

JURISDICTIONAL LEADERS' PERCEPTION OF FACTORS THAT CONTRIBUTE
TO HAZARD MITIGATION PLANNING

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Jurisdictional Leaders' Perception of Factors that Contribute to Hazard
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ABSTRACT

Recent disasters have demonstrated the importance of mitigating their potential impact to not only protect human lives, but to also reduce the seemingly unending cycle of repeated damages. The Disaster Mitigation Act of 2000 requires state, local, and tribal governments to have FEMA-approved Hazard Mitigation Plans in order to qualify for certain types of Federal funding. However, even with these mandates in place, there are a number of local governments that have yet to adopt a FEMA-approved multi-hazard mitigation plan. Although multi-hazard mitigation plans seem rational for reducing the impact of hazards, efforts to prepare plans and implement mitigation-related activities are oftentimes met with resistance at the local jurisdictional level. The purpose of this qualitative study is to inductively examine the social, financial, and political conditions and forces that contribute to the decision to adopt or not adopt a hazard mitigation plan in the Red River Valley.

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LIST OF ABBREVIATIONS

FEMA	Federal Emergency Management Agency
DMA 2000	Disaster Mitigation Act of 2000
PDM	Pre-Disaster Mitigation
HMGP	Hazard Mitigation Grant Program
SHMO.....	State Hazard Mitigation Officer

CHAPTER 1. INTRODUCTION

Recent disasters have shown that new technologies and efforts cannot completely safeguard individuals, assets, and communities from both natural and manmade disasters. Furthermore, sustained population growth in many parts of the world, and the ever-increasing number of individuals residing in high-risk areas also raises the probability of future disasters and increased damages and casualties. For example, in the United States alone, almost 60 percent of the U.S. population lives in areas prone to major disasters (Carr, 2007). However, the mere occurrence of a hazardous event is not enough to result in the loss of life and damage to properties. Losses occur when the impact of the hazard overwhelms the natural and/or built environment and the capabilities of the individuals or groups exposed to that event (Alesch and Petak, 2001). In other words, there must also be a certain level of vulnerability for losses to occur. Fortunately, these vulnerabilities can be reduced if adjustments are made prior to the event, which serves as the impetus for comprehensive, multi-hazard, mitigation planning.

According to the Robert T. Stafford Act, mitigation is defined as “any sustained action to reduce or eliminate long-term risk to people and property from hazards and their effects” (Title 44, Part 206.40). In other words, mitigation planning is a process by which communities identify and assess their risk associated with potential hazards, and accordingly develop and implement long-term strategies and actions for protecting people and property (Federal Emergency Management Agency [FEMA], 2007).

1.1. Study Rationale

According to the U.S. Census Bureau (2009b), there are over 39,000 local jurisdictions in the United States, and each one is eligible and strongly encouraged to

participate in hazard mitigation programs and activities. Although there is growing consensus and recognition of the value of mitigation, many local jurisdictions have failed to complete even the most basic step – develop and adopt a FEMA-Approved Multi-Hazard Mitigation Plan. As of January 2009, less than 50 percent of local jurisdictions (counties, municipalities, towns, and townships) in the United States were served by a federally approved mitigation plan (Yoon, Youngs, and Abe, 2012).

As illustrated by Figure 1, states in the Central Plains region of the U.S. have a lower percentage of their local governments completing multi-hazard mitigation plans. These percentages represent the number of local jurisdictions with approved hazard mitigation plans over the total number of eligible local jurisdictions. Table 1 presents a more detailed overview of the status of hazard mitigation plan adoption by states.

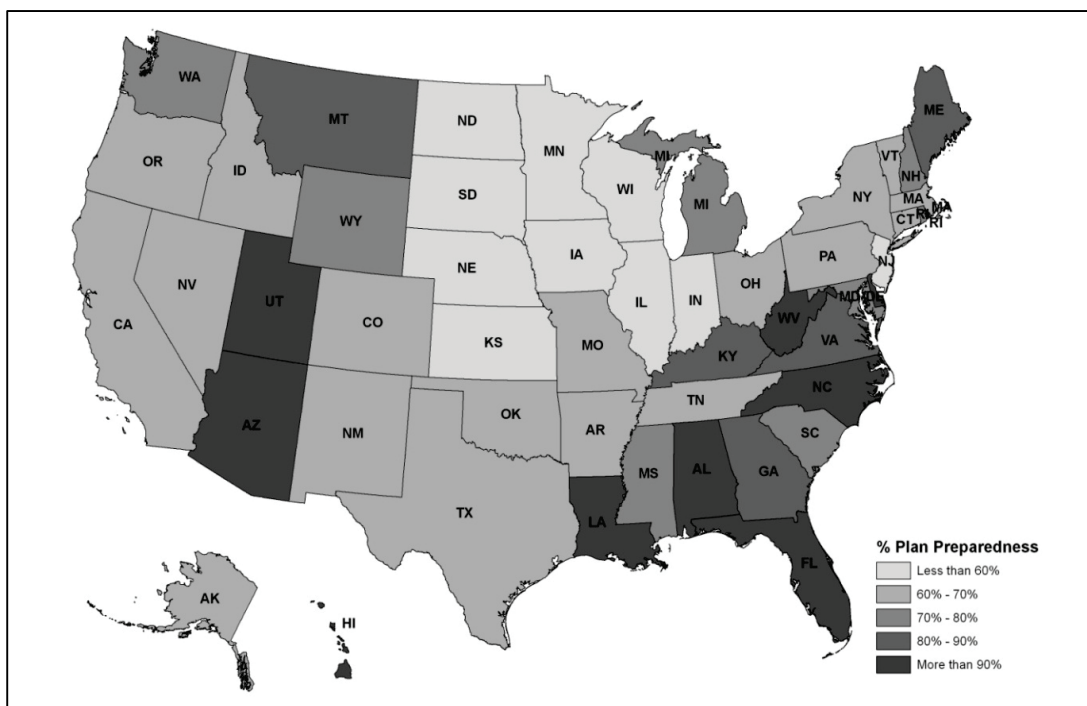


Figure 1. Percent of Local Jurisdictions in each State with Mitigation Plans (Yoon et al, 2012)

Table 1. Percent of Local Jurisdictions by State Having Approved Hazard Mitigation Plans in 2009 (Yoon et al, 2012)

Hazard Mitigation Plan Adoption Rate	States
More than 90% adoption	Alabama, Louisiana, Florida, Utah, North Carolina, Delaware, D.C., Hawaii
80% - 89%	Maine, Montana, Georgia, Kentucky, Virginia
70% - 79%	New Hampshire, South Carolina, Rhode Island, Wyoming, Washington, Mississippi, Maryland, Michigan
60% - 69%	California, Missouri
50% - 59%	Vermont, Connecticut, Texas, Pennsylvania, New Mexico, Tennessee, Nevada
40% - 49%	Idaho, Colorado, Arkansas, Oklahoma, Oregon, New York, Ohio, Massachusetts
30% - 39%	Alaska
20% - 29%	Iowa, New Jersey, Minnesota, Wisconsin, North Dakota
10% - 19%	South Dakota, Indiana, Illinois
Less than 10%	Nebraska, Kansas

Although multi-hazard mitigation strategies are important for reducing the impact of hazards, the existence of mitigation plans is lacking in certain areas as shown in Table 1. However, the importance of adopting and maintaining these plans is increasingly essential today as a result of Public Law 106-390, also known as the Disaster Mitigation Act of 2000 (DMA 2000). DMA 2000 provides the legal foundation for mitigation planning in the United States, and sets the planning requirements for State, local and Indian Tribal governments. DMA 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act in October of 2000 by repealing the previous mitigation planning provisions and replacing them with a new set of requirements that emphasize the need to closely coordinate mitigation planning and implementation efforts. Specifically, a FEMA-

Approved Multi-Hazard Mitigation Plan must include, at minimum, the following elements: documentation to demonstrate participation in the planning process; a hazard identification and risk assessment component; mitigation goals and strategies to reduce/avoid vulnerabilities; documentation to demonstrate the maintenance and implementation of the plan (for plan updates only); and lastly, documentation that the plan was formally adopted (FEMA, 2013).

Due to the real and perceived benefits of implementing hazard mitigation programs, the U.S. Federal government now requires local and state governments to have a FEMA-Approved Multi-Hazard Mitigation Plan as established by DMA 2000 in order to qualify for Pre-Disaster Mitigation (PDM) and Hazard Mitigation Grant Program (HMGP) project grant dollars (FEMA, 2007). These programs are critical sources of Federal funding, especially for a community that wants to proactively initiate mitigation projects using PDM dollars, or for a community that needs HMGP funding following a presidentially declared disaster. Consequently, with the enactment of the DMA 2000, hazard mitigation planning is more salient in the United States. In fact, Schwab and Brower (2008) state that many of the communities that have participated probably would not have done so had it not been for this Act.

Although DMA 2000 serves to strongly encourage local jurisdictions to adopt and maintain hazard mitigation plans, overall compliance to do so has been surprisingly low in some areas. The fact that so many local jurisdictions lack mitigation plans is disconcerting. Furthermore, because local governments serve as the “point of delivery” for hazard-related policies, and consequently play a major role in the collective success or failure of hazard

mitigation policies in the United States (Prater and Lindell, 2000, p. 81), it is critical to understand why so many jurisdictions fail to adopt and maintain these plans.

One reason for the lack of compliance may be the limited capacity and capabilities of these communities (Alesch and Petak, 2001). Capacity, in reference to disaster management planning and operations, can be broadly defined as the amount of resources – both tangible and intangible – that are available [at the individual and/or organizational levels] to execute or carry out certain functions to promote the safety and well-being of a community (Yoon et al., 2012). Here, the concept of capacity is used in very general terms and simply conveys whether or not jurisdictions or the individuals preparing the plan, have the knowledge, experience, resources, and support to carry out the necessary steps to fulfill the mitigation plan requirement.

1.2. Research Question

The purpose of this qualitative study, then, is to explore the following question: What factors, conditions, and forces contribute to and promote the development and adoption of a FEMA-Approved Multi-Hazard Mitigation Plan in the Red River Valley? Specifically, this study investigates the role of capacity and seeks to refine this concept by understanding how capacity affects the local jurisdictions' motivation or ability to develop and maintain hazard mitigation plans. As part of this study, it was important to understand how emergency managers perceived and interpreted the mitigation planning directorate, and to discover what factors and conditions enabled or prevented these emergency managers from developing and adopting hazard mitigation plans.

1.3. Study Area

This study focuses specifically on the Red River Valley. As illustrated by Figure 2, the Red River of the North Basin includes parts of Minnesota, North Dakota, South Dakota, and Manitoba. This study focused specifically on local jurisdictions (counties and municipalities) in the Red River Valley in the state of North Dakota. In addition, the selection of the Red River Valley presented an interesting study area for the following reasons: 1) Jurisdictions in the study area share common hazards, primarily flooding from the Red River of the North; 2) the Red River Valley recently faced historic flooding; and 3) the jurisdictions in the Red River Valley are mostly rural. Additionally, overall compliance of local municipalities (cities and towns) in North Dakota was relatively low compared to other states (see Table 1). Table 2 provides the mitigation plan approval status for the counties and municipalities within the study area.

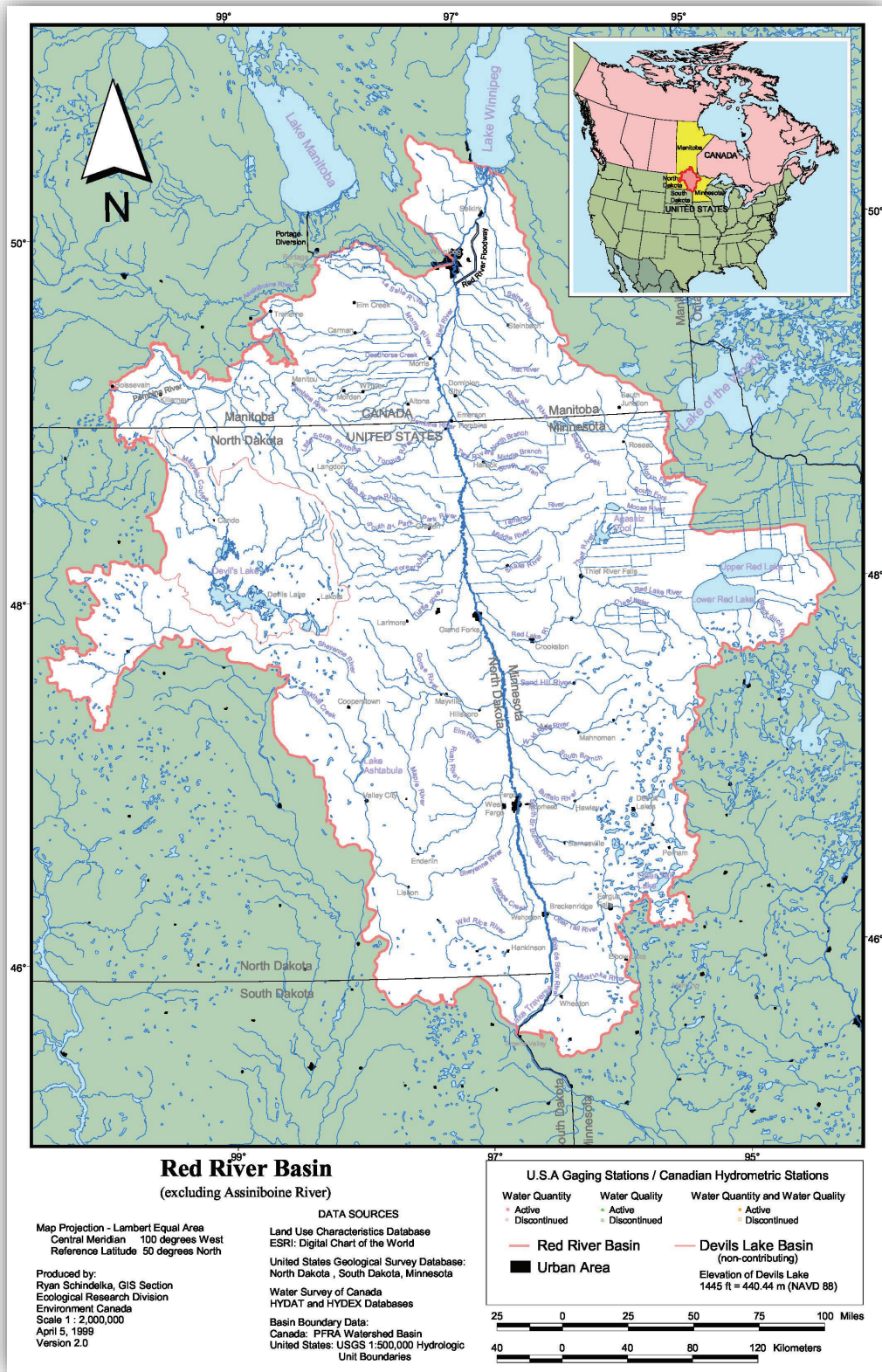


Figure 2. Red River of the North Basin (Ecological Research Division Environment Canada, 1999)

The following counties below (see Table 2) were selected for this study due to their location within the Red River Valley of the North Basin:

Table 2. ND Municipalities' Mitigation Approval Status as of 1/31/2009 (FEMA, 2009c)

County	# of Municipalities	# Approved	Percent Approved
Pembina	23	11	47.83
Cass	60	27	45.00
Walsh	44	13	29.55
Traill	28	8	28.57
Ramsey	38	10	26.32
Sargent	27	7	25.93
Cavalier	47	12	25.53
Barnes	54	13	24.07
Nelson	31	7	22.58
Foster	20	4	20.00
Grand Forks	52	10	19.23
Ransom	26	5	19.23
Pierce	17	3	17.65
Wells	40	7	17.50
Towner	33	5	15.15
Griggs	20	3	15.00
Richland	40	5	12.50
Eddy	18	2	11.11
Rolette	9	0	0
Benson	41	0	0
Sheridan	15	0	0
Steele	21	0	0

In closing, this chapter described the study rationale, and provide an overarching description of the challenges many communities face regarding the development and maintenance of their respective hazard mitigation plans. The following chapters are organized as follows. Chapter 2 provides a review of the existing literature and specifically discusses factors that contribute to hazard mitigation planning and previous findings related to the concept of capacity. Chapter 3 describes the research design and methodology, Chapter 4 provides the key findings from the study, and Chapter 5 discusses the findings in relationship to the existing literature. The concluding Chapter provides a summary of the study, discusses research limitations, and identifies opportunities for future research.

CHAPTER 2. LITERATURE REVIEW

The literature review focuses on a broad range of published studies related to mitigation planning. Specifically, this review addresses the concept of capacity, and also includes a discussion of interrelated topics including salience, risk perception, and expectation of losses.

2.1. Factors Contributing to Hazard Mitigation Plan Development

Whether or not hazard mitigation plans are adopted by local governments is dependent upon many complex factors. Although it is easy to presume that the reluctance on the part of local jurisdictions and their respective governments to embrace risk reduction policies is the result of decision-makers underestimating or simply being unaware of the potential risks facing their communities, the problem is not quite that simple. In order to effectively examine the factors contributing to hazard mitigation plan preparedness at any level, it is important to first recognize that these decisions are made as a result of the interactions and experiences of key players acting within complex social systems and processes, which includes the efforts to meet various institutional demands within their respective communities or organizations. This is further supported by the growing body of literature suggesting that disasters and the perception of risk are, to a large degree, socially constructed (Tierney, 1989; McEntire and Marshall, 2003; Bolin and Stanford, 1999); and suggests that the assessment of hazards and their potential risks are by no means made purely at an objective level. Instead, it suggests that the decision to adopt and implement disaster-related policies and actions are largely influenced by social conditions and forces that are not necessarily obvious to the public or to the decision-makers themselves.

2.1.1. Salience and Risk Perception

Although a review of the disaster literature tends to support the perception that previous experiences with disasters have a positive influence on a jurisdiction's willingness to engage in mitigation-related activities (Yoon et al., 2012; Prater and Lindell, 2000; Banerjee and Gillespie, 1994; Pearce, 2003; Seigrist and Gutscher, 2008; and Wolensky and Wolensky, 1990), many local governments do not face the immediate and/or the constant threat of a hazard on a day-to-day basis. Therefore, hazard mitigation related activities are not something that garners a lot of attention prior to a disaster or catastrophic event occurring in that jurisdiction. However, according to Ciglar (2006/2007), "the governments least likely to perceive the threat of disaster as a very high priority (local governments) are at center stage in terms of responsibility and are limited in their capacity – financial, managerial, technical, and political will – to deal with hazards" (p. 4).

With respect to mitigation planning, Godschalk and Brower (1985) indicate that the lack of initiative toward mitigation activities and strategies by local governments may be because low priority is given to disaster-related policies in many of these communities. Upon reviewing the disaster literature, Tierney (1989) also concludes that certain challenges associated with promoting hazard mitigation activities can be seen as the result of low salience of overall disaster-related policies in a community. Similarly, Birkland (1997) and Prater and Lindell (2000) seem to believe that the adoption of disaster-related policies remains low because many jurisdictions are already faced with challenging day-to-day problems, which supersede the need to engage in hazard mitigation activities, especially since the disaster itself may never occur.

According to Alesch and Petak (2001), there must be a collective acknowledgement or perception among key decision-makers within a community that an adverse risk exists. Lindell and Perry (1992) further reiterate that in order to formulate a successful hazard mitigation program, a community must “first be aware that the hazards exist and *believe* [italics added] that a risk of significant negative consequences is posed” (p. 30). In addition to having a certain level of awareness of the potential hazards facing a community, Schwab and Brower (2008) suggest that those decision-makers must also accept that they are both capable and responsible for minimizing those risks (p.38).

As Berke and Smith (2009) state, “mitigation is often reduced to a series of disconnected projects intended to address past mistakes, and is therefore not part of a comprehensive and integrated planning approach” (p. 7). As such, the mitigation strategies and actions identified in local mitigation plans can be very revealing, and may suggest communities’ awareness of their risks and the perceived value mitigation planning offers to their respective jurisdictions.

Birkland’s (1997) research on focusing events seems to suggest that “the disaster problem,” such as the limited participation of local jurisdictions in adopting hazard mitigation plans, will continue to languish “near the bottom of national, state, and local priorities until the problem is elevated on the agenda, not by political activity, a change in indicators, or some political perturbation, but by a completely exogenous and largely unpredictable event” (p. 49). Tierney (1989) argues, however, that “disaster events do not open *windows of opportunity* [italics added] merely by increasing the salience of a problem” (p. 380). Greater salience is achieved, rather, when the “operation of the political economy” is disrupted (p. 380). This can be achieved when groups mobilize after a

disaster and temporarily counteract the power of influential economic and political stakeholders (Tierney, 1989). The challenge, though, is that under the current political environment in many local communities, it is difficult to find a broad-based constituency base championing the need for mitigation-related activities before, during, and even after an event. Instead, it is more likely that hazard and risk reduction measures will face direct opposition, especially when private property and economic freedoms are threatened.

2.1.2. Expectation of Losses

One of the most important factors in the discussion of risk perception and salience as a motivator for hazard mitigation planning is that local jurisdictions and their governments must have the expectation that they will suffer losses if no actions are taken to prepare or mitigate the potential risks posed to that community (Alesch and Petak, 2001). For hazard mitigation plans and their subsequent actions to have any legitimacy, they must be seen as viable solutions to minimizing the potential damages from natural and manmade hazards. The expectation of losses from a potential disaster must also exceed the rationalizations presented by the opposing forces that normally confound or delay mitigation efforts.

2.2. Capacity and Capability

Even in communities where the potential risks from hazards are acknowledged, and support for disaster-related policies are high, hazard mitigation plan compliance may still be low. One reason may be due to the lack of capacity and limited capabilities of that community (Alesch and Petak, 2001). Though the two terms, capacity and capability, are oftentimes used interchangeably in the disaster literature, it is useful to conceptually delineate the two terms. Capacity, in reference to disaster management planning, can be

broadly defined as the amount of resources available to an organization to execute or carry out certain functions to promote the safety and well-being of a community. Although very similar to capacity, capability, with regards to disaster management, can be defined as the actual *ability* of an institution or individual to perform actions necessary to anticipate, prevent, prepare for, cope with, respond to, or recover from the impact of a hazard. The purpose of delineating the two concepts is simply to show that having capacity, or the essential resources in-hand, does not necessarily translate into being capable of executing those actions. Capacity simply expresses the potential to act accordingly based on the availability of resources, which can be both tangible and intangible. Capability, then, could be considered the sum total of the knowledge, support, and experience required to perform or accomplish a certain task. With respect to disaster management, it is important to have both capacity and capability.

An analysis of the disaster literature regarding these two concepts seems to indicate that capacity and/or capability building is an important component to addressing a community's vulnerabilities and, as a consequence, increases a local jurisdiction's resilience to hazards. Regarding matters specific to hazard mitigation, Schwab and Brower (2008) specify that capacity building "infers that the knowledge base necessary to plan for and implement hazard mitigation measures primarily reside within the community itself" (p. 38). Similarly, Kapuco (2007) defined capacity building as the means by which a community can "tap into its own strengths and abilities" (p. 23). Kapuco (2007) further reiterates that capacity building is contingent upon having the necessary resources and the will to mobilize them. Schwab, Eschelebach, and Brower (2007) use the concept of

capability to include the community's "institutional framework, technical know-how, and ability to pay for mitigation" (p. 453).

In this study, all major aspects of capacity were explored; however, the current literature seems to focus – albeit somewhat sparsely – on the following categories: human resource capacity, financial resource capacity, and political resource capacity. Even though other categories likely exist, these three categories serve as major factors for disaster planning at the local jurisdictional level.

2.2.1. Financial Resource Capacity

Financial resource capacity can be broadly defined as the availability of funds or the fiscal flexibility within a community to support the adoption and implementation of local hazard mitigation activities. Schwab and Brower (2008) introduce the concept of "fiscal capability," which they define as the ability to "fund or to seek funding for mitigation projects and activities" (p. 10173). According to Schwab and Brower (2008), local governments can increase their financial capacity by using creative means to fund or finance mitigation activities instead of relying on the typical revenue streams sponsored by the state and federal governments. Alesch and Petak (2001), in referring to organizational capacity within earthquake prone areas, observe that businesses and organizations that are well established and are profitable are more likely to engage in mitigation type activities than those that are not.

Acknowledging factors within the broader category of financial resource capacity in this study is important because, as Lindell and Perry (1992) report, many local jurisdictions and their governments, on average, allocate minimal financial support toward their emergency management departments, their functions, and operations. Consequently,

Lindell and Perry (1992) observe that local jurisdictions face far greater financial constraints than their state and federal counterparts. Similarly, Boswell, Siembieda, and Topping (2007) found that many of the communities in California that did not prepare local hazard mitigation plans were typically smaller and had a high percentage of their local population below the poverty line when compared to communities that had adopted plans. They suggested that the lack of resources, such as limited funding and staff, may have contributed to their failure to adopt plans (Boswell, Siembieda, and Topping, 2007).

2.2.2. Human Resource Capacity

Human resource capacity can be broadly defined as the availability of staff and personnel who have the technical know-how, experience, and time to adequately coordinate the development and implementation of hazard mitigation plans, including other aspects of disaster management activities within a community. Rubin and Barbee (1985) indicate that it is important for local jurisdictions to not only have the “ability to act” but also have the “knowledge of what to do.” Therefore, the importance of having experienced staff cannot be overstated.

Much of the literature suggests that the lack of human capacity, namely inadequate staffing levels and lack of technical expertise at both the state and local levels, seems to hinder proactive steps to adopt or implement mitigation plans because of the insufficient levels of manpower and/or experience (Godschalk and Brower, 1985; Alesch and Petak, 2001; Boswell, Siembieda, and Topping, 2007; Tierney, 1989; Rubin and Barbee, 1985). However, it should be noted that one study by Berke, Beatley and Whilhite (1989) did not find a significant relationship between the number of staff hours allocated and the adoption of planning measures for mitigation within earthquake prone areas. According to

Godschalk and Brower (1985), the technical complexities of adopting hazard mitigation plans can oftentimes be beyond the capabilities of many government employees. Referring specifically to mitigation, Schwab and Brower (2008) define technical capability as “the ability to carry out hazard identification and vulnerability analyses to produce accurate information regarding where and to what extent hazards are likely to impact the community” (p. 10173). Berke and Smith (2009) defined “technical capacity” as having accessibility to analytical tools, such as GIS, and the associated skills to utilize those tools within the mitigation planning process. So, in addition to having adequate staffing levels, local jurisdictions must also be concerned with making available or acquiring experienced personnel.

In their study comparing urban and rural mitigation plans for quality, Horney, Naimi, Lyles, Simon, Salvesen, and Berke (2012), found that urban areas typically had a greater “existing capacity” to plan overall (p. 189). Specifically, Horney et al. (2012) suggest that having more full-time staff or certified planners, technology, the capability to support participation opportunities for stakeholders, and having “more extensive information available online” can conceivably enhance certain aspects of the hazard mitigation planning process (p. 189).

Smith, Lyles, and Berke (2012) suggest that one of the reasons why mitigation plan quality is lacking could be attributed to the fact that mitigation plans are predominantly led by emergency managers and not planners. Similarly, Berke and Smith (2009) state that “local land use planners fail to recognize that hazard mitigation planning falls within their professional purview” (p. 8). Instead, Berke and Smith (2009) state that mitigation planning is “framed in the context of emergency management and considered the responsibility of

local emergency management officials even though they possess limited experience in land use planning and working with local planning officials” (p. 8).

2.2.3. Political Resource Capacity

Political resource capacity can be defined as the level of political resolve and overall support that is present within a community to back hazard mitigation activities and policies. Schwab and Brower (2008) define political capacity as the “willpower to propose and carry out enduring mitigation strategies notwithstanding the shortened horizon of some elected positions” (p. 10173). Other factors, such as a local government’s level of adaptability and flexibility to consider new policies and actions, are also part of gauging a community’s level of political capacity (Rubin and Barbee, 1985). According to Schwab, Eschelebach, and Brower (2007), the absence of political support can be one of the biggest obstacles to implementing hazard mitigation strategies, which is why factors related to political capacity are important to this discussion.

From a broader perspective, the success or failure of mitigation efforts largely depend upon the political environment within that community (Wyner, 1984). Due in part to our nation’s “culture of individualism and the sanctity of private property,” these cultural values and expectations in the United States elucidate into why hazard mitigation programs may be met with certain trepidation (Mileti, 1999, p. 145). Mileti (1999) indicates that this same respect for property is also shared in individuals’ right to accumulate profits. This is one reason why political economy issues should be fundamental in our understanding of the challenges surrounding the adoption and implementation of hazard mitigation plans. Governments are faced with an interesting challenge in that they must be able to balance the need to promote capitalism and economic development while still fulfilling its

obligation to promote the safety and well-being of their community and citizens (Tierney, 1989). It is in this conflict that the drive to protect short-term profits and interests is often led by “economic elites and pro-development interest groups” who are typically “key actors in opposing hazard mitigation measures when they are proposed and in weakening those measures that are instituted” (Tierney, 1989, p. 378). Consequently, with the involvement and self-interests of so many key stakeholders, adopting and implementing hazard mitigation initiatives can become a politically charged matter. In some cases, it can also become a legal matter, which is another reason some local governments may hesitate to implement their plan. Therefore, the need to mobilize a constituency and widespread support is critical.

In order to increase a community’s political capacity to adopt hazard mitigation policies and actions, there is great need for the general public, or more specifically, a grassroots movement within that community to help put mitigation on the local political agenda, especially if local officials are less concerned (Lindell and Perry, 1992; Prater and Lindell, 2000; Schwab and Brower, 2008; Wyner, 1984). Berke, Beatley, and Whilhite (1989) found that within the earthquake domain, the presence of advocates was one of the more significant factors in determining whether a community adopted mitigation activities. However, they suggest that the presence of advocates is most influential in those communities where mitigation planning has low salience, and not in communities where mitigation planning is already accepted or valued. Similar to having an advocate, other researchers have emphasized the importance of having a policy entrepreneur to champion the issue of mitigation (Tierney, 1989; Wolensky and Wolensky, 1990; Prater and Lindell, 2000; Olson and Olson, 1993). An example of an effective policy entrepreneur would be

one who has a combination of “technical expertise in hazards with political expertise and personal commitment” (Prater and Lindell, 2000, p. 76). However, from a realistic standpoint, an individual who fits those criteria may be hard to come by in a local community. Therefore, Prater and Lindell (2000) stress that successful hazard mitigation policy entrepreneurs are those individuals who can form coalitions and involve subject matter experts in the planning process.

Interestingly, Horney et al. (2012) found that rural areas possessed stronger inter-organizational groups when compared with urban areas in their study, and suggested that rural areas may have more success in bringing additional stakeholders to the table to be part of the mitigation planning process. Specifically, Horney et al. (2012) indicate the following:

Implementation in urban areas may be more complex in that it requires a broader set of local government and non-governmental actors to work in coordination. Similarly, the significantly stronger inter-organizational coordination seen in rural plans may reflect a greater homogeneity of the groups participating in the planning process. Many individuals in rural areas may work for multiple agencies or “wear many hats” as is common in rural areas that lack the personnel and resources to fill all positions. Organizations in rural communities are also likely to share a small staff with a long history of working together, particularly around disaster preparedness and response, which can contribute effective inter-organizational coordination and to a shared vision for future planning (190).

So, while rural jurisdictions may be at a disadvantage in areas such as human and financial capacity, these jurisdictions may be able to leverage their circumstances to create greater participation by developing a common vision for their jurisdiction.

In closing, this chapter has attempted to briefly review and highlight the existing literature on this topic. Although the literature is sparse and lacks significant substance and empirically-based findings, especially with respect to capacity and capability-building within the realm of emergency management, the existing literature does provide a good foundation and starting point in which to initiate this qualitative inquiry.

CHAPTER 3. RESEARCH DESIGN

This qualitative study examined the social, financial, and political conditions and forces that contributed to the adoption of hazard mitigation plans in North Dakota's Red River Valley. This study specifically investigated the role of capacity, and how it impacts local jurisdictions' level of hazard mitigation plan development. In order to better understand this topic, the study specifically looked at the duties, motivations and perceptions of local emergency managers regarding the unique challenge of developing and adopting hazard mitigation plans in the Red River Valley.

In this study, the concept of capacity served as a "sensitizing concept" to "merely suggest directions along which to look" (Blumer, 1969, p. 148). This approach also seems appropriate as the concept of capacity has been used intermittently in the disaster research literature, and has yet to be clearly delineated or operationalized. As a result, the concept is used with little clarity. As such, one of the main purposes of this thesis was to explore what capacity-related factors contributed to the development of a mitigation plan using a qualitative research approach of conducting in-depth interviews with local emergency managers. In doing so, a deeper understanding of the concept's meanings, attributes, and implications were gained. Furthermore, this approach is justified due to the importance of understanding the meanings associated with the requirement to fulfill the mitigation plan requirement, which provides a clearer understanding as to why certain jurisdictions do or do not comply with hazard mitigation plan directives.

3.1. Unit of Analysis

Because the development and adoption of a community's hazard mitigation plan takes place at the local jurisdictional level, the individuals selected to be interviewed

included the local jurisdictional employee that has been designated as the emergency manager or is the person most responsible for contributing to the development of the hazard mitigation plan in that community. For the purposes of this study, the respondent was the unit of data collection. The local jurisdiction, which is the unit of analysis, is defined as any county, city, town or township.

This chapter presents the research design. The next section begins with an overview of the population and selection process. The chapter also includes a description of the data collection and data analysis process.

3.2. Population

The focus of this study is all counties near the Red River Valley of the North Basin in North Dakota. As indicated in Chapter 1 (see Study Area), a total of 38 counties comprise the study area. For this study, local jurisdictions were defined as any county, municipality, town, or township. In each of the 38 counties, the person most responsible to participate in developing the mitigation plan was contacted. Permission letters to the appropriate individuals were sent out and necessary IRB approvals were obtained (see Appendix B). A census was employed because all elements in the population were contacted. Of those who were contacted, in-depth interviews were conducted with 15 emergency managers representing counties, municipalities, towns, and townships. Ten individuals at the county level agreed to participate in the interviews. Five individuals at the municipal level were also interviewed.

With assistance from the county emergency managers that were interviewed, municipal individuals were identified as possible interviewees. It should be noted that not all county emergency managers were willing or able to identify potential interviewees at

the municipal level. The criteria for municipal level participants included participation in the mitigation plan process and someone who was most responsible for emergency management type responsibilities in their respective municipality.

3.3. Data Collection

In-depth qualitative interviewing was the mode of data collection (Rubin and Rubin, 2005). Although face-to-face interviews were preferred, 12 of the interviews were conducted via telephone. The interviews were conducted from June 2011 to November 2012. Also, in order to be consistent with the qualitative interviewing approach, the in-depth interviewing process was semi-structured and neutral probes were used to prompt additional comments from participants as needed. An interview guide was used to make sure key topics were covered. The guide included questions about perception, motivation, and capabilities pertaining to the mitigation plan development directive. It should be noted that as the data collection process began, the interview guide was modified or expanded to include additional questions as new themes emerged. Also, in addition to keeping detailed field notes, interviews were digitally recorded and transcribed.

As part of this study, participants were notified that this thesis, or any subsequent articles, will not contain identifiers such as names, addresses, or the names of local jurisdictions. However, due to the limited size of the population area, confidentiality was not guaranteed. It should also be noted that during the time interviews were conducted, major spring flooding had been a regular annual occurrence in the Red River Valley.

3.4. Data Analysis

During the analysis phase, relevant attributes related to capacity were coded from the raw interview data. Similarities and differences between communities were also

analyzed. The results provided key insights into the perceived challenges facing local emergency managers regarding the development and adoption of hazard mitigation plans.

As stated previously, the overall purpose of this study is to clarify the concept of capacity as it relates specifically to hazard mitigation planning. As part of this process, the researcher identified and coded for relevant themes, categories, attributes, descriptions, patterns, variations, and indicators to further clarify and refine this concept as it relates to emergency management.

Consistent with the approach recommended by Rubin and Rubin (2005), the data analysis process for this study involved five steps. These included first, analyzing data throughout the entire data collection process; second, discovering and elaborating operative themes, categories and attributes; third, labeling each concept or theme; fourth, coding the interview transcriptions; and fifth, sorting and linking data to attain a holistic synthesis.

CHAPTER 4. FINDINGS

This study sought to capture the perceptions of the local jurisdictional employee most responsible for contributing to the development and maintenance of the hazard mitigation plan in his/her community. The research identified a broad range of issues, which will be discussed in this section. The findings are organized into two major categories: 1) Motivations to develop a mitigation plan and 2) Capability and capacity factors that inhibit mitigation plan development and maintenance.

Throughout the interview process, the researcher was cognizant of protecting the confidentiality of the participants. Because emergency management operates within a politically sensitive environment, it is especially important to be mindful of maintaining the confidentiality of the participants. Revealing names, places, and specifics would disclose the participant and their professional perspectives, which could, in some instances, compromise their position. For this reason, all names, affiliations and specificities that could reveal the individual participant and their contribution to the research were removed.

4.1. Motivations to Develop and Maintain a Mitigation Plan

Although there are presumably many perceived benefits to mitigating the hazards in a community, it was interesting to note the interviewees' responses when asked why they did or did not participate in the development of their communities' hazard mitigation plan. Based on the researcher's interpretation of the data, the motivations and reasons to develop and/or participate in the hazard mitigation plan development process can be described by the following themes: 1) meeting the federal mandate, 2) hazard experience and risk perception, and 3) perceived value (see Table 3).

Table 3. Motivations to Develop a FEMA-approved Multi-hazard Mitigation Plan

Category	Subcategory
The Carrot and the Stick: Federal Disaster Funding and Eligibility	Post-disaster reimbursement eligibility
	A necessary evil
Hazard Experience & Risk Perception	
Perceived Value and Benefit	Challenges implementing the plan
	Too many strings attached
	Rural communities don't benefit

4.1.1. The Carrot and the Stick: Federal Disaster Funding and Eligibility

The “Carrot and the Stick” concept describes the participants’ belief that one of the purposes of having an approved plan for their jurisdiction is that it qualifies their community for federal disaster resources and funds. Specifically, the U.S. government now requires local and state governments to have a FEMA-approved multi-hazard mitigation plan in order to qualify for Pre-Disaster Mitigation (PDM) and Hazard Mitigation Grant Program (HMGP) project grant dollars (FEMA, 2007). These programs, which fall under the DMA 2000 legislative directive, are critical sources of federal funding, especially for a community that wants to pursue mitigation projects using PDM dollars, or for a community that needs HMGP funding following a presidentially declared disaster. One emergency manager said, “It is the sole reason why we do it.” Another participant expressed when asked why they plan, “It’s about probably 90 percent is the threat of not receiving funds if

you don't have the plan." All of the county-level emergency managers that were interviewed indicated that access to federal funds was a motivation to develop and/or maintain their hazard mitigation plans. This is in-line with Schwab and Brower's (2008) findings that many of the communities that have participated probably would not have done so had it not been for the legislative mandate.

4.1.1.1. Post-disaster reimbursement eligibility

Even though the opportunity for both pre- and post-disaster funding, as outlined in DMA 2000, is dependent upon having an approved hazard mitigation plan, many participants seemed driven more by the potential for post-disaster funding. One participant indicated that the impetus to have an approved plan was "You are able to seek reimbursement for your damages." The participant further reiterated "if we didn't get reimbursement, there's a lot of stuff that would not get fixed." As one emergency manager said, "If there wasn't a threat of some FEMA funding getting held back during a disaster, I think very few of the incorporated cities in [omitted] County would actually even bother with completing it."

4.1.1.2. A necessary evil

One emergency manager summarized his feelings toward the mitigation planning requirement with the following statement:

I think the hazard mitigation plan is just a real, real burden to the political subdivisions. They have to jump through the hoops that FEMA makes you do. To hire a consultant to do this plan ranges along the neighborhood of maybe \$20,000 to \$50,000 per county, so it's a very, very expensive plan to complete and this requires an awful lot of work on the county's part to complete the plan, and I question in my

mind whether it's actually worth the expenditures. But we're doing it because it's a federal mandate and if we don't do it then there's certain types of disaster funds that we don't receive if we get a presidential disaster declaration So you're talking to someone that's not a big fan of this plan at all, *but we do it* [italics added].

Overall, participants recognized the need for their communities to have a FEMA-approved hazard mitigation plan. However, some participants also seemed at odds whether an incident would ever necessitate the need for post-disaster federal funding, or be so severe that their community would meet the threshold for a presidential disaster declaration.

4.1.2. Hazard Experience and Risk Perception

Due to the proximity of local jurisdictions in the study area to the Red River, it was presumed by the researcher that flooding would emerge as a strong motivating factor for participants to have an approved hazard mitigation plan. At the time the majority of interviews for this study were conducted, the Red River Valley in North Dakota had just experienced unprecedented flooding the previous year. Not surprisingly, the justification offered in many of the interviews for having a hazard mitigation plan was predominately focused on flooding. Although this was expected, participants who perceived their flood risk to be low tended to diminish the importance of having a hazard mitigation plan. For example, one participant concluded:

We don't have any floodplains in our county. We don't have any major needs for a buyout of a major city or a block. Our mitigation is very minimal. We have used it very little. That is why it is not worth the money for us to put it in place.

One municipal leader stated, “They [county] got a mitigation plan, one we don’t get flooding in here, so we don’t ever get anything out of that with FEMA, so there’s really not a lot we can do here with that.”

In some instances, participants whose community did face the threat of significant flooding still devalued the hazard mitigation plan. One emergency manager noted:

I don’t think anyone really cares about the plan that much because [omitted] residents know where the flooding is, they know how high the water is. When they forecast it, they know what to expect and nobody opens up that hazard mitigation plan to assist them in flood fighting any way.

Another participant added, “We are pretty much flood proof. We bought out so much, the floods don’t affect the cities very much. We are in pretty good shape. The major cities are built away from the river.”

Based on the data analysis, the perceived risk of flooding seemed to be a major motivational factor in participants’ determination of the mitigation plan’s benefit to their respective community. Because the flood risk was such a central focus of the participants, most likely due to the recent historic flooding event in the region, it seemed their view of the hazard mitigation planning directive was not through an all-hazards lens.

4.1.3. Perceived Value and Benefit

A number of participants, specifically those from the smaller rural jurisdictions, expressed that the hazard mitigation plan lacked value and relevance for their community.

One interviewee stated:

Our county is less than 2,000 people in our whole county. For us to do a hazard mitigation plan that costs \$20,000 and do it every five years it’s foolish, we will

never get any use out of it. Every five years we are throwing away 20 to 30 grand to do an update plan based on the feds.

Another participant stated that the common sentiment in his county was, “Why are you asking us to do this when it really provides no benefit for us.” Similarly, another emergency manager shared:

Well, the question that I always get from them [municipalities] is why do I have to do this? What’s the value for us? You’re asking us to do this but we’ve never been able to take advantage of any of the benefits.

4.1.3.1. Challenges implementing the plan

While one of the perceived benefits of having an approved plan is the eligibility of both pre- and post-disaster federal funds, many participants found the implementation of their plans, particularly to take advantage of pre-disaster mitigation funds, to be just as cumbersome and challenging as developing and maintaining the plan itself. In fact, the perception that having an approved mitigation plan provided no benefit was largely associated with the perceived inability to apply for and be eligible to receive funding for their pre-disaster mitigation projects. For example, one emergency manager stated:

The challenge of implementing the plan does not justify the cost of developing a plan. We spent like \$8,000 to do a mitigation plan. We had the plan done. We applied for four projects. They were all turned down. So I am saying, okay, we spent \$8,000 to do four projects. They all got turned down. Each project was probably \$4,000 a piece. We could have done two of the projects for what I spent to apply for the project. So this is not working, my math does not corroborate. We don’t need a plan. We will take the money and do our own mitigation. Well, they

don't want that either. So they say you can't do that. Well look, if you don't have a mitigation plan, you don't qualify for any FEMA aid. So, it is the old carrot and the stick. We will dangle it here, and you have to do this or we cut off all of your funds. So they black mail us. And we understand it, because there are things you have to black mail people to get things done. But this is a case where we see no benefit out of the mitigation plan. It has not helped our county except for these last two floods we are getting a little mitigation money.

When asked if municipalities perceive the benefits of having a hazard mitigation plan, one emergency manager noted,

See, I believe they understand, they understand. But they just don't seem to interest them. I think, because of the, it is you know, takes two years to get even the money if you have a project. But we just don't meet those thresholds.

Another participant added, "But I mean it would be worth it if we would be able to be eligible for it. I mean, but it seems like there are roadblocks; every time there is someone wants to mitigate something and gets kind of thrown out because of ineligibility." This emergency manager, while talking about the plan development process, expressed the following:

It was a lack of interest on their [municipalities] part because they didn't understand it for one thing and when you put your risks and hazards down, nothing was going to come of it, they weren't going to get any funding for their hazards. So they weren't really interested... There were some cities, of course, that took it seriously but for the most part, we had to almost fill out the form ourselves for some of those jurisdictions because they really didn't care.

Another emergency manager described the challenge of getting municipalities to see the value of the hazard mitigation plan with the following statement:

Exactly and it doesn't play off so much from the planning piece although from my perspective it's certainly evident but from taking advantage of being a plan participant and being able to apply for funding of a project, it becomes very difficult for them from a personnel standpoint and from a cost standpoint because there is a cost involved typically. From what I hear from these communities is number one, we don't have the staff to prepare projects to apply for grants and we don't have funds to match that grant. And we don't have funds to hire consultants to help us... engineering firms for example, which is typically what any of the communities use to go ahead and do that work.

4.1.3.2. Too many strings attached

Similarly, one emergency manager observed that there is a perception that there are too many "strings attached." He stated:

I get mad at some of these townships. I have 20 townships in my county. I am trying to give them all the FEMA money I can for these floods, and a lot of the guys have told me we don't want it. The rules that they require from us to do, we don't want the money. We will do it ourselves. We will buy our own stuff. We will pay for our own contractors. We will fix our roads. We don't want FEMA's money because there are too many strings attached.

4.1.3.3. Rural communities don't benefit

One sentiment among some of the interviewees, specifically those from smaller rural jurisdictions, was that mitigation is for large jurisdictions. The perception among

some of the respondents in rural locations was that the mitigation program was designed for larger jurisdictions, and thereby precludes them from many of the potential benefits. For example, one participant stated, "... for a small community, rural town like ours...I don't think we would see any of it. I mean the money is getting tighter...the cost benefit is not going to be there for small communities."

4.2. Capability and Capacity Factors that Inhibit Mitigation Plan Development

The study explored and identified a number of capability and capacity factors that were perceived by the study participants to inhibit the development and maintenance of hazard mitigation plans in the study area. As noted earlier, capacity, in reference to disaster management planning, can be broadly defined as the amount of resources available to an organization to execute or carry out certain functions to promote the safety and well-being of a community. Capability can be defined as the actual ability of an institution or individual to perform the necessary actions. The major themes that were explored were the following: participation from key stakeholders, knowledge, staffing, and financial resources (see Table 4).

4.2.1. Lack of Participation from Partnering Agencies and Municipalities

Although some participants acknowledged that the absence of interest and enthusiasm toward the hazard mitigation plan was a result of the perceived lack of benefit as discussed in the previous section, other participants expressed frustration that key partners, such as municipalities, seemed disengaged as a whole. Because documenting participation and outreach is a requirement to achieving a FEMA-approved plan, obtaining buy-in and participation from key jurisdictional partners, political leaders, and the general public is essential. One interviewee indicated:

It's not just attending a meeting, getting them I guess, I wouldn't say participation so much as investment. You know, getting them actually invested in the plan and wanting to help and wanting to be a part of the whole process. Not just here we are having a public meeting, come look at the plan.

Another participant stated, "The only way we got participation out of these incorporated cities was we threatened them that they wouldn't be eligible for certain types of disaster assistance."

Table 4. Capability and Capacity Factors that Inhibit Mitigation Plan Development and Maintenance

Category	Subcategory
Lack of participation from partnering agencies and municipalities	Volunteerism
Lack of Knowledge & Understanding	
Staffing Limitations	Lack of time Rural employees wear many hats Lack of paid staff Lack of expertise Cumbersome approval process Staffing limitations necessitates prioritization
Financial Capacity Limitations	Expectation of grant dollars

When asked if recent disasters had elicited greater participation during the plan development process, one participant stated, "I don't think so... because I think they are

sick of it.” Another indicated that “It’s difficult to engage those communities in participating for variety of reasons. Number one, it takes a great deal of time on my part to engage them.” The lack of interest and participation was further reiterated by one participant who indicated the following:

And as far as, basically what they did for their public meeting is when the city council met, they just put it on as an agenda item and to our knowledge I don’t think, probably anybody ever showed up and they had the plan there in case the public wanted to review it and then their city council just approved the plan as is, and basically the plan was a template that we did for them.

4.2.1.1. Volunteerism

The lack of participation for some areas could be attributed to the rural characteristics and volunteer dependency of some of these communities. In some of these communities, participants expressed that in addition to fulfilling their civic duties, many key planning stakeholders have occupations. One participant noted that “all of our emergency services are volunteers. We are all volunteer fire, volunteer ambulance, we volunteer for pretty much everything.” Another emergency manager noted many of the key individuals would have to take vacation to participate in some of these planning meetings.

4.2.2. Lack of Knowledge & Understanding

Some participants suggested that the lack of motivation to participate in the hazard mitigation plan development and maintenance process was due to a lack of understanding of the mitigation program itself. One municipal leader stated:

You know I think, I don't think a lot of the municipalities, you know city government even county governments understand that many aspects of what the hazard mitigation plan can do for them. Like for example, we have some buyouts going on in the City of [omitted] where those were made possible because of the hazard mitigation plan that was in place, so if they wouldn't have had an approved plan they would have never been able to, you know, probably have their mitigation grant to use some of the money for a home acquisition.

When referring to the awareness and support of elected officials toward the mitigation plan, one emergency manager stated, "They are all very supportive of it, but they don't want to take the full responsibility, they never want to be in-charge of them....I think that is mostly it, you know it's a lack of understanding of what it is and how involving they are supposed to be." Speaking generally, another interviewee stated, "I think that's what we run into in the past, nobody really knows their role, exactly where they sit in the plan."

4.2.3. Staffing Limitations

This study provided insight into the limited staffing capacity and capability of many rural emergency managers with respect to the mitigation planning directive. The major themes that emerged were related to lack of time, limited personnel, and lack of expertise. Participants also indicated having to fulfill multiple roles as a limiting factor in developing and maintaining their hazard mitigation plan.

4.2.3.1. Lack of time

The issue of time was a reoccurring theme. When compared to other factors such as cost, the general sentiment was that time was more inhibiting than cost. The following statement exemplifies this point:

It's the time. I would say on a scale of time versus cost. You are looking at 80/20.

Eighty percent time issue, 20 percent cost issue. The cost issue is really not that big of a deal. For the cost, we can always get money from the feds.

Many participants noted how time consuming it is to do the mitigation plan. One interviewee noted, "I would have to dedicate a lot of my time just to do the plan." Another emergency manager said the reason they hire a contractor to do their plan is because it is so "time consuming." This interviewee concluded that "most of these cities don't have two months to sit down and do a mitigation plan or even assisting us in doing the plan."

Similarly, another emergency manager noted that the challenge of getting many key stakeholders to the table during the mitigation planning process is because of the "time/benefit ratio." According to this participant, "The time we put into it is not worth the benefit we get out of it." In fact, one emergency manager emphatically noted:

If I tell them I can get them \$50,000 worth of free equipment for grants for your fire department if you just show up to this meeting, I can barely get them to show up at the meeting. Because they haven't got the time.

There was also a reoccurring sentiment among the participants that all they did was plan. One participant noted, "We do so many of these plans that we are planned to death."

4.2.3.2. Rural employees wear many hats

It should be noted that part of the issue with lack of time that many participants spoke of could be attributed to the reality that many of these individuals are assuming many different positions within their respective communities. One participant observed, "Most of us are small agencies. I am a one man office. It is just me. I am the emergency manager,

911 coordinator, county coroner. You have several hats plus, I do all the truck permits for overweight trucks.” Another participant said:

I am alone here. Right now I am supposed to be 50 percent emergency manager
25 percent 911 coordinator, and 12.5 percent coroner, 12.5 percent permit officer.
But right now this FEMA stuff is consuming 95 percent of my time.

4.2.3.3. Lack of paid staff

In addition to wearing multiple hats, many participants described their position as a “one-man office”. One interviewee noted that there are only two full-time emergency managers in the state of North Dakota. The interviewee indicated that as the communities become more rural, this issue is further exacerbated. Another common sentiment was articulated by one participant, who indicated, “We contracted our hazard mitigation plan out because we didn’t have the staff to work on the requirements for that plan.”

4.2.3.4. Lack of expertise

The mitigation planning process, especially the requirement to conduct a risk assessment can be a daunting task. It also requires technical knowledge and expertise, and in most cases, technical skills, such as GIS and HAZUS. Given the perceived technical requirements of the hazard mitigation plan, many participants noted their individual lack of expertise to carry-out specific components of the plan. When asked where the hazard mitigation plan ranked in complexity versus other plans, one emergency manager stated, “Significantly more complex.” Another participant noted, “If someone wants to help me out, you think I am going to push him away? Not in your life!” Another stated, “... they ask for so much detail. So much of it is overwhelming. Most of us don’t have the expertise.” Another interviewee stated:

Another part of that is, is that we're required to just furnish them with digitized maps and you're talking to someone at our office that has no availability nor do we know how to do digitized maps. So that's a component, if we can find somebody to do it for us within the government system, it's great. But if we can't, then we have to go outside and hire someone to actually do it.

An interesting finding was, due to the perceived lack of expertise, some interviewees indicated their dependence on planning commissions and consultants to assist them in the plan development process. One county emergency manager resolved, "This time around I'm looking at hiring one of the regional planning councils to help do the work because the scope of this planning project has changed significantly and gotten larger." Another participant indicated that one of the reasons to outsource the plan is "not having to worry so much about the accounting details and the grant application and the quarterly reports and all that kind of stuff."

4.2.3.5. Cumbersome approval process

The staffing limitations and lack of expertise are probably best exemplified by the experience of participants as they described the hazard mitigation plan approval process. One interesting finding from this study was the common theme among emergency managers regarding their frustration over how picky and stringent the requirements are to get the plan approved. One emergency manager noted, "I would feel more comfortable if the state took over the plan because they know all the rules and all the guidelines." Another participant stated, "The state knows all the rules and guidelines. They are the ones that have to approve the plans anyway so they should do it." Another participant observed:

Many of us before have sent our plans in and then it comes back and then they reject a bunch of it and then we get to spend another month to redo all the rejections and then we send it back in again. By the time we get the plan done we are ready for another plan two years later. We are beating a dead horse.

The perceived challenges of getting a plan approved were described by one emergency manager when he emphatically stated:

So much of it is that they want different semantics they want. They want us to say things a certain way so it qualifies or meets you know what some guy in Washington, D.C. has concocted in his little office or cubicle to justify his job... We don't know all the buzz words. We don't know all the phrasing or phraseology...

Interestingly, minor issues, such as grammar seemed to be particularly frustrating for some participants. For example, one participant stated:

One plan we sent in it got rejected because the grammar was not right. So we took the plan and sent it to an English professor and they went through it and critiqued it and corrected it and sent it back. We sent it through and told them by the way, if you find something wrong with the plan it was screened by an English professor.

The plan went right through. A lot of this is it's kind of a game.

Another emergency manager expressed, "... the time consuming part of when it gets turned back all the time, because of just dumb things like grammar."

The data analysis suggests that many participants' primary objective, given their frustration and reservations over the mitigation plan approval process, is simply to obtain a FEMA-approved plan. One participant stated that when doing the plan, their thought process is, "What do you want us to say here" in order to ensure the plan is compliant.

Another participant indicated that his elected officials don't care. He stated, "You know they just want to make sure it's done and we're in compliance."

4.2.3.6. Staffing limitations necessitates prioritization

Some participants noted how overwhelmed they were. As previously stated, many participants felt they lacked time, assumed multiple roles within their respective jurisdictions, and did not have adequate staffing. Given these and other challenges, it was interesting to see how participants prioritized mitigation planning in relation to their other responsibilities. For example, one emergency manager described the following:

So just doing these floods three years in a row back to back. These are 100 year floods that we have had once every year for three years now. You can see where I am coming from. This has overwhelmed us. And I am so busy with my FEMA stuff. They [the state] asks me when can you do a mitigation plan? I tell them, I can get to that probably in two years. We don't have the man power."

4.2.4. Financial Capacity Limitations

An interesting finding from this study was the issue of financial capacity. Specifically, this study explored how participants perceived the financial obligations necessary to develop and maintain their hazard mitigation plans. Interestingly, many of the participants were somewhat mixed on this topic. Although the financial issue was not a major issue for many interviewees, some participants suggested it may be a bigger issue when jurisdictions are required to update those plans.

4.2.4.1. Expectation of grant dollars

When asked how participants would procure the funding to develop and maintain their hazard mitigation plans, some participants indicated the State would make those funds

available. Other participants suggested grant funding would be used. One participant noted, “It is not so much the money because we can get grants for most of it. We have told the feds don’t mandate something you can’t fund because we don’t have the money to do it. We will go without instead of having it.” Another participant said that because grant dollars have always been available, the idea that updating the mitigation plan without state or federal funds had not even crossed their minds. When participants were asked if their elected leadership would be willing to fund future mitigation plan updates without the expectation of grant dollars, many interviewees were noncommittal or uncertain.

In conclusion, this chapter described the key issues and challenges related to the development and maintenance of the hazard mitigation plan. The findings suggest multiple factors that may serve as actual and perceived obstacles to the development and adoption of a FEMA-Approved Multi-Hazard Mitigation Plan in the Red River Valley, as shown in Figure 3. Challenges associated with limited staffing and manpower capabilities were a common theme amongst interviewees. Additionally, participants expressed frustration by the lack of buy-in and support from key stakeholders throughout the planning process, which some attributed to a lack of understanding of the mitigation program. Interestingly, the potential financial limitations and concerns to actually fund the development and maintenance of the hazard mitigation plan did not seem to be a major concern for interviewees. Finally, the findings suggest that the motivation to actually develop and maintain the hazard mitigation plan may be associated with the interviewee’s understanding of the broader federal mitigation program and the perceived value this plan offers its jurisdiction relative to the amount of effort required to develop and implement a FEMA-Approved Multi-Hazard Mitigation Plan.

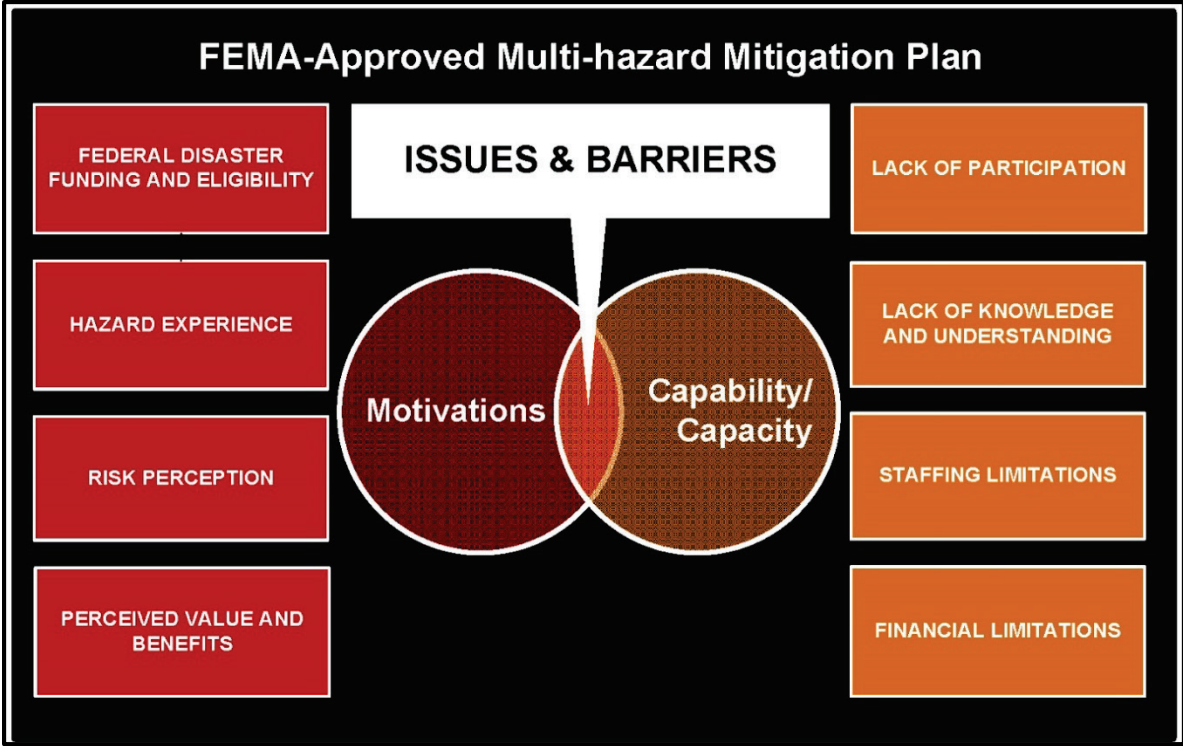


Figure 3. Issues and Barriers

CHAPTER 5. DISCUSSION

This chapter discusses findings related to participants' perception of factors that contribute to hazard mitigation planning. This chapter also offers recommendations that may improve hazard mitigation planning and remove some of the perceived challenges associated with developing and implementing the hazard mitigation plan.

5.1. Motivation and Participation

Concerning the broader issue of motivation to engage in hazard mitigation activities, the findings from this study were, for the most part, consistent with previous research on this topic. For example, Godschalk and Brower (1985) found that the lack of initiative toward mitigation activities and strategies by local governments may be due, in part, to the low priority given to disaster-related policies. Similarly, this study also observed that many participants, particularly county emergency managers, were frustrated by the lack of participation by local municipalities and their leadership, and the overall investment into the plan itself by the community. According to Schwab, Eschelebach, and Brower (2007), the lack of political support can also be a major obstacle to implementing hazard mitigation strategies. Similarly, as one participant in this study noted, while he felt the loose support from his elected officials, their leadership lacked full ownership and responsibility, which he attributed to elected officials' lack of understanding concerning their role and the purpose behind mitigation planning. Although Horney et al. (2012) suggest that inter-organizational coordination in rural areas may be stronger, participants in this study, which mostly came from rural areas, suggested the opposite may be true.

Furthermore, according to Berke and Smith (2009), "plans are often viewed as simply a means to an end – gaining access to pre- and post-disaster hazard mitigation

funding” (p. 7). As was discussed in the previous chapter, the majority of county-level participants in this study also viewed the hazard mitigation plan as a “necessary evil” and means to access federal funding. Although this study did not assess plan quality, Berke and Smith (2009) found that while mitigation plans may meet minimum national and state requirements, mitigation plans lack meaningful and strong “locally-driven mitigation actions” (p. 7). In this study, emphasis on having a “FEMA-approved plan” was repeatedly expressed by interviewees as the end goal, and also suggests that the overall objective of the hazard mitigation planning process is compliance versus developing a document that may have meaningful applications for their respective communities.

5.2. Human Capacity

An important observation from this study that is consistent with the literature is the importance of human capacity or manpower. As other studies have noted, limited staffing levels and the lack of technical expertise and experience can serve as major obstacles to developing and implementing emergency plans (Godschalk and Brower, 1985; Alesch and Petak, 2001; Boswell, Siembieda, and Topping, 2007; Tierney, 1989; Rubin and Barbee, 1985). Specifically, this study provided insight into the limited staffing capacity and capability of many rural emergency managers with respect to the mitigation planning directive. Some participants noted their individual lack of expertise to carry-out specific components of the plan, such as conducting risk assessments, utilizing GIS, and even factors related to technical writing.

While these issues are important, the findings from this study support the assertion by Berke and Smith (2009) that hazard mitigation planning should really fall under the purview of local land use planners instead of being “framed in the context of emergency

management and considered the responsibility of local emergency management officials even though they possess limited experience” (p. 8). According to Smith, Lyles, and Berke (2012), one way to improve the state-level delivery of technical assistance to local jurisdictions involves convincing land use planners and locally elected officials, among others, that their active involvement in and support of hazard mitigation planning is essential.

5.3. Financial Capacity

The concept of financial capacity, which Schwab and Brower (2008) defined as the ability to “fund or to seek funding for mitigation projects and activities” (p. 10173), was not a major obstacle to mitigation planning as was initially expected by the researcher. While Lindell and Perry (1992) are correct that many local jurisdictions and their governments, on average, may have greater financial constraints and limitations for their emergency management departments, this study found that the perceived financial resources needed to develop and maintain mitigation plans was not a major concern for participants. The perceived expectation among many participants in this study was that funding to update and maintain their plans, as it has been in the past, would be provided through state and federal funds – namely grants. This does not suggest, however, that financial capacity is not important. More importantly, what this study did not capture was the financial capacity needed to implement mitigation actions identified in participants’ respective plans.

5.4. Implementation

Although the aim of the study was to focus on hazard mitigation plan development, issues related to the implementation of mitigation actions were raised by interviewees. In

fact, the perception amongst interviewees that having an approved mitigation plan provided little benefit was largely associated with the perceived inability to apply for and be eligible to receive funding to implement their plans. Comments such as, “too many strings attached” and the suggestion that small rural jurisdictions are precluded from receiving funds reinforce an already negative perception of the mitigation program as a whole. Moreover, when jurisdictions did try to apply, they found that the same capabilities needed in developing the plan were also needed to apply and/or qualify for certain mitigation projects.

Again, because the objective by participants seemed to be compliance, implementation was not discussed as a positive outcome or objective of the mitigation planning process. In the two instances in which implementation was raised as a possible outcome of the mitigation planning process, participants connected the experience with the rejection of their proposed mitigation project, and used those experiences to devalue the hazard mitigation plan.

In addressing implementation issues specifically, Horney et al. (2012) found that rural communities had higher implementation scores when compared to urban communities in their study area. They posited that rural communities have fewer goals and policies and less inter-organizational coordination, and are therefore, more likely to implement their plans. According to Horney et al. (2012), rural plans are more project based (i.e. retrofitting, purchasing generators) and may include a “less diverse array of proposed actions than urban plans” (190). Whereas implementation may be higher per their study, their findings do not necessarily suggest that the implemented actions address the true

purpose of DMA 2000 and the mitigation directive, which is to reduce community vulnerability.

5.5. Recommendations

Currently, it could be argued that the narrow focus of DMA 2000, which seems to emphasize planning, as opposed to the more important question of implementation and integration of broader community programs and strategies, has created an environment in which jurisdictions strive to meet only the minimum federal standards. Contributing to this dilemma is the reality that hazard mitigation planning is typically viewed as an “emergency management” function even though other positions within a community may be more suited to address the hazard mitigation planning requirements. The following recommendations offer realistic considerations that may help to improve the mitigation planning process, but also move the discussion beyond just planning, and shift the focus to more important topics, such as implementation.

1. Currently, there is too much onus on emergency management. Instead, jurisdictions should shift the mitigation responsibility to community planners who already have a broader strategic vision for their respective communities and the skill sets to develop a plan.
2. Emergency management needs to continue evolving professionally. As more universities offer degrees in emergency management, more and more emergency managers will have the technical knowledge and skills to develop quality mitigation plans for their respective jurisdictions.

3. States should offer mitigation technical assistance, not only to emergency managers, but emphasize and/or require the inclusion of community planners and elected leadership.
4. Mitigation goals, strategies, and actions/projects should focus on what “can” be implemented. Expectations should be realistic and measurable.
5. For hazard mitigation as a whole, the state and Federal governments should promote quality versus quantity. They should simplify the hazard mitigation planning process and associated requirements, and place more emphasis on identifying fewer “quality” mitigation actions/projects that actually serve to promote the shared strategic vision for a community. Implementation that results in reduced vulnerability, as opposed to developing a plan that meets a federal mandate, should be the true focus.
6. Once those “quality” mitigation projects are identified, states should work closely with local jurisdictions in “successfully” implementing those actions. Continual rejection or implementing projects/actions that provide little value to the community will only reinforce the negative aspects of the program. Conversely, one meaningful project that significantly reduces hazard vulnerability and improves quality of life may garner greater motivation and participation by key stakeholders and the public.

CHAPTER 6. CONCLUSION

This chapter is organized into two sections. The first section summarizes the findings from the thesis research. The second section provides key considerations and suggestions for future research.

6.1. Summary

An important question this thesis explored was what factors, conditions, and forces contribute to and promote the development and adoption of a FEMA-Approved Multi-Hazard Mitigation Plan in the Red River Valley. The original focus of the study was to explore the role of capacity, and how it impacted local jurisdictions' level of hazard mitigation plan preparedness. While the researcher initially focused on issues related to staffing and financing, it became apparent that the scope of the study needed to be expanded to include participants' overall perspective and feelings regarding the mitigation program, and not just the hazard mitigation plan itself. This was an important discovery. Given the expected issues and challenges associated with the actual capacity and capability to develop and maintain a hazard mitigation plan, what the researcher found was the internal validation of the plan in relationship to the broader federal mitigation program. An important underlying question for many respondents seemed to be, "So if I do this plan, what does my community get in return?" Therefore, in addition to assessing a jurisdiction's capacity and capability of actually developing the plan, which was the original aim of this study, it became apparent that the issue of motivation needed to be explored further.

Overall, the study found that participants recognized the need for their communities to have a FEMA-approved hazard mitigation plan in order to qualify for post-disaster federal funding. In fact, many participants' primary objective, given their frustration and

reservations over the mitigation plan approval process, was to simply obtain a FEMA-approved plan. While this was an important motivation for many participants, some questioned if their community would ever have an incident necessitating a presidential disaster declaration or if their jurisdiction would even meet the threshold to receive one.

Additionally, many participants found the implementation of their hazard mitigation plans, particularly to take advantage of pre-disaster mitigation funds, to be very challenging. Some participants' actual and perceived inability to apply for and be eligible to receive funding for their pre-disaster mitigation projects served to validate their frustration concerning the overall mitigation experience, and devalue its importance to their jurisdiction.

While some participants acknowledged that the waning interest and enthusiasm toward the hazard mitigation plan was a result of the perceived lack of benefit as discussed in the previous chapter, other participants expressed frustration that key partners, such as municipalities, seemed disengaged as a whole. Because documenting participation and outreach is a requirement to achieving a FEMA-approved plan, obtaining buy-in and participation from key jurisdictional partners, political leaders, and the general public is essential. Some participants suggested that the lack of motivation to participate in the hazard mitigation plan development and maintenance process was due to a failure to fully understand the mitigation program itself.

The findings of this thesis also provide insight into the limited staffing capacity and capability of many rural emergency managers with respect to the mitigation planning directive. Key issues that emerged were the perceived lack of time; the reality that many rural employees assume multiple roles within their local government organization; the lack

of paid and qualified technical staff; and in some limited cases, the actual and perceived lack of funds.

6.2. Future Research and Considerations

Whereas this study focused on hazard mitigation planning, through the course of these interviews, additional considerations for research became apparent. One issue that needs further exploration is how local jurisdictions will continue funding the maintenance and update of their hazard mitigation plan. Per DMA 2000, each local jurisdiction is required to update their plan every five years. Because many of the participants interviewed for this study were not in the process of updating their plans, the issue of funding was not a major inhibiting factor. Future studies should explore the availability of grant dollars for rural jurisdictions to maintain their plans, and explore what funding sources are most likely to be utilized. Additionally, future research may want to consider whether jurisdictions will update their plan if grant funding is not available.

It was also apparent that many participants were seeking a more efficient way of developing and maintaining their local hazard mitigation plans. A common solution that was often suggested in the interviews was the idea of regionalizing mitigation planning. Though regionalization would, on the surface, seem like a way to streamline planning, participants often failed to acknowledge that the current FEMA mitigation directive still requires the same level of local participation. It is possible certain barriers related to technical writing and mapping could be alleviated at the local level if a regional mitigation plan was developed; however, it would not necessarily remove or minimize the participation of a local county or municipality. The other concern with regionalization is plan quality and the plan's ability to adequately capture the local jurisdiction's mitigation

needs. For example, the State of Texas, which had previously embraced a more regional approach, recently instructed local jurisdictions that no more than two counties could be part of a local mitigation plan due to plan quality issues.

Also, while this study briefly addressed implementation of the mitigation plan, this study includes implementation relative only to the perceived benefit of having a FEMA-approved plan. Future research should explore, more specifically, reasons why many mitigation plans fail to be implemented. In addition to interviewing participants in the study area, the researcher also interviewed state and federal officials overseeing the FEMA mitigation program. These interviews suggested that the bigger concern surrounding the mitigation directive is the lack of implementation of identified mitigation actions and projects in local jurisdiction hazard mitigation plans.

Finally, the study area was mostly rural, and as such, the perceptions and issues expressed by the interviewees regarding the hazard mitigation plan process will likely differ from other locations. Specifically, in order to better explore and understand the challenges surrounding the development of hazard mitigation plans, a comprehensive study area that includes both rural and urban settings may be beneficial.

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APPENDIX A. INTERVIEW GUIDE

INTERVIEW GUIDE – COUNTY AND MUNICIPAL EMERGENCY MANAGERS

Obtain demographic information (i.e. age, sex, experience, job titles/positions).

Could you tell me about your work (roles and responsibilities) as an emergency manager?
Probe as necessary.

How would you describe your role in the preparedness and development of Hazard Mitigation plans? Probe as necessary.

Compared to other emergency management plans, where does mitigation planning stand in regards to the complexity of the plan development and maintenance process. Probe as necessary.

HAVE PLAN

Why does your jurisdiction develop and maintain a mitigation plan? Probe as necessary.

In your view, how does the Mitigation plan serve to benefit and serve your community?

- Have you seen any direct benefits? If so, please explain.

What are some obstacles that have inhibited you in the mitigation planning process?
What do you see as the greatest obstacle to mitigation planning? Probe as necessary.
How have you addressed these challenges associated with Mitigation Planning?

Who created your plan, and do you feel mitigation planning is something your department is capable of doing by itself? Explain. Probe as necessary (e.g. which part of the plan is most important and/or challenging?).

Describe the financial support provided to help develop, maintain, and implement mitigation plans in your county or municipality? Probe as necessary (e.g. Is the funding adequate?).

Where did the funding to develop a mitigation plan come from?

In your view, what has been the level of support from your political leaders regarding mitigation planning? Probe as necessary.

In your view, what has been the level of support from your jurisdiction's county or municipal departments regarding mitigation planning? Probe as necessary.

[This question is only for Counties or areas with a multi-jurisdictional plan]. Why have some municipalities in your County chosen not to participate as part of your multi-jurisdictional plan?

HAVE NO PLAN

What has prevented your jurisdiction from having a FEMA-approved mitigation plan? Probe as necessary.

What are some obstacles that have inhibited you from developing a plan?

- What do you see as the greatest obstacle to mitigation planning?

Do you feel mitigation planning is something your department is capable of doing by itself? Explain.

Describe the financial support available to you and your department to develop, maintain, and implement mitigation plans in your county or municipality?

In your view, what has been the level of support from your political leaders regarding mitigation planning? Probe as necessary.

In your view, what has been the level of support from your jurisdiction's county or municipal departments regarding mitigation planning? Probe as necessary.

APPENDIX B. STUDY RECRUITMENT MATERIALS

December XX, 2010

Dear XXXXX,

My name is Daiko Abe. I am a graduate student in the Emergency Management program at North Dakota State University in Fargo, ND. I am writing to invite you to participate in my graduate research study. This is a study about hazard mitigation planning, and I am specifically interested in interviewing local emergency managers in the Red River Valley, which is why I am inviting you to take part in this study. As part of this study, I am interested in learning what factors, conditions, and forces contribute to and promote the development and adoption of a FEMA-Approved Multi-Hazard Mitigation Plan. I am hoping you can help me better understand how emergency managers in this area perceive and interpret the mitigation planning directorate, and also hope to discover what factors and conditions enable or prevent emergency managers from developing and adopting hazard mitigation plans.

If you agree to participate in this study and would like to schedule an interview with me, please reply to this e-mail as soon as possible, and I will contact you to set up a time and day when I can interview you to discuss your experience developing and maintaining hazard mitigation plans. These interviews can be conducted either in-person or via telephone, and will be arranged at your convenience. Only one 30-minute interview session is anticipated, with the potential for a very short follow-up session, if needed.

Most importantly, please recognize that I will make every effort to keep our discussions and any identifiable information as private as possible. However, because my study area is the Red River Valley, and my population sample will be somewhat limited, I cannot promise absolute confidentiality or anonymity. That being said, every effort will be made to ensure that any identifiable information is omitted from the research study in order to protect your identity and to prevent readers from being able to deduce the identity of the participants. With your permission, I will be using a digital audio recorder in order to ensure responses are accurately notated and analyzed. Again, every effort will be made to safeguard these recordings, and digital files will be stored on only one (1) highly secure and password protected computer. These digital recordings and their files will be promptly destroyed/deleted at the conclusion of this study.

Also, please keep in mind that your participation is completely voluntary and you may withdraw from this study at anytime. If you have any questions about the study, please e-mail or contact me at:

E-mail: daiko.abe@ndsu.edu

Phone: (208) 390-2021

Your input is vital to the success of this study. Thank you very much for your consideration and assistance.

Sincerely,

Daiko N. Abe. Graduate Student
Emergency Management Program
North Dakota State University
Dept. 2351
Fargo, ND 58108

For questions about your rights a research participant, or to report a complaint, contact the Human Research Protection Program at: ndsu.irb@ndsu.edu, or (701) 231-8908

APPENDIX C. IRB APPROVAL

NDSU

NORTH DAKOTA STATE UNIVERSITY

Institutional Review Board

*Office of the Vice President for Research, Creative Activities and Technology Transfer
NDSU Dept. 4000
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Research 1, P.O. Box 6050
Fargo, ND 58108-6050*

701.231.8995

Fax 701.231.8098

Federalwide Assurance #FWA00002439
Expires April 24, 2011

Wednesday, August 18, 2010

Dr. Dong Keun Yoon
Emergency Management
Putnam 102C

Re: IRB Certification of Human Research Project:

**“Examining Factors that Contribute to Hazared Mitigation Plan Preparedness - A
Qualitative Analysis”**
Protocol #HS11020

Co-investigator(s) and research team: **Daiko Abe**

Study site(s): **varied** Funding: **n/a**

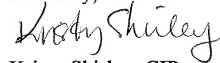
It has been determined that this human subjects research project qualifies for exempt status (category # 2) in accordance with federal regulations (Code of Federal Regulations, Title 45, Part 46, *Protection of Human Subjects*). This determination is based on the protocol form received 8/9/2010 and consent/information sheet received 8/18/2010.

Please also note the following:

- This determination of exemption expires 3 years from this date. If you wish to continue the research after 8/17/2013, the IRB must re-certify the protocol prior to this date.
- The project must be conducted as described in the approved protocol. If you wish to make changes, pre-approval is to be obtained from the IRB, unless the changes are necessary to eliminate an apparent immediate hazard to subjects. A *Protocol Amendment Request Form* is available on the IRB website.
- Prompt, written notification must be made to the IRB of any adverse events, complaints, or unanticipated problems involving risks to subjects or others related to this project.
- Any significant new findings that may affect the risks and benefits to participation will be reported in writing to the participants and the IRB.
- Research records may be subject to a random or directed audit at any time to verify compliance with IRB policies.

Thank you for complying with NDSU IRB procedures; best wishes for success with your project.

Sincerely,



Kristy Shirley, CIP
Research Compliance Administrator

NDSU is an equal opportunity institution.