interest in that and that's how I think a lot of those planning projects, especially the larger ones, went to the big firms. They could point to the fact that they were involved with crafting the guidance and then they built the track record of doing so many mitigation plans in other portions of the country. Then they could point to how many approved plans they have; that became a very strong qualification for them even over some of the smaller, perhaps more appropriate planning firms, who really knew the communities in some cases, to develop the mitigation plans. Again some of those firms [who ranged in size] may not have the prerequisite [*sic* local] expertise. (Respondent 3)

Overall, the rollout of DMA 2000 was a more drawn out process than FEMA had desired. The program design was aggressive, broad, and complex, a fact that made speedy implementation a challenge (Respondent 5). The passage of DMA 2000 helped to create a market for private sector planning that soon extended even beyond those initial engineering firms. One consultant described the process as

the time when local governments and states were ramping up to develop a lot of these local mitigation plans, grant funds were being provided from FEMA through the states, and there were a lot of RFPs out there... it was a good time, and it was really the heyday if you were in the private sector to find work, to find willing clients to hire you to help them with local mitigation planning. (Respondent 3)

As the quote illustrates, following DMA 2000, a great deal of money became available for planning, and it became worthwhile for the companies to create in-house expertise. Private sector firms had isolated expertise in certain states and had used that staff as a base for pursuing hazard mitigation planning work. Suddenly, communities that had not wanted hazard mitigation were interested because money was available, and firms were quick to pursue what appeared to be regular work.

The private sector boom described above resulted in the creation of a large hazard mitigation industry, not just at the national level but also at the local and regional levels. More recently, the private sector market has shifted due to the fact that there are fewer local communities looking for consultants to assist with their hazard mitigation planning efforts and to the fact that the amount of money made available for these efforts has declined (Respondent 3). Some states had initially set funding levels quite low, below \$20,000 for regional hazard mitigation plans, but many had allowed much larger grants of over \$100,000 for a single-county hazard mitigation plan and later reduced the grants to below \$50,000 (Respondents 3, 5, & 20). Large urban areas, particularly those funding hazard mitigation plans through PDM, are often still able to secure large grants for mitigation planning efforts. However, this is the exception to the trend. The larger firms are often unable to take on the work for the amount of money available, unless they happen to have a local office. This has made smaller, more nimble firms, far more competitive. A lot of independent consultants have left firms where they did the mitigation plans and now can do the work for a lot less (Respondent 3). The large, national firms remain the primary recipients of federal mitigation contracts (including mapping initiatives, disaster response, and hazard mitigation plan review) through standing contract mechanisms

such as the Hazard Mitigation Technical Assistance Program (HMTAP) and have expanded their operations into disaster recovery as they have withdrawn from local planning.

One significant initiative in recent years (beginning in FY 2009) has been the Risk Mapping, Assessment, and Planning (Risk MAP) effort. Risk MAP replaced the earlier Map Mod program, which began in 2004 as an effort to digitize flood maps. The transition to Risk MAP was an attempt to better integrate the mapping with the planning. FEMA has contracted with several major mapping firms to improve the availability of quality risk data, to increase public awareness regarding risk, and to support hazard mitigation planning. Risk MAP is structured as several different contracts, including one for Program Management which includes coordination among all contractors. Risk MAP and the previous map-modernization initiative undertaken by FEMA have been the primary federal contracts for the major firms involved in hazard mitigation. It is worth noting that these firms work together in many different ways through these types of contracts. The relationships range from partnerships to direct supervision, even to serving as the source for accountability as exemplified by the Project Management contract. These efforts carry far higher profit margins than local mitigation planning work, with the 2011 Customer and Data Services contract alone worth over \$125,000,000, and they allow for very close relationships between the major firms. It could be argued that this impacts the true level of competition as these firms interact with each other in myriad ways across the various levels of government.

As the disaster recovery programs have become institutionalized and as a record of previous interpretations of the regulations has come into existence, they have lost some of their initial flexibility as recent interpretations are limited to what has previously been accepted. The increased bureaucracy tied to these programs, including the complexity of the guidance and

previous interpretations, now requires a greater amount of experience and historical knowledge than was previously required. There was greater flexibility when the mitigation staff involved in a particular disaster response consisted of only 10-15 people, as was the case until the mid-90s. The smaller teams were able to work closely on issues and to be flexible in the application of regulations (Respondent 6). Joint field offices now house tremendous cadres of DAEs and full time FEMA employees. As one former public employee stated,

When the program first began we thought it was a good idea we could do it and we could get grants to do those projects that we thought were a good idea. We didn't have to really navigate through a lot of the obstacles that sort of impede the effectiveness of the hazard mitigation program today. (Respondent 14)

Components such as the cost-benefit analysis and the historic preservation requirement have also made the process far more complex than it initially was (Respondent 14), another factor leading to increased contracting at the state level. Additionally, HUD and FEMA employees who undertook the initial rogue mitigation efforts are largely retired and are now employed by the private sector. Their experience, obtained through contracting with a large firm, provides states with their own private sector cadre of sorts. These contractors, former FEMA and HUD employees, assist the states with appealing the decisions of current FEMA and HUD employees. Often, these contractors have a greater level of institutional knowledge than existing federal staff regarding the historic interpretation of the various programs, including interpretations used in other regions. They are able to show previous interpretations of guidance, including previously allowable uses of funds, in order to win appeals.

Another factor is that the amount of money available now means that funding decisions are not based on a strategic approach (Respondent 2). In other words, there is a drive to spend

the money available as quickly as possible, without engaging in a robust planning process and often without drawing upon the existing hazard mitigation plan. Instead, the large sums of money available become politicized and get used in local political agendas, often in support of local growth machines. Hazard mitigation plans are required, but there is no clear linkage between the contents of the plan and what gets funded. In fact, very different actors are often involved in the initial planning effort as opposed to the ‘spending effort’ that follows a disaster. Additional, local control over how funds are spent might lead to more strategic approaches even when a community’s strategy does not fit cleanly into a grant program (Respondent14).

#### *Public Sector, Private, and Other Roles*

As a public program, hazard mitigation planning has the potential to focus on real solutions and to take a holistic approach that engages the whole community. This section describes in greater detail the roles played by the public, private, and other sectors during the time period described above. It also details some of the concerns and challenges regarding the quality and success of mitigation efforts. Although hazard mitigation planning is federally mandated, the success of this planning depends heavily upon local implementation, including the range of actors involved and whether the plan will remain a priority following a disaster.

With the exception of federal grants, which are often the primary consideration in the identification of projects, more effective solutions, such as land use, fall within the purview of the state or locality. Even consultants describe the more effective mitigation planning efforts as those that have strong local leadership, buy-in and involvement (Respondents 3 & 21).

When asked for examples of “very good local plans”, respondents cited those plans in which “the motivation for doing plans was not FEMA money, it was to help solve the question of what to do we do to solve our flood problems, we’ve got angry citizens, we’ve been flooded, we need to

show them that we're doing something" (Respondent 2). In these instances, residents were clamoring for change, and community staffs were looking for answers. One respondent described a needed combination of political support and technical expertise (either from a consultant or in-house). Although a consultant can play a role in this type of successful plan, the respondent noted that it is necessary to keep the planner around to ensure that there is implementation. In essence, the involvement of consistent local actors and collaboration across the community appears to have more of an impact than does which sector is in charge.

However, despite the great potential for the use of mitigation planning, some locals describe DMA 2000 planning as focused on implementing a grant program and not as a planning philosophy. "There is this assumption that everything will be, every mitigation action should be done through a FEMA grant program and you're going to hire more or less a certain set of contractors to do that" (Respondent 20). This appears to be borne out by the policy of only looking at natural hazards (as FEMA funds and authority only apply there). In some cases, consultants and FEMA regions explicitly prevented communities from including other hazards in their plans, despite the fact that many planning efforts now include man-made hazards (Respondent 20).

In terms of hazard mitigation planning, and as described previously, the federal government relied heavily on contractors for both the creation of the programs and their implementation. FEMA uses its HMTAP mechanism to readily access contractors for plan review and following a disaster. There were voices within FEMA, during the creation of the mitigation planning guidance, calling for the process to be simple enough that "Joe the Barber could do it on the back of an envelope because he's had his shop here, he's lived here, he knows what's going to happen" (Respondent 8). Some of the authors of the guidance have noted that it



was simply a lot of information to put into one set of documents. This suggests that the challenges are inherent to the process and are not a function of private sector involvement in the drafting of legislation. FEMA's office of Legislative Affairs actively sought to promote mitigation with legislators, particularly following disasters (Respondent 15).

Respondents who worked for FEMA at the time that the DMA 2000 regulations and guidance were formulated reported on their efforts to influence the legislation and were able to review drafts and propose some language changes. As previously mentioned, because using outside groups as participants in the actual drafting of the rule is very challenging for a federal agency, FEMA called together a listening session in order to gather some feedback. This indicates that there were some limitations in place regarding who could be utilized formally to assist and that contractors could more readily be used. The listening session convened individuals from some local communities, representatives of various associations, and academics who had been working in mitigation. The invitees included

- ASFPM
- NEMA
- National Governor's Association
- Council of State Governments
- International Association of Emergency Managers
- National Association of Counties
- National Conference of State Legislators
- National Association of Development Organizations
- National Association of Towns and Townships
- International City/County Management Association, and

- National League of Cities.

Invitees to the Listening Session were provided with background information on the three primary topic areas to be covered: Mitigation Planning under DMA 2000, changes to the HMGP, and PDM with a focus on Project Impact. According to the information shared with participants, FEMA was seeking “views of its stakeholder groups on the new planning criteria, and how best to implement these new provisions” (FEMA, 2000). According to the notes, participants expressed concern about a focus on future projects instead of on land use as well as concern about asking local officials to undergo such a technical process (FEMA Listening Session, 2000). Additionally, both NEMA and ASFPM submitted written comments on DMA 2000. Their comments included several concerns about the technical nature of the guidance and the difficulty for small local communities to comply. Additionally, they suggested that the CRS criteria be utilized in order to standardize planning efforts. It is unclear the extent to which the consultants who wrote the final guidance utilized the information from these listening sessions.

The states, on the other hand, have traditionally used in-house reviewers for their oversight role while hiring contractors for the writing of their own plans. One exception is the State of Louisiana, which briefly used contractors for local plan review following Hurricane Katrina. However, this exception stemmed from the significantly increased demand for plan updates driven by the influx of funds. At the local level, many (if not most) communities have elected to use contractors (Respondent 3).

Some states, such as Ohio, took a strong leadership role in early mitigation planning efforts. Ohio initiated a pilot program in which the state provided risk assessment data to 15 initial communities (Respondent 10). The State of Ohio promoted local mitigation plans when DMA 2000 was just being rolled out and prior to the availability of the guidance. As a result, the

state utilized a grant to do mitigation planning in 15 recently impacted communities and created a mitigation planning guidebook to facilitate that process. In order to ensure that new plans would be in compliance, the guidance was modified as details regarding the federal guidance were released (Respondent 10). The CRS process was used as a guide, and the State placed a heavy emphasis on public involvement, including requiring grant agreements with the communities. These requirements stipulated that there would be a series of local teams and that mapping would be used in a particular way. Other states have chosen to make similar resources available, in part out of recognition that local governments lack the capacity to undertake these analyses on their own.

Lack of resources severely limits the ability of the public sector to provide sufficient oversight of contractors. Multiple respondents from the private sector reported a lack of involvement in the process by public staff, and one public staff person reported never having the time to actually read the mitigation plan in its entirety: "...I have no idea if they just copied someone else's plan and changed the name" (Respondent 20). Because they lack the technical expertise to accurately review the work submitted, public sector employees have no way of knowing if the plan is truly unique to their community. Instead they trust that it is.

Respondents indicated that many jurisdictions simply sign contracts and wait to receive a product. This process is one that fails to truly include citizen input, as opposed to a process in which the consultant is used for expertise while the local government manages the process. Although the private sector is often blamed for poor planning processes, the local community itself cannot simply exonerate itself from responsibility (Respondent 17). Across the country, communities that chose to undertake planning efforts on their own were those that had existing capacity. They saw the opportunity to have a new funding stream for

staff. As one example, the Town of Elizabethtown, North Carolina, which was one of the eleven demonstration communities that initially did hazard mitigation plans following Hurricane Fran in 1996, had a strong local champion and developed its own plan. Elizabethtown was able to use the grant funds to build its own capacity and data sources, instead of hiring a contractor (Respondent 3). Communities such as Elizabethtown either had the ability to do GIS or utilized the grant funds to develop it, and if they used consultants, then they did so solely for minimal technical assistance. However, as staff sizes are reduced, or as turnover increases, more communities turn to consultants for the second round of plans. Now the challenge is that the private sector isn't pursuing the work because of reduced grant amounts, while the public sector lacks the capacity (Respondent 5).

Florida is a good example of a state where the lack of public sector capacity has led to greater private sector involvement in the process. During early Local Mitigation Strategies planning in Florida, local governments had strong planning and emergency management staff, and there were only one or two consultants. Local capability included GIS, and they were able to rely upon regional planning agencies for assistance; therefore, the funding stayed with government agencies (Respondent 3). As there have been major cuts in local government services, and as local planners have been laid off, the state has delegated more authority to the local level.

Many respondents cited risk assessment as the reason why FEMA expected that communities would need to hire consultants. Outside of that technical component, there was an assumption that local planning departments could undertake some of the effort within the realm of their normal planning activities. However, local turnover has a significant impact on the

ability to retain institutional knowledge and EMAs are particularly fraught with turnover (Respondent 5). Also, FEMA did not make it clear that capacity building was an objective.

The availability of local staff resources also plays a key role. Larger, wealthier communities have greater resources, not just to do the mitigation planning work but also to put together requests for proposals, to submit grant applications, and to implement projects. These communities are able to secure greater funding and are often able to attract more experienced firms when they utilize contractors. Local officials report community frustration at the challenges confronted in the federal grant application process (Respondent 13). Even those officials who value mitigation planning struggle to obtain political support when the program has been sold to communities as a mechanism for accessing grants and not as a means to achieve risk reduction.

Some communities now question whether they should continue updating their plans at all, much less spend money on developing project applications as they "...will have to come out of pocket before we ever get approved for these properties, we are having to spend money to hopefully get money but we may not get that money. It is almost like a gamble" (Respondent 13). The effort required to apply for the grant is not remunerated if the grant is not awarded. Again, this discourages smaller communities that may have a greater need to pursue these resources due to the fact that their lack of staff and expertise makes their applications more of a resource drain and therefore less likely to produce results. This can be viewed as a failure of implementation in that the stated objectives of the DMA 2000 are not being met. One respondent recommended the use of regional efforts as a means to supplement local capacity (Respondent 21).

Much like the local and state governments and agencies, the federal government also struggles with a lack of sufficient in-house expertise and resources. According to one respondent, the federal government cannot often hire people with highly specialized technical backgrounds because the salaries offered them are not competitive. As a result, the federal government is far more successful in hiring generalists than specialists and turns to the private sector when that expertise is needed intermittently (Respondent 14). The intermittent nature of the need for mitigation work, at least that associated with disaster, also makes it challenging for federal agencies to meet the surge requirements on their own. It is necessary to ask, however, if the higher rates charged by consultants result in a cost savings as opposed to simply hiring more experienced federal staff at higher rates and finding ways to use their expertise on pre-disaster mitigation efforts as well.

The trend is a bit different in post-disaster hazard mitigation and grants administration. The federal government relies on a combination of contractors: FTEs, PTEs and DAEs. The states more often utilize contractors to supplement local staff in big events, while local communities are far more limited in their abilities to hire experts. Some private firms will seek contracts with local communities, but most seek the more lucrative contracts at the state level.

The focus on individual projects rather than on more complex solutions, as well as on projects that are more readily funded by federal mitigation programs, also exists in post-disaster mitigation. One local respondent describes a mismatched approach that fails to differentiate between the types of flood risk and that focuses instead on elevation. The respondent describes the limited impact and high cost of structure-by-structure elevation (in which properties that had ceased to flood following significant drainage improvements flooded again as a result of a major hurricane) as opposed to the high impact action of focusing on mitigating for the more frequent

shallow flooding, which can be addressed through area solutions and possibly homeowner funded action (Respondent 18). Although some of the actions could be financed with current grant programs, the state and city have focused completely on financing elevation. The respondent noted that the cost-benefit calculation is a factor because the larger projects do not show the same ratios as those homes that have high claims (Respondent 18).

These types of concerns, which were voiced by many respondents, speak to the need for collaboration and coordination mechanisms that can look at things such as Integrated Water Management (Respondent 18). It is unclear whether these mechanisms should be promoted by the federal initiatives, but Project Impact notwithstanding, these efforts have not been funded.

The private sector, through the various mitigation contractors, has played such a key role that private entities have essentially acted on behalf of the public sector, as can be seen in the Louisiana example cited above. However, it is also worth noting that the private sector encompasses much more than simply those firms that sell services. There is an entire private industry around the manufacture and installation of certain types of mitigation measures such as safe rooms, shutters and other items. There is also a rapidly growing elevation industry that plays a key role in promoting the use of elevation as a preferred mitigation technique. One respondent described a robust (although much smaller) private industry—composed of home elevators, independent contractors, and engineering firms—that existed as early as the mid-1980s. FEMA actively sought to encourage the growth of expertise among architects in designing structures for flooding. This action was seen as a means to promote safer building and elevation. The effort to educate architects on the NFIP was run by regional, flood insurance staff just prior to Hurricane Bob. It represented a different model of private sector engagement, one in which the federal government sought to help create a private industry. Interestingly, a similar

model was never pursued with hazard mitigation planning, in which federal training often excludes contractor staff (Respondent 25).

The private sector also plays a role as a community or state stakeholder. Despite the earlier private sector role serving as a driver of mitigation, more recently states and communities have struggled to obtain participation from this group. Private industry continues to take steps to protect its infrastructure and investments but it does not necessarily participate in community efforts. For example, most large firms maintain some risk-management staff and focus heavily on the reduction of losses, of business interruption, and of liability concerns.

The lack of emphasis on holistic solutions is also seen in private sector efforts. Many state and local informants reported pushback from both their locally hired contractors and from the contractors used by FEMA (and in one case the state for plan review) (Respondents 13, 18, & 20). One informant even compared the system of contractors to the military industrial complex, describing the sheer amount of money that is made from disasters and the current model of doing business in which grants management has become a lucrative endeavor (20). Respondents also reported a lack of understanding regarding the types of mitigation available, stating that the requests they receive from the public are specifically for HMGP and not for mitigation (Respondents 20, 18, & 10). The funds received for grants administration may be greater when there are more isolated projects.

The promotion of DMA 2000 utilized the potential for grant dollars as the primary incentive for developing a plan. “A successful plan is measured by getting grant money, that changes the orientation and what you write the plan for” (Respondent 2). As an unintended consequence, communities care more about the grants than the process (Respondent 11). This gives private sector contractors, who often also focus on the identification of projects, an



incentive to streamline their efforts in order to maximize their profits. This can mean that the firms initially utilize more qualified staff to set up a process and later use their lower-level staff to replicate the process in other communities and to fill in the blanks (Respondent 25). As a result, the consultants doing the work may know some projects to identify but do not grasp the concepts and purposes behind them (Respondent 2).

The private sector's role in local planning efforts largely stemmed from a lack of local capacity. Although there was not a high level of capacity available initially within the private sector (and that capacity may be decreasing as indicated by the shift toward template work), private firms quickly grew an industry as federal or state initiatives and grant programs to fund their work. For example, when the LMS was initially rolled out in Florida, the vast majority of communities turned to consultants because the work was unfamiliar (Respondent 21). However, the work was also unfamiliar to the consultants, and the quality of the resulting plans was quite varied. One planner described the first round of LMS plans as a "Christmas list" of projects that had no real connection back to the vulnerability assessment. It is unclear if this is a result of the general lack of knowledge and experience within both the private and public sectors or if it is a function of the fact that the LMS was in fact designed to identify projects (Respondent 21).

Another effort that predated DMA 2000 but serves as an excellent example of some of the issues around mitigation plan quality was the initial local hazard mitigation plans in North Carolina following Hurricane Fran in 1996; it also relied heavily on the use of consultants. The demonstration communities worked primarily with local planning firms which saw the mitigation plans as an opportunity to expand their market beyond land use and coastal area management plans. The processes that they undertook were not collaborative, and interactions

between the consultants and the community members were minimal. The plans essentially followed the process laid out in the guidance but were written entirely by consultants.

One state employee at the time recalls receiving some plans that had over a dozen pages of language directly copied from websites and other sources (Respondent 3). However, the state of North Carolina was closely monitoring plan quality and required the consultants to improve the plans drastically. As a result, some consultants who were simply on a learning curve improved tremendously while those who had sought a quick buck realized that “it really wasn’t their line of expertise or where they wanted to grow their business” (Respondent 3). This is an example of strong, state involvement driving local quality and potentially pushing low performers out of the market. However, these were demonstration communities, it was a small pilot, and as evidenced by their early adoption of a mitigation planning requirement North Carolina clearly saw the value in the process. It is unclear if this same effect has taken place in other states.

The question of plan quality, when plans are completed using contractors, is one that frequently arises. Some private sector respondents complained vehemently about the impacts of bad consultants on the reputation of the industry as a whole. They acknowledged that there are firms that are more focused on the money than the product. They also suggested that communities should seek consultants who are committed to the process. This is not so different from the earlier statement that quality plans require committed communities, regardless of who does the writing. Acknowledging that locals will know the community best, they describe the need for local leaders and for a collaborative process in which the private consultants bring technical expertise to supplement local efforts (Respondent 21).

One of the concerns often cited is a lack of mitigation knowledge among contractor staff, a concern which is tied to the impression that the firms are using less skilled staff (Respondent 2) or staff with other irrelevant expertise. This is significant because it eliminates the key reason for the use of consultants, which is to access expertise not available in the public sector (Respondent 10). In the 1990s, as they pursued hazard mitigation work and tried to break into the industry the large, private firms would often call upon subject-matter experts (SMEs) to increase their access to expertise. These SMEs were often former public employees, (some of whom had headed up the guerilla efforts described in Chapter 4), who had begun working as consultants. However, as funds were made more widely available, in particular following the passage of DMA 2000, which appeared to guarantee funds into the future, the firms developed their own expertise.

This expertise was developed in part by hiring professionals from related fields, such as architecture and engineering, both professions in which a long backlog of work was uncommon. The promise of a steady funding stream was a strong lure for professionals who were used to struggling. The large firms used some of these professionals, despite their lack of exposure to hazard mitigation, as they developed the guidance for the federal programs and later used their experience developing that guidance to secure significant amounts of local work (Respondent 5). The fact that the contracts for the development of the How To Guides and other guidance went to firms that had existing relationships with FEMA but little mitigation planning experience is illustrative of the federal climate and regulations which are very conducive to the use of the private sector. It was more difficult for FEMA to engage local planners who had lead the state efforts, at least beyond Listening Sessions, than it was to expand their existing contract (Respondent 15).

Despite the initial development of in-house expertise among larger private firms, low profit levels associated with mitigation planning, and even with some small-scale hazard mitigation projects, have not been sufficient to induce the private sector to maintain a high level of expertise. Instead the firms rely on low level staff to complete the smaller projects with a higher profit margin. Recently, one respondent reported a conversation with staff at one of the large firms who reported that the firm only took on mitigation planning work as a means of showing that the staff had expertise needed to secure the larger federal contracts. As a result, this firm, and quite possibly others like it, was uninterested in improving the quality of its mitigation planning efforts. Instead, this firm and others assume that their staff can do mitigation planning because they have the related engineering and modeling expertise. However, they lack knowledge and expertise in the implementation of projects and have very little understanding of planning practices and local processes. Many firms that have focused primarily on engineering are far more familiar with engineering solutions than land use and zoning. The companies focus on the small amount of money available and see the value solely in the identification of projects that can later be a source of further work. This drives the piecemeal approach and project focus described earlier (Respondent 4).

#### *Creation and Growth of the Mitigation Industry*

The growth of the mitigation planning industry, in terms of small, regional, and large firms jumping into the market, peaked in 2005 (Respondent 3). One respondent who worked for one of the larger and more successful firms described an incredibly rapid pace of work with a win rate of 85%, as the firm both secured local mitigation planning contracts and reviewed over 300 plans for FEMA. He described a market in which there were a few other large firms but not a lot of competition outside of that, with the exception of some local engineering firms in certain

communities. “It was actually kind of unusual that as out-of-town consultants we had the advantage over the locals” (Respondent 5). The large firms drew upon their experience as federal contractors to secure local work. These firms hired some former public employees and used SMEs as needed.

Over time, several regional firms became active in the industry, often buying up local firms and becoming large, national firms themselves. These regional firms leveraged local relationships and developed the planning expertise (Respondent 5). As the existence of planning funds, including some large planning grants, drove these additional firms to pursue mitigation planning, the marketplace became very competitive. However, the recent reduction in planning grant awards has reduced the interest among consultants at the same time that local cuts are increasing the need to turn to outside resources (Respondent 4). Large planning efforts, with high budgets (which major cities have), still draw a great deal of competition, but smaller communities do not.

One advantage that the larger firms do have is the ability to access a wide range of in-house expertise in technical components such as GIS and engineering. However, the small firms can compensate for this by building partnerships while maintaining lower overhead. Additionally, the smaller firms can work collaboratively with communities who have local resources (Respondent 2).

It is important to continue to recognize the role that the public sector plays as the contracting entity. A local community can look for a firm that will serve as a partner or it can simply seek to purchase a product. As one respondent pointed out, “if you hire somebody for your hazard mitigation plan and that is their entire role with you, you should not be surprised if

they do it as quickly and efficiently as they can to get to their bottom line and to move on” (Respondent 1).

Some communities actually utilize their consultants as a neutral party when there is a history of strained relationships among community stakeholders. Under this model, the private firm is an intermediary in support of the local effort. “We wanted to make sure that the community felt like this was a holistic process and that the city was just one vote in the process or one set of votes, because we did have several state personnel on our stakeholders committee” (Respondent 13).

One respondent described the ideal consultant role as that of a facilitator who can assist the community in writing its plan. Under this model, a local champion or agency is the true driver of the process. The respondent added that the alternative, that of very passive participation, does not result in good plans (Respondent 8). This facilitator role essentially involves bringing the benefit of expertise to ask this question: “Have you thought about...” (Respondent 13)?

Communities face some significant challenges when selecting a contractor. Some communities seek smaller companies and individuals with whom they are familiar, and others select large firms in the hope that they will have the needed capacity to provide a robust mitigation plan. Communities also look to see which consultants have worked with neighboring jurisdictions and turn to FEMA for template RFPs. This eliminates the opportunity to utilize the RFP as a mechanism to ensure that local concerns are addressed. One respondent stated, “I don’t think a lot of people know what they are doing when they are doing hiring for this” (Respondent 4). Respondents report seeing greater specificity and differentiation between RFPs for plan updates. This appears to be driven by previous negative experiences (Respondent 5).

The communities' initial planning process gives them experience that improves their expertise, provided there is low enough staff turnover to allow for that kind of institutional knowledge .

As one respondent noted,

Private industry has separate motivations perhaps than government and can do some things extremely well, and can do some things a lot less well, and they need guidance. They need standards, and they need to respond to an end result. The end result is the creation of a plan, and you get paid for it, and that's the end. You will produce a certain plan. If the end result is a partnership for the community to reduce risk, you will get a very different result. (Respondent 1)

The RFPs described above can be a great tool for this.

The current model of private sector involvement in mitigation faces some key challenges as federal funding levels continue to decline (Respondent 5). Larger consulting companies are less willing to take contracts, although this in turn drives demand for the smaller firms that carry lower overhead. In addition, communities which initially saw no value in the process and focused solely on grants see little reason to continue updating plans when no grants are forthcoming (Respondent 5). Many communities have simply not prioritized mitigation planning relative to other needs (Respondent 3). Some consultants are actively working with communities to identify additional funding sources and mechanisms for project implementation, describing this as the only way to keep programs alive (Respondent 5). Some communities, however, have found ways to continue updating their plans using their own staff (Respondent 11).

As the private sector role in mitigation planning has been reduced, the firms which had done the mitigation planning have expanded into post-disaster state contracts to administer recovery funds and to manage programs. This shift in focus stemmed in part from the realization

that the process was quite challenging for local communities to manage. The firms marketed themselves as being able to navigate the rules and as being able to get more federal assistance, not as being able to manage better mitigation outcomes. The ability of firms to fill this space stems in part from the allowance for administrative costs provided in the Stafford Act.

The federal recovery process has become more complicated after years of amendments and interpretations, often leaving states and communities unable to maintain the necessary expertise. Additionally, many states are unable to hire skilled temporary employees when they are under hiring freezes, which makes it easier for them to contract with private sector staff (Respondent 14).

However, private sector firms cannot necessarily keep sufficient staff on hand themselves. Consequently, they either rely on a pool of contractors who jump from firm to firm in each disaster (and could possibly be hired directly by the state) or hire and train individuals following major disasters. There is a very real question of whether another model would be more efficient and effective, particularly if local hiring constraints were lessened following a disaster declaration. As one respondent described it, this current model is just one tool in the toolbox for states that lack emergency management capacity, that have poor leadership, or that are overwhelmed by a major event (10).

In general, respondents describe the quality of the contractor staff as decent, but note that local knowledge is lacking (Respondent 24). In other words, the consultant model has not succeeded in fully capturing local needs and information in the planning process. The same challenge is mentioned in reference to mitigation planning.



### *Private as Public*

As the governmental role in hazard mitigation has developed, all levels of government have at times called upon the private sector to manage programs, to expand capabilities, and to administer grants. This has included the tremendous private sector role in assisting FEMA with local and state plan review. This creates a situation in which it is possible for a local plan to be written solely by a contractor and then reviewed by another contractor, with very little public involvement or intervention<sup>25</sup>.

One respondent observed that the relationship between the state and its contractors seemed inappropriate, with state employees deferring to the contractor. He stated, "...the two were interchangeable. We actually sent our quarterly reports to the contractor" (Respondent 20). This contractor discouraged the city from looking at concerns such as superfund sites, despite that fact that it was a real concern for the community, which was seeking better integration among planning mechanisms. He described similar challenges at the city level where there were more contractor staff involved than city employees. He raised a real question of whether the government was outsourcing its responsibilities. Can that plan really represent the community (Respondent 20)?

The use of contractors in post-disaster recovery and grants administration can also create a situation in which contractor staff members are taking on the role of the state in setting the direction of the recovery efforts and deciding focus areas for mitigation projects. Academia is another sector that has played a key role. Universities continue as active partners in many communities and work with the federal government on research, on the creation of curriculum, and on other efforts. In California, Cal Poly Corporation operates as a contracting

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<sup>25</sup> It is a FEMA policy that all plans reviewed by contractors must receive an additional cursory review by a FEMA staff person.

arm of the university and works with the state on its planning efforts. In some cases, however, university efforts were described quite negatively. In one example, an urban planning department made some proposals to beautify levees by putting shops and cafes on top of them (Respondent 4). This recommendation showed a lack of understanding of flood-plain management.

As the preceding sections as well as Chapter 4 have shown, the role of the public and private sectors in hazard mitigation has historically been complex and varied. Although hazard mitigation is not “privatized” in the truest sense of the word (it is not a government service that has been sold to the private sector), it is undoubtedly a service in which the private sector has played a tremendous role. In fact, hazard mitigation is unique in the ways in which the public and private sector roles have changed over time, varied with respect to the type of firm as well as to the type of public entity implementing the hazard mitigation programs or measures, as well as to the incorporation of other actors such as academia (at times in a consultant role). Hazard mitigation, as an activity, did not originate with the public sector; instead, it originated largely with the private sector, which in turn both pushed for a government role and eventually took on the task as a contractor of designing and implementing federal programs. These federal programs were, in turn, largely implemented at the local level by the same (or other) contractors. The hazard mitigation industry that exists today was largely formed in response to the growing federal role in hazard mitigation, primarily due to requirements for a set amount of mitigation activity and the funding available to purchase it. Also of interest is the role that the private sector actors play as street-level bureaucrats, administering public programs (Lipsky, 1980). The prevalence of localized solutions, which create a further need for administration, can arguably be connected to the actions of these private sector actors making local policy decisions. Another

key theme which contributes to the large role of the private sector is the role of expertise. The reliance on technical risk assessments and on cost-benefit calculations, which are prevalent in various policy realms, also clearly impacted the desire for specialized expertise that was not available within the public sector (Fischer, 2005).

The question of outcomes, such as plan quality and the shortage of holistic solutions, has always been present, from concerns regarding public sector efficiency (frequently voiced by advocates of privatization as a rationale for using the marketplace) to the challenges of maintaining accountability and equity of the public work under private control. The literature addresses the challenge of creating bureaucratic mechanisms that can address the holistic features of reality and avoid the creation of overly homogenous approaches (Turgerson, 2005). Chapter 6 will address the outcomes of the federal hazard mitigation programs as well as some of the challenges to be faced by these programs in the future.

## **Chapter 6: Where are we now? The Outcomes of Private and Federal Involvement in Hazard Mitigation**

The previous two chapters explored the history of federal involvement in hazard mitigation and have primarily focused on two things: 1) the roles played by the private and public sectors; and 2) the ways those roles changed over time. The chapters describe the implementation of the various public programs, the various issues around outcomes that arose, and the changes in the market. As that analysis has shown, the federal government's involvement in hazard mitigation was predated by a long history of private involvement. It was then followed by a continuously growing federal role in response and recovery and by a more recent history of a public role at the state level. Public sector involvement expanded to incorporate hazard mitigation because it became clear that the expenditures from disaster after disaster were astronomical and continuing to rise. However, from an implementation perspective increased federal involvement has not really succeeded at reversing that trend. Because of costly disasters such as Hurricane Katrina and Superstorm Sandy, this phenomenon remains today despite mitigation efforts. From their inception, the federal hazard mitigation programs relied heavily on private sector expertise, at times relying almost entirely on the private sector for the creation and implementation of the programs. The assumption that certain firms would be utilized, the closely knit relationships between the larger firms, and the lack of real competition created the conditions of market failure. Other federal programs, and some of the more successful local efforts, relied instead on more of a partnership model in which the strengths of both the public and private sectors were leveraged. One theme that clearly emerged is the value of locally driven hazard mitigation efforts, efforts that include multi-sector involvement and that create performance regimes, which by their very definition require a governmental component and the ability to enact policy.

Although performance regimes are often thought of as being established and maintained by local governments, research into their role in emergency management indicates that, out of the efforts of community organizations and of other actors who were not looked at in any great depth by this dissertation, this type of structure appears to be emerging in some communities. Public-private partnerships, a key component of performance regimes, are also clearly important to local success (NAS, 2011).

Looking back on over 50 years of federal efforts at hazard mitigation, it is necessary to question the success of these efforts and to take a closer look at their outcomes. However, these efforts have not taken place in isolation, and it is quite challenging to assign causality or to state emphatically that the current state of hazard mitigation in the United States is a result of federal hazard mitigation efforts (or even to say which particular components are directly a result of particular programs). This chapter will describe the current state of hazard mitigation in the United States, focusing on three areas: reduction of risk and losses; current trends in federal government involvement in hazard mitigation; and the growing role of networks enabled by changing technologies.

*Have the efforts of the past 50 years reduced risk, vulnerability, and losses?*

The various federal programs described in Chapters 4 and 5 were intended to both reduce federal expenditures on disasters as well as to reduce losses. Undoubtedly, mitigation is now an expected and often accepted activity following a Presidentially declared disaster. Certain types of hazard mitigation, such as home elevations and acquisitions, are commonplace projects and are funded primarily by federal grant programs such as the Hazard Mitigation Grant Program and Community Development Block Grants (Respondents 6 & 21). Following Superstorm Sandy,

over \$61<sup>26</sup> billion was appropriated for assistance, including hazard mitigation. This number may continue to rise because Connecticut, New York, and New Jersey have requested over \$82 billion in assistance. The history of significant federal funding for mitigation projects, dating back to the 1993 Midwest Floods, created an expectation by the States that federal funding will be available and a desire to spend the funds available completely and promptly (Respondents 1 & 3). Given the challenges of securing an adequate benefit cost ratio, the experience of the staff available, and the history of funded projects within that state or region, this complete and prompt expenditure of funds is accomplished primarily by focusing 1) on those projects with which the States, their contractors, and the FEMA regions are most comfortable; and 2) on those that are easiest to fund (Respondent 10). In essence, this means that only higher-value properties are mitigated and that more populated areas are given preference. Additionally, following a declared disaster, the vast majority of contracts are given to multi-national and national firms instead of to local or regional actors (Dyson, 2006) even though the Stafford Act provisions were designed to give precedence to local firms (GAO, 2006). This creates a situation where the work generated does not provide as much economic benefit to the local economy as it otherwise could.

Growing pressures to expedite the grants administration process—driven in part by recent congressional scrutiny of these programs that was reflected in the 2013 Sandy Recovery Improvement Act—further encourage continued reliance on these types of projects. According to the Republican summary of the Act, “The current FEMA process is mired in regulations that delay rebuilding for years and drive up project costs. Streamlined procedures and increased flexibility will allow applicants to recover in a more efficient manner that best serves their community<sup>27</sup>.” This statement repeats a theme that was present in many of the interviews:

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<sup>26</sup> “Congress approves \$51 billion in aid for Hurricane victims” NY Times 1/28/13 Raymond Hernandez

<sup>27</sup> <http://www.govtrack.us/congress/bills/113/hr219#summary/houserepublicans>

FEMA programs have become overly cumbersome and bureaucratic (Respondent 6).

Organizations such as NEMA have recently spoken out against the value of programs such as PDM, which they initially supported, in favor of grant programs that more broadly fund preparedness<sup>28</sup> actions. In fact, in the federal budget initially proposed for the fiscal year of 2013, PDM was entirely unfunded. It remains to be seen whether these grant programs will remain in effect and whether any new preparedness grant program will include hazard mitigation.

The properties that have been mitigated under these programs are undoubtedly at a lower level risk than they previously were. However, as was described in Chapter 5, this approach focuses on individual structures and not on the community as a whole. Additionally, the focus on quick expenditure of funds discourages efforts to design more complex, holistic solutions to risk that can address the vulnerability of the whole community. This focus on home elevation, and occasionally on acquisition, reduces the NFIP's risk portfolio but does not have an impact on those community residents who are renters or whose properties are of a low value. The equity concerns are clearly not being taken into consideration by current programs and implementation models. Some theorists have gone as far as to describe relief efforts following major disasters as being designed primarily to enrich corporations (Calhoun, 2006). Although a great deal of profit is made from disasters by private sector firms, it is also the case that local governments lack the capacity to address extreme events. Arguably, partnership models in which private sector expertise can be leveraged by the public sector while local capacity is built can address some of these concerns.

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<sup>28</sup> Under the new Presidential Policy Directive 8, preparedness is actually the umbrella under which all areas of emergency management, including mitigation are conceptualized. However, preparedness funds have typically covered equipment for local fire departments or emergency management agencies.

Although other types of hazard mitigation projects are also funded following a declared disaster, including mitigation for infrastructure and for the hardening of public facilities, these opportunities are often missed due to a long-standing failure to adequately use the mitigation component of the Public Assistance Program (Respondent 1). Community Development Block Grant (CDBG) funds, which have the greatest flexibility to assist the most vulnerable members within the community, are often directed towards home elevation programs or are used for politically desired projects such as port expansion or support of business interests that have little true impact on community vulnerability (Respondent 1), (Gotham & Greenberg, 2008). In fact, our current system of disaster relief is more geared towards response to the destruction of properties than it is to the damage to communities (Pais & Elliott, 2008). Although CDBG funds must meet HUD criteria that mandate that benefits be given to persons of low and moderate income, these requirements have been waived in many recent disasters (Gotham & Greenberg, 2008). As described in Chapter 2, in disaster event after disaster event, the most vulnerable members of society are simply rendered more vulnerable. For example, following Hurricane Katrina, the average rent in New Orleans increased 70% as reconstruction labor poured into the city and as middle-class homeowners sought to rent properties while repairing their own. Additionally, because poorer residents lack the financial resources for recovery and because they have greater challenges both navigating the bureaucracy of assistance (Pais & Elliott, 2008) and actually rebuilding and restoring their lives following a disaster, they are often disenfranchised through the recovery process and experience exacerbated risk levels following the event. The essential privatization of recovery services through the extensive use of contractors at the state and federal levels raises some concerns regarding the ability to assist those individuals who pose the most difficult cases, often the most vulnerable. Firms contracted to assist a particular



number of clients have a strong incentive to focus on the easiest cases or projects because these are more profitable (Chamberlin & Jackson, 1987). As many theorists have noted, privatization does not necessarily lead to equitable distribution of services (Feighenbaum & Henig, 1984). Many theorists have described inequitable outcomes following disasters, regardless of the agencies involved (Mileti & Peek, 2001). While others have noted the inherent challenges of relying upon private sector actors, under standard contract mechanisms, to assist those whose cases are the most challenging, as is illustrated by the Road Home.

Much of the hazard mitigation that does take place following a declared disaster has little if any real connection to the priorities identified by local or state hazard mitigation plans (Respondent 6). This leads many to question the value of these planning mechanisms, relative to whether they are indeed able to identify the greatest needs in a community. Alternatively, the process by which HMGP funds are allocated and disbursed within the impacted states has also come under scrutiny because it has focused more on political desires than on sound mitigation policy (Respondents 20 & 22). These problems with this process are similar to the challenges (described above) with CDBG. Many respondents stated a desire for the return of the Interagency Hazard Mitigation Teams as a mechanism for increasing coordination among programs in the effort to meet the goal of risk reduction. Although some states have established commissions and agencies to manage disaster recovery and ostensibly to assist with this coordination, these groups, such as the Louisiana Recovery Authority, have primarily represented business interests and have supplanted existing state mitigation teams involved in hazard mitigation planning (Respondent 16).

Outside of the post-disaster context, a tremendous number of hazard mitigation projects have been funded by various federal grant mechanisms, including, among others, the Pre-disaster

Mitigation Grant Program. These federal grants funded a range of activities from hazard mitigation planning to flood control efforts and Emergency Operations Centers. Much like HMGP and PA, these programs are primarily available to assist homeowners (often only those insured by the NFIP) or to harden public infrastructure. Some of these programs, such as the Severe Repetitive Loss Program, emphasize over and over again that they exist to reduce the costs to the NFIP. No mention is made of their role in reducing risk to the homes and their owners. Furthermore, as with the CDBG funds and the spending schemes typically designed for HMGP funds, these programs do not assist the most vulnerable. Instead, they focus on properties.

The existences of these various programs and the number of mitigation undertaken have resulted in a mix of positive and negative outcomes. On the one hand, there is now a thriving private industry devoted to hazard mitigation. The constant influx of funds (resulting from the manufacture of housing components such as shutters, from the meteoric rise of the elevation industry, and from growth of the private consulting industry, which is focused on the development of community mitigation plans and helping governments who experience disasters implement mitigation projects) has fed the demand for mitigation and created a strong market. This market creates jobs, trains individuals, and in some cases now increases demand through sales and marketing (such as the elevation industry in Louisiana following Hurricane Katrina). However, there are still only a handful of multinational and national firms that retain the more substantial federal contracts (which also happen to be the contracts which affect policy and impact the industry). This suggests that lack of competition remains a factor, which may contribute to market failure as Bozeman (2007) argued.

Despite the prominence of the large firms, the private mitigation market includes firms of all sizes, as well as individual consultants who operate either as sub-consultants to private companies or directly as advisors to the public sector. The following table shows the ways these types of firms are utilized in both the post-disaster and hazard mitigation planning context and what actions government units at the various levels undertake.

**Table 5: Types of Firms Active in Hazard Mitigation<sup>29</sup>**

<b>Type of Firm</b>	<b>Independent Consultant (often a former public employee)</b>	<b>Hazard Mitigation Planning</b>	<b>Post-Disaster</b>
	<b>Independent Consultant (often a former public employee)</b>	Often hired by local governments. Tend to have a high level of expertise, as they are often retired from the private sector firms or federal government. Additionally, a high level of professional recognition is required for these consultants to remain in operation.	Sometimes hired by larger private sector firms.
	<b>Local Firm (small and large)</b>	Often hired by local governments, but at times may have a limited level of expertise due to their lack of involvement in national projects.	Sometimes hired by larger private sector firms.
	<b>National Corporation</b>	Sometimes hired by local governments, but typically struggle to compete against local firms despite having greater expertise.	Often contract directly to the State or Federal government unless a multi-national firm is involved.

<sup>29</sup> Data is taken from conversations with various respondents and the experience of the author.

**Table 5: Types of Firms Active in Hazard Mitigation (cont)**

	<b>Multi-National Firm</b>	Does not compete in this market.	If involved will utilize National Corporations, Local Firms and Independent Consultants as subs.
<b>Type of Government Involvement</b>	<b>Local Government</b>	Hires consultants.	Very rarely hires consultants to assist with local damage assessments or grants administration.
	<b>State Government</b>	Administers the grants.	Often hires consultants when the magnitude of a disaster exceeds internal capacity.
	<b>Federal Government</b>	Provides the grants.	Consistently relies on private sector partners to administer these programs and provides assistance to communities. This is an example of the “hollow state” described previously (Frederckson & Frederickson, 2007).

The availability of funds, coupled with private sector marketing and federal regulations requiring mitigation planning, has driven demand by states and communities for certain mitigation services. In turn, there is a growing awareness of hazard mitigation even in the general public. Recent events, such as Superstorm Sandy, included media references to the Community Rating Systems, to the NFIP, and to the need to rebuild to a higher standard. However, the public perception of hazard mitigation is largely limited to the activities that the federal government currently funds, such as home elevation. The hazard mitigation plans, which are now in place in

over 20,000 communities<sup>30</sup>, have also largely focused on federal mitigation funding and on allowable projects and have overwhelmingly been written by consultants.

The vast majority of the hazard mitigation plans written nationwide are written primarily (or even solely) to allow the community to access federal hazard mitigation dollars and are therefore often indistinguishable from one another. As a result, these plans are *written to* the grant programs, and the mitigation actions listed are often just as much a reflection of what federal grants will fund as what the community might actually use as a viable solution. Moreover, the effort of community staff is almost completely focused on acquiring and spending the federal mitigation funds. FEMA has been complicit in this, with plan reviewers advising communities against including particular actions, or, in some cases, against looking at the full range of hazards the community is concerned about (Respondent 16).

The issues around plan quality were discussed briefly in Chapter 5 and have been the subject of some academic inquiry (Schwab, 2010). It is unclear whether use of the private sector has an impact on plan quality, but many respondents did state that consultant-driven processes that had little if any community involvement led to poor results (Respondent 2). Although the number of hazard mitigation plans that have been written is incredible (it is difficult to believe that this type of penetration could have occurred without federal involvement), it is unclear the extent to which these plans have led to risk reduction within the communities. In many ways, this is clearly a privatized activity, given the influence of the private sector via contracts (the American version of privatization) (Henig, 1989) in program development, in plan review, and in local plan writing. Without clear links to community values, to actions that can be undertaken regularly by the community itself, to connections to other planning mechanisms, etc., it is unclear whether the vast majority of these hazard mitigation plans have been written with the intent of understanding

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<sup>30</sup> [www.fema.gov](http://www.fema.gov)

and reducing risk and vulnerability or if they have been written just to comply with a federal regulation. As such, these plans do not necessarily foster local mitigation efforts despite the stated intent of DMA 2000.

Further study is necessary to understand the extent to which these mitigation plans have led to risk-reducing action as well as the extent to which they have influenced other potentially risk-increasing actions within the community, such as certain types of development. Additionally, there is insufficient data to determine whether those communities that have been most successful in their hazard mitigation efforts would have otherwise been equally successful if they had not been required to develop mitigation plans or had not sought federal mitigation funding. There is no doubt that these communities have benefited from the various funding programs, including initiatives such as Project Impact and RISK Map (described in Chapters 4 and 5), but many have also leveraged other sources of funding which might otherwise have been available without the current role of the federal government.

Finally, although a tremendous amount of hazard mitigation has taken place, this nation has also witnessed an even greater amount of development in hazard-prone areas. Often this development has not taken into account the natural environment and has therefore led to greater risk. The coastal development along in the United States is one example of this, with some communities consisting primarily of elderly retirees (who are among the most vulnerable). In the 2010 census, for example, it is shown that over half of all persons age 65 and over lived in 11 states, the majority of which are coastal and at high risk. These states included California, Florida, New York, Texas, North Carolina, New Jersey, and Georgia. Additionally, population growth among the elderly was highly concentrated in states such as Texas and Florida (Administration, 2010). In many cases, this creates a clear example of externalities (another

component of market failure) in which those individuals or communities that chose to participate in or to allow high-risk development have the costs of those decisions subsidized by the federal government, even as the very activities they undertake in the name of economic development actually increase the risk to the population (Freudenberg et al., 2008). Communities such as that in Denver, Colorado, on the other hand, have successfully utilized Low Impact Development to grow without increasing risk and vulnerability, but the vast majority of communities have not considered such options.

It is difficult to ignore the fact that risk and vulnerability, as well as hazard impacts and costs to the federal taxpayer, have increased drastically. However, it is not possible to tell the extent to which the federal policies in place have prevented even greater impacts. Some respondents expressed concern that the NFIP simply provides a mechanism for flood plain development. However, regulations have also ensured that the same development take place in a safer manner than might otherwise have been the case. So, in sum, the opportunity to develop in risky areas has been ‘supported’ by the NFIP, and some of the risk that program has caused has been ‘mitigated’ by building code requirements that must be adopted leading to an increased risk when all calculations are completed.

The growing recognition of the importance of hazard mitigation is reflected by the fact that more and more academic institutions offer courses in hazard mitigation or have incorporated the study of hazard mitigation into other areas of study such as disaster resilience or emergency management. At the local level, some cities and states have chosen to hire individuals who focus primarily on these issues; one example is the City of New Orleans, which created a formal hazard mitigation position. Other communities have created resilience positions. FEMA itself is now hiring for Regional Community Resilience positions. Although the role that is played by

the Community Resilience Coordinators remains to be seen, those who fill the local positions quickly find themselves tasked solely with administrative duties (Respondents 18 & 20). The growth of hazard mitigation has led to the formation of professional associations, research centers, and many non-profit organizations that focus on reducing risk and vulnerability. Groups such as the Insurance Institute for Business and Home Safety, the Association of State Flood Plain Managers (ASFPM), the Federal Alliance for Safe Homes, the Extension Disaster Education Network, and the Natural Hazard Mitigation Association, all strive to disseminate information on hazard mitigation, to create a community of practice, and to educate the public on the activities that individuals can undertake on their own. These groups highlight the growing role of non-profit organizations at the national level and the development of a professional community in support of risk reduction. Some of these groups, such as ASFPM, played a key role in the development of programs such as the CRS and were participants in the Listening Sessions organized by FEMA during the creation of DMA 2000. Their role is not explored by this dissertation, but the role that the non-governmental, non-profit sector has played throughout the history of hazard mitigation deserves additional study.

The incorporation of additional sectors has shifted the focus away from the exclusive reliance on private and public sector actions to a more collaborative model that is focused on addressing the actual needs of local communities. The private sector itself has withdrawn somewhat from the planning end of the market with many private sector firms, outside of the large federal contracts for mapping, focusing on recovery and grants administration at the state level. These same firms now contain the institutional knowledge of the public sector because they are largely staffed and run by former federal and state employees, thus giving the whole process a 'feedback' loop in both directions: private to public and public to private. It is particularly interesting to note that



local and state government entities hire these individuals to assist them with appeals to FEMA. Essentially, the federal government now reimburses a portion of the costs of the private sector contracts that allow former public employees to represent the states within the current bureaucratic system. These contractors are able to win appeals because they have the knowledge of previous interpretations of the regulations (Respondent 6).

### *Current Trends in Federal Involvement in Hazard Mitigation*

The amount of money available for pre-disaster mitigation grant programs has declined over the past few years, with no funds appropriated for fiscal year 2013. In 2012, there was a great deal of discussion regarding the elimination of these programs. The concerns voiced before the U.S. Congress had to do with the efficiency and success of these programs, which were questioned because of the length of the application process and the amount of funds showing up as unobligated from previous years<sup>31</sup>. Issues discussed included the amount of unobligated funds, the complexity of the application process, and the fact that disaster-related expenditures have not decreased.

Moving into the future, FEMA is looking more closely at ways to incentivize local action, especially how its own recovery staff can better assist communities with mitigation in recovery. It is also working with other agencies and communities on alternative means of supporting hazard mitigation. As the funds available for hazard mitigation planning decrease, particularly in states that do not regularly receive disaster declarations and consequently HMGP funds, there is real question regarding the future of hazard mitigation planning. Some communities have chosen to forgo plan updates entirely (Respondent 2).

### *The Growing Role of Networks*

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<sup>31</sup> Funds can show up as unobligated, even with identified projects, if there has been a delay in environmental reviews or other components of the grants-application process. The testimony implied that these funds had no identified use (and therefore no need), but the funds were indeed tied to projects.

Some local communities have had great success by focusing on partnerships, on widespread community involvement, on multi-objective risk management, and on the creation of performance regimes. It is interesting to note that more vulnerable communities tend to be more active in relationship building (Bowman & Parsons, 2013). Through mechanisms such as the Resilient Neighbors Network (a pilot project in partnership with the Natural Hazard Mitigation Association), the federal government is looking at ways to empower and to promote local actions and is moving away from directly funding projects and efforts. As the federal government continues to reduce the amounts of funding available, communities that wish to continue their mitigation efforts must seek innovative means of doing so. Although this raises some serious challenges, it may also lead to improved mitigation outcomes.

In recent years, FEMA has begun to promote the use of collaboration at the local level and across all aspects of emergency management. As part of this effort, FEMA published “A Whole Community Approach to Emergency Management” in 2011. This document highlights the need for coordination among local actors and a broad array of stakeholders. In many ways, it promotes the creation of performance regimes, although the term itself is not utilized. More recently, in 2012, FEMA published “The Mitigation Model: A Path Towards Resilience”. It looks at the ways local mitigation efforts can be incentivized. It draws upon examples from communities in which hazard mitigation efforts have been successful and discusses 1) initiatives such as ratings systems that were based upon the private sector insurance model that was so effective for fire; 2) the Resilient Neighbor Network; and 3) other peer networking efforts. These efforts indirectly show the growing recognition within the public sector of the limited success of the preceding efforts. Despite the long history of federal programs and expenditures, many communities are now at greater risk than ever. This is in large part a function of external

pressures such as development, and it is unclear the extent to which federal programs have prevented risk from being even greater than it is today. However, it is clear that a more locally based approach is needed and that mitigation cannot be implemented from the top down by any sector. This is not to say that the efforts of the past 50 years have had no impact; many communities have made excellent use of available resources and programs; the creation of a profession and industry around hazard mitigation must be recognized.

As has always been the case in the past, the more vulnerable states and communities are leading the way in mitigation efforts; damage and hardship spur action. As Chapters 4 and 5 indicate, states such as Florida and North Carolina were at the forefront of hazard mitigation planning. The greater connectivity that is available via technology and the networking efforts of various non-profit groups allows leaders in community efforts to more readily share information and communicate with each other. Perhaps this will, in turn, allow these communities to lead the way towards more effective disaster risk reduction. More research is needed to determine how the various sectors, at all levels, can best work together towards reducing risk and vulnerability. Given the large role of the private sector, it is clear that hazard mitigation services in the United States are largely delivered through contracting mechanisms. Questions of equity in hazard mitigation have arisen, particularly due to the inability of programs to assist the most vulnerable. It is not clear that this is an essential result of privatization, but it is clear that the private sector has greater difficulty meeting these concerns and remaining profitable. Additionally, knowledge of local situations is critical to ensuring equitable outcomes for all residents and cannot be provided by most firms. The federal government itself has approached hazard mitigation as a way to reduce losses and not as a means of building community resilience. Given the lack of local capacity to build community resilience, which is only exacerbated by reduced budgets

(Coope, 2003), it is difficult to imagine hazard mitigation taking place without the private sector. However, it is possible that a transition away from contracting and towards partnership will pave the way towards reduced vulnerability.

## **Chapter 7: Recommendations**

This dissertation began by asking two questions regarding the public and private sector roles in hazard mitigation in the United States:

1. *How has the provision of hazard mitigation services by the private sector come to be the norm, and how has it evolved over time?*
2. *What have been the outcomes of privatization?*

The literatures described in Chapter 2 provided the theoretical foundation for the analysis of these questions. However, as was clearly indicated, hazard mitigation does not fit neatly into the theoretical descriptions of the privatization of services, nor do the existing bodies of literature around disasters, social vulnerability, or contracting fully cover the range of findings described in Chapter 6. Chapter 7 describes some recommendations based upon the outcomes described in Chapter 6, coupled with the history covered by Chapters 4 and 5, grounded by the literature discussed in Chapter 2. The literature provides a starting point for this analysis, but a great deal of additional research is needed to expand existing literature to fully account for the dynamics of hazard mitigation.

This chapter begins with an overview of recommendations that were made directly by respondents and critiqued by the author. It then continues with the recommendations that stem from the findings of this dissertation.

### *Recommendations from Respondents*

Many of the respondents interviewed made specific recommendations for the improvement of hazard mitigation outcomes in the United States. It is interesting to note that almost none of these recommendations had anything to do with the roles of the various sectors. In fact, some of

these recommendations expand the discussion beyond the previous chapters. These recommendations are as follows:

1. Pursue a comprehensive program of catastrophic insurance, where communities are rated and are rewarded with premium reductions, for efforts that reduce the costs of disaster losses. Such a rating system would need to take into consideration construction and development practices, as well as the measures that can be utilized to reduce risks to particular hazards (such as fire sprinklers) (Respondent 1). Under such a model, insurance companies have an incentive to reduce their own risk portfolio and therefore make demands on those insured regarding risk reduction. Such a model has worked well with urban fire, and it bases the discussion on business practices and not on politics (Respondent 1). In order to prevent this type of a program, which would be federally backed, from simply increasing costs to taxpayers, as some argue the NFIP may have done, several other federal programs would have to be changed to eliminate subsidies for improper development. These changes would include the IRS casualty loss program which currently allows for deductions of losses, another means of creating an externality, as well. Some organizations, such as the American Bar Association (ABA) have spoken out in support of catastrophic insurance. This recommendation includes both private and public actors working in partnership to leverage their respective strengths. In a way, this model creates a unique relationship between the sectors but builds off the existing relationships such as that with ISO, which utilizes the rating expertise of the insurance industry to reduce risk. Under this model, the federal government would act in much the same manner as the private re-insurers do. However, this program is one that would primarily be under private sector management. The concept of insurance as a key

collaboration point between the private and public sector can be seen as far back as the early building code efforts in Chicago, as well as in the creation of the NFIP (described in Chapter 4).

2. Change the NFIP to become more actuarially sound, with premiums reflecting real risk. Higher premiums, which reflect actual risk, will serve as a mechanism for preventing risky development and will help to eliminate some of the externalities described in Chapter 6. Those individuals who currently inhabit risky areas and cannot afford the insurance, such as retirees on fixed incomes, can be assisted through federal voucher mechanisms. Additionally, premiums should be reduced following hazard mitigation actions (Respondent 19). This recommendation allows the federal government to step in and promote equity while it allows the market to dictate the costs and better responds to risk reduction. This effort has already been partially initiated through the premium increases initiated by the Biggert-Waters Act of 2012, but no voucher system is in place to address the equity issue. A related recommendation is to place more of the burden for insurance coverage on the local governments and not at the federal level (Burby, 2006).
3. Establish an interagency hazard mitigation team at the federal level, as authorized by DMA 2000. There are currently interagency hazard mitigation teams that focus on flooding but not on hazard mitigation as a whole (Respondent 8). Ensuring improved coordination among federal agencies and programs is critical to reducing federal disaster expenditures and to maximizing the use of limited dollars. Recent federal efforts, such as the National Disaster Recovery Framework, require greater collaboration in recovery efforts, but no formal task force has been established.

4. Reinstate the 15-day hazard mitigation interagency team reports following declared disasters. These reports, and the overall process of assessing hazard mitigation, will help ensure that state and federal programs are best utilized towards risk reduction (Respondent 6). This might reduce some of the current expenditures on program administration because communities could receive guidance from the team and might not need to turn to the private sector to assist with grants management and to identify the ways in which to make the various programs work together. In essence, the public sector at all levels is purchasing the institutional knowledge regarding federal programs from private firms that either employ former federal employees or that have greater knowledge of national practices and then receives federal reimbursement for some portions of the cost. Some states have instituted similar processes, utilizing existing interagency groups such as the USACE Silver Jackets. These interagency groups at times are also involved in state mitigation planning efforts. One effort in which such a team could play a key role is in ensuring that hazard mitigation takes place through the Public Assistance process (Respondent 12).
5. Create a clear and accessible repository of historic mitigation program information, at the federal and regional levels to ensure that current FEMA employees and policymakers are aware of the efforts that have gone on in the past (Respondent 12). This would help to alleviate the current situation in which the federal government's institutional knowledge is housed within the private sector and is purchased by state governments with federal funds.
6. Streamline the various hazard mitigation grant programs so that less time is spent on applications and so that small communities are not discriminated against by the process



(Respondent 13). This should include clearer guidance on what constitutes a successful grant application. Some federal agencies already offer such guidance in certain cases (e.g., when applicants face particular hardships such they often do in rural or impoverished areas). The Hurricane Sandy Act, described briefly in Chapter 6, requires some streamlining of HMGP, but the process for achieving greater efficiency is unclear. Given the common assumption that the private sector is inherently more efficient, as reflected in much of the literature on privatization (Henig, 1989), this may simply mean a greater private sector role.

7. Allow for greater local control over the expenditure of hazard mitigation dollars. Many local actions, which are much needed, do not neatly fit into the guidance or are unable to pass the benefit–cost methodology (Respondent 14). The federal government should set standards and direction but allow local needs to drive local action. Under this model, obtaining the expertise needed for hazard mitigation is not simply a matter of putting together grant applications that can pass a review; instead the focus of efforts can be on identifying the most effective hazard mitigation measures and those most desired by the communities.
8. Promote plan integration, primarily between comprehensive planning and hazard mitigation planning, as a means to ensure that land use decisions and economic development decisions take the hazard mitigation plan into account. Some of the early state mitigation planning efforts were quite successful in this regard (Respondent 5). Improved plan integration would serve to reduce improper development practices and to slow the increase of risk. Pre-disaster and Post-disaster Recovery Plans are other

planning mechanisms that can be put in place prior to an event and can be closely linked to the hazard mitigation plan (Respondents 11 & 17).

9. Provide assistance and guidance to local communities that are making hiring or contracting decisions and writing RFPs for hazard mitigation services (Respondent 4). As Cohen & Eimicke (2008) point out, contracts can be an excellent mechanism for ensuring the quality of services provided to local communities. However, many local communities do not know what to look for or how to write contracts to ensure that they receive the best services possible (Respondent 4). Communities need to ensure that the consultants they hire, should they choose to utilize the private sector, will have sufficient knowledge of hazard mitigation practices as well as the technical knowledge needed. Additionally, provide training to consultants regarding the intent of the process and hazard mitigation, including actions beyond the scope of FEMA funding (Respondent 24).
10. Encourage communities to 1) utilize consultants solely as process facilitators for hazard mitigation, and 2) retain control over the process (Respondents 8 & 13). In particular, communities without the local staff capacity to manage mitigation planning on their own should utilize contractors but retain the lead in managing citizen engagement (Respondent 11). Doing so will allow the local community to maintain ownership over the process and final product and to leverage private sector expertise while ensuring that citizens are heard (Fischer, 2009).
11. In order to ensure that more projects are funded locally than by the federal government, require that hazard mitigation plans include an appropriate ratio of projects funded locally to projects that are covered by federal programs. The locally funded projects would not

need to cost a great deal, and some might be quite inexpensive, such as education and outreach. This type of a strategy ensures that there is a wide range of mitigation alternatives considered, including efforts such as ordinances or public information programs. Additionally, because some local investment would be required, such a strategy might ensure that communities participate out of the desire to reduce losses and not simply out of the desire to receive FEMA dollars (Respondent 2). Various respondents noted that those communities with successful hazard mitigation plans have consistently been those that valued the program (Respondent 2).

12. Encourage the local engineering firms, which provide the city engineers for many small towns, to begin providing hazard mitigation planning services. In some cases this may entail the creation of specialized training to build upon the basic planning and grants knowledge that these city engineers often have. Additionally, these firms tend to have very good connections within the communities, have low turnover, and are staffed by individuals with local knowledge. Under this model, these city engineers could undertake the planning projects that many larger firms are no longer willing to accept due to low budgets. These individuals will have local knowledge and are positioned to stay within the community far beyond the scope of the mitigation plan (Respondent 2).

### *Recommendations for Improving Hazard Mitigation in the United States*

As the preceding chapters illustrate, the history of hazard mitigation in the United States is complex. The problems which mitigation seeks to solve, such as that of rising disaster losses, are complex and outside of the control of any one sector or level of government. The multi-faceted solutions that are required to achieve risk reduction cannot be undertaken without collaboration among federal agencies, different levels of government, and other sectors. The

preceding recommendations range from having insurance mechanisms that require public-private partnerships to ways in which the federal government can support local decision making. Some of the recommendations require changes at the federal policy level, while others impact the role of the private sector or the implementation of various programs. Although some of the recommendations have been the subject of study, such as changes to insurance (Kunreuther, n.d.), there are many areas where future study is needed to identify concrete ways to improve hazard mitigation. These include the following:

1. Further analysis of communities that participated in Project Impact to determine which, if any of the successful communities, succeeded as a result of creating performance regimes. Additionally, this research should seek to analyze whether assistance from FEMA, as part of Project Impact, contributed to the successful creation of performance regimes or whether the conditions were already in place within the communities and the federal resources simply supplemented existing efforts and structure. *This research will build upon the existing literature on performance regimes and emergency management, such as Clarke and Chenoweth (2006).*
2. Further analysis of communities that have undertaken successful hazard mitigation planning efforts and that have used hazard mitigation planning as a tool for risk reduction. This research should look at whether any of these communities undertook hazard mitigation efforts as a result of the hazard mitigation planning or whether they had their efforts significantly improved by hazard mitigation planning efforts. Additionally, this analysis should look at the extent to which planning mechanisms are successfully integrated within the community. *This research will build upon the work of Schwab (2010) and others.*

3. Research is needed into whether there are discernible differences in the quality of hazard mitigation plans depending upon the primary plan authors (private sector, public or academia). Research is also needed into whether there are any discernible differences in plan quality for communities with regard to 1) the characteristics of the firm used (size, geographic headquarters, etc.); 2) the structure of the contract utilized; and 3) the relationship or level of collaboration established. *This research will build upon the work of Schwab (2010) and others in which hazard mitigation plan quality has been explored with the use of contractors serving as a variable, but without exploration of the specific relationships between quality and author.*
4. Further study is needed to identify communities in which existing planning mechanisms have successfully been integrated and utilized as mechanisms for risk reduction. *This research builds upon the work of Schwab (2010) and others regarding the integration of hazard mitigation planning into comprehensive planning and regarding the literature on the incorporation of hazard elements into comprehensive planning.*
5. Further study is needed of the CRS, as both a model for collaboration between public and private sector actors and as a component of successful local hazard mitigation efforts. *This research will build on the literature around collaboration in government, public-private partnerships, and regimes (Stone, 1984).*
6. Further analysis is needed of the role of peer mentoring processes (between communities) as a mechanism for strengthening local mitigation efforts. This analysis should also look at the ways in which the federal government can encourage or improve these efforts. *This research will build upon the literature on peer learning.*

7. Further identification is needed of inexpensive and easy-to-implement hazard mitigation measures that individuals can undertake at little cost. *This research will build upon the work of Kunreuther (2006) that concerns individual measures as well as on the work of Laska (1991) that concerns self-protective measures.*

Although further study is clearly needed across many arenas and disciplines, the challenge of rising disaster losses and reduced federal funding demands an immediate response. The federal government has taken a close look at the results of the past 50 years of federal mitigation efforts and is looking for ways to make changes. Although there are many competing proposals being discussed, ranging from doing away with federal hazard mitigation funding programs to efforts to foster interagency collaboration such as the National Mitigation Framework, it is still unclear what the future direction will be. The growing realization of the impacts of climate change on disaster losses adds a further complication, and perhaps political component, to the broader discussion. Additionally, Biggert-Waters Act is part of a process to eliminate the subsidization of flood insurance by the federal government. This has raised concerns regarding the affordability of living in flood-prone areas and has led some to question the equity of such an approach.

In light of the findings of this dissertation, the following recommendations are offered:

1. Do not do away with the federal role in hazard mitigation, but do look at ways to change that role. Current federal programs subsidize risky development and encourage risky behavior. The system of federal programs, which ranges far beyond FEMA, have often had unintended consequences. Perhaps it is time to consider mechanisms, such as ratings systems, to reward risk reduction by local actors.

2. To encourage individual actions by homeowners, businesses, and others, identify funding mechanisms that can seed local efforts.
3. Provide resources to local, state, and regional governments regarding contract management, procurement, and ensure that accountability is maintained when private sector contractors are utilized.
4. Identify linkages with other key national efforts, such as Energy Assurance, to identify ways to better leverage programs and to better utilize local and federal resources.
5. Look for ways that the federal government can empower local action by facilitating networking, providing technical assistance, and, at times, some funding.
6. Insist that hazard mitigation plans be truly integrated with other planning mechanisms, that they include a wide range of stakeholders, and that they be clearly reflective of mitigation actions beyond those funded by FEMA.

This dissertation set out to understand the ways in which private sector involvement in hazard mitigation came about and evolved over time, as well as the outcomes of that involvement. Although respondents were asked questions related to the role of the various sectors, many of their responses focused on issues such as local involvement or the quality of the hazard mitigation process and products. The respondents all indicated that there was a tremendous amount of variability in outcomes, independent of the use of the private sector. Instead, they raised concerns around capacity both within private firms and local governments; they highlighted the importance of locally driven and supported, collaborative efforts; and, they described a wide range of private sector actors, all with a wide range of expertise and ability. The findings of this dissertation indicate that a great deal of additional research is needed into various factors beyond the relationships between the sectors. The

respondents appeared to take for granted that the private sector would be involved in some capacity, but it is unclear the extent to which this stemmed from the clear need for wide ranging collaboration to resolve complex problems or the extent to which it stemmed from the ideological climate currently in place in support of private sector management.

Regardless of the outcomes of the essential privatization of hazard mitigation in the United States, the private sector will continue to play a key role in hazard mitigation, just as will the public and non-profit sectors. Disaster risk reduction requires the participation of all areas of society, of all levels of government, and of a tremendous array of stakeholders, including citizens. It is also keenly clear that accountability is a key concern when the private sector is utilized. The extent of private involvement is not likely to diminish and can even be expected to increase given the continuation of an ideological climate favorable to further privatization wherein the federal government is using more contractors than at any point in history (Breul, 2010). Although some theorists, such as Warner (2010) do argue that a shift away from privatization will be seen in the near future due to a lack of clear cost savings and loss of public values. Others, such as Moulton and Wise (2010) have pointed to a blurring of the line between public and private and have described the recent economic crisis as an example of the failure of the private sector requiring public intervention and proving that the market is not self-regulating. However, the role of other sectors, of partnerships, and of collaboration is tremendously important as well, as shown by the success of local performance regimes (Clarke & Chenoweth, 2006). Local mitigation actions must be facilitated by sound federal policy and technical assistance in addition to being supported by peer communities. Land use must also be a key component of hazard mitigation, and is fundamentally a local concern (Mileti & Peek, 2001).



If earlier researchers are correct, then the public sector has a clear role—neigh, a responsibility—to play, regardless of the level of involvement by other sectors, to ensure equitable distribution of services and to ensure that the most vulnerable are not left out of hazard mitigation.

Unfortunately, this is not a role that it has necessarily embraced. The origins of federal mitigation involvement, as described in Chapter 4, stemmed from the desire to reduce losses to the treasury, a fact that can at times be at odds with the need to truly reduce community vulnerability . Additionally, the federal involvement was very limited in its impacts on land use regulations, despite the provisions within the NFIP, and therefore did not prevent the continuation of hazardous development which would result in further losses to the treasury in the future. A re-examination of the appropriate government role in mitigation to achieve this mandate fully is clearly needed.

As Chapter 6 shows, a tremendous amount of hazard mitigation has taken place, but there is still a tremendous need, both in terms of ensuring that new development is not placed at risk and in terms of protecting existing infrastructure, assets, and communities. Collaboration and empowerment of local actors must be explored further. It is also necessary to avoid the technocratic trap of assuming that technical expertise alone can remedy the situation, a trap that comes at the expense of civic engagement (Fischer, 2008).

In conclusion, the privatization of hazard mitigation took place for a variety of reasons including the ideological climate, a lack of capacity in the public sector, and the realization by related businesses that a large growth industry was possible. The outcomes have been mixed, but it is clear that the public sector alone could not have tackled such a tremendous problem. The future will require multi-sectorial (public, private, and non-profit) engagement and in the government response, involvement of all levels.

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- Code of Federal Regulations 44CFR Section 201
- Disaster Relief Act of 1974, PL 93-288.

Letter from FEMA to GOHSEP, 2/6/07, Re: Office of Community Development Road Home / HMGP Acquisition Project

## Appendix A: Interview Guide

### **Interview Guide (note that not all questions apply to all interviewees):**

Questions from the Literature:

Chamberlin & Jackson (1987) provide an analysis of when institutions should pursue privatization. They also note that contracts in which goods and services are delivered directly to citizens and paid at a per person served rate can discourage dealing with the difficult cases.

Bozeman (2007) describes the conditions of market failure in which case privatization is not advisable.

1: Are there frequent purchases? How often does your municipality require hazard mitigation services? How often do you see the same client?

2: Is there abundant information? How much did you know about hazard mitigation before selecting a contractor? Was information available to you? Who made the decision? Do you find your clients to be knowledgeable?

3: Is there active competition or a monopoly? How many contractors placed bids? How many other firms are you aware of that do this type of work?

4: Are there distributional goals? Do you take need into consideration in making decisions regarding hazard mitigation projects? Is a flat rate paid per person served? Did you deal directly with private citizens?

Frederickson & Frederickson (2007) observe that the private sector may have greater capacity due to public sector budget cuts.

5: Was your decision to hire a contractor based upon budget considerations? Do you have the in-house capacity or manpower to do the work? Do you find your clients to be understaffed?

Moe (1987) notes that the federal government should not contract functions which deal with the rights of the sovereign.

6: Did the consultant make policy decisions? Relevant to what exactly? Where decisions regarding land acquisition made by the consultant?

Calhoun (2006) observes that privatization can lead to cuts in social services.

7: Were less people served as a result of the decision to use a contractor? What types of services were provided?

Gormly & Balla (2004) observe that government officials often lack the information necessary to truly distinguish between good and bad providers, particularly when responsibilities are vague and hard to monitor. Lipsky (1980) also notes that ambiguity of performance measures makes accountability difficult.

8: How detailed were the Scopes of Work provided? How much involvement did the public sector maintain?

9: How was success measured? Did you feel able to truly judge performance?

Trebilcock & Iacobucci (2003) observe that public actors are influenced by political self-interest and that the profit motive can have a positive social welfare effect

10: What role did politics play in the decisions made regarding mitigation?

11: Is future work influenced by past performance? Do prospective clients contact old ones?

Lipsky (1980) observes that street-level bureaucrats have discretion over provision of services to the public. In some cases, this discretion leads to cherry picking of easier cases. This is particularly true in an environment characterized by inadequate resources, increasing demands as supply grows, conflicting or ambiguous goals and involuntary clients.

12: Is there direct interaction between consultants and the public? What types of decisions/discretion do the consultants make/have?

13: Does the contract cover a particular number of cases? Or is it structured around other deliverables?

14: Does the public want the service being provided? Does that interest increase as more people are served?

Wisner (2004), Tierney (2006), and Miletti (1995) all find a relationship between pre-disaster vulnerabilities and the impacts of a natural hazard event

15: Did those individuals of lower socioeconomic status bear the brunt of the disaster's impacts? Mileti (1999) and Klein (2007) both note that large scale disasters can lead to changes in policies and regulations

16: Did any state or local policies change as a result of the event?

Cigler (2007) found that the bulk of disaster recovery dollars post-Katrina all went to companies outside of the region.

17: Which companies were hired to do the mitigation work? Were they local?

### **Historic Questions**

1: Ask those informants who have worked in the field historical questions relevant to the case studies.

### **Fact Finding Questions**

1: Ask informants to describe their work histories. How long have they been involved with hazard mitigation. For what types of firms and other employers have they worked?

2: Ask those informants who have been involved with hazard mitigation planning whether or not consultants were used. If the answer is “yes”, then ask about the selection process and level of local involvement in the planning process.

3: Ask those informants who have worked for the private sector about the type of staff used for hazard mitigation planning and their level of expertise.



**Vita**

The author was born in Lima, Peru and raised in Springfield, Virginia. She has been a Louisiana resident since 2001. She obtained her Bachelor of Arts from Tulane University, and her Master of Public Administration degree from the University of New Orleans. She is the founder and Executive Director of the Natural Hazard Mitigation Association.