



January 2014

Down By The Riverside: Recovery Efforts Of The Minot Community And School District After The Souris River Flood Of 2011

Mark Milton Vollmer

[How does access to this work benefit you? Let us know!](#)

Follow this and additional works at: <https://commons.und.edu/theses>

Recommended Citation

Vollmer, Mark Milton, "Down By The Riverside: Recovery Efforts Of The Minot Community And School District After The Souris River Flood Of 2011" (2014). *Theses and Dissertations*. 1726.
<https://commons.und.edu/theses/1726>

This Dissertation is brought to you for free and open access by the Theses, Dissertations, and Senior Projects at UND Scholarly Commons. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of UND Scholarly Commons. For more information, please contact und.common@library.und.edu.

DOWN BY THE RIVERSIDE: RECOVERY EFFORTS OF
THE MINOT COMMUNITY AND SCHOOL DISTRICT
AFTER THE SOURIS RIVER FLOOD OF 2011

by

Mark M. Vollmer

Bachelor of Science in Education, University of North Dakota, 1988
Master of Science in Educational Leadership, Tri-College University, 2001

A Dissertation

Submitted to the Graduate Faculty

of the

University of North Dakota

in partial fulfillment of the requirements

for the degree of

Doctor of Education

Grand Forks, North Dakota

August

2014

Copyright 2014 Mark M. Vollmer

This dissertation, submitted by Mark M. Vollmer in partial fulfillment of the requirements for the Degree of Doctor of Education from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

Dr. Pauline Stonehouse, Chair

Dr. Sherryl Houdek

Dr. Gary Schnellert

Dr. Marvin Erhardt

Dr. Steven LeMire

This dissertation is being submitted by the appointed advisory committee as having met all of the requirements of the School of Graduate Studies at the University of North Dakota and is hereby approved.

Wayne Swisher
Dean of the School of Graduate Studies

Date

PERMISSION

Title Down by the Riverside: Recovery Efforts of the Minot Community and
School District After the Souris River Flood of 2011

Department Educational Leadership

Degree Doctor of Education

In presenting this dissertation in partial fulfillment of the requirements for a graduate degree from the University of North Dakota, I agree that the library of this University shall make it freely available for inspection. I further agree that permission for extensive copying for scholarly purposes may be granted by the professor who supervised my dissertation work or, in her absence, by the chairperson of the department or the dean of the School of Graduate Studies. It is understood that any copying or publication or other use of this dissertation or part thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to the University of North Dakota in any scholarly use which may be made of any material in my dissertation.

Mark M. Vollmer
July 21, 2014

TABLE OF CONTENTS

LIST OF FIGURES	xi
LIST OF TABLES	xii
ACKNOWLEDGMENTS	xiii
ABSTRACT	xv
CHAPTER	
I. INTRODUCTION	1
Need for the Study	4
Purpose of the Study	5
Delimitations of the Study	5
Assumptions of the Study	6
Definition of Terms and Acronyms	6
Researcher's Background	10
Organization of the Study	10
II. LITERATURE REVIEW	11
Introduction.....	11
What is a Disaster?.....	12
What is Recovery?	15
Economic Effects of Natural Disasters	17
Sociological Effects of Natural Disaster.....	21

	Federal Involvement in a Recovery Process	27
	Hazard Mitigation	30
	Conclusion	35
III.	METHODOLOGY	36
	Research Questions	37
	Introduction	37
	Qualitative Methods	38
	Collection of Data & Data Analysis	40
	Verification	42
	Researcher Background and Subjectivity	43
	Ethical Considerations	44
	Conclusion	44
IV.	PRESENTATION OF FINDINGS	45
	Purpose of the Study	45
	Selection of Participants	46
	Observations Made During Focus Group Sessions	46
	Interpretation of Data	47
	Thematic Findings	48
	Theme #1	49
	Pre-Flood Fight, First Evacuation, and Life Between Evacuations	50
	Volunteers During Evacuation	52
	Stress and Shock Associated With Evacuation	54

Transitional Living.....	55
Summation of Findings of Theme #1	58
Theme #2	58
Damage Assessment and Rebuilding.....	60
A Flurry of Contractors.....	62
Summation of Findings of Theme #2	63
Theme #3	64
Initial Contact With FEMA	64
Damage Assessment and FEMA	65
FEMA Housing.....	67
The Role of the FEMA Worker	68
The Experience of FEMA Living	69
Summation of Findings of Theme #3	70
Theme #4	71
Initial FEMA Contact: A Need for Consultative Services.....	72
FEMA Public Assistance and the Stafford Act.....	72
Intervention by Political Officials.....	75
Hazard Mitigation – Like for Like, and Least Cost Alternatives.....	76
Summation of Findings of Theme #4	77
Theme #5	78
Assistance from Federal and State Governments	79
Other Funding Sources	80

Charitable Organizations Take the Lead.....	81
Faith Based Volunteer Assistance	83
The Inspiration of Hope Village	84
Summation of Findings of Theme #5	86
Theme #6	86
The Cause of Flooding	87
The City Response.....	88
The City Response to Recovery	91
Planning for System-Wide River Management.....	93
Summation of Findings of Theme #6.....	93
Theme #7	94
Communication During Pre-Flood and Evacuation Periods.....	95
Communication and River Management	96
Summation of Findings of Theme #7	99
Theme #8	100
Emotional Effects of Flooding.....	100
Mental Health Interventions	105
Social Effects of Flooding	106
Personal Loss	106
A Disconnect Between Valley Dwellers and Hill Dwellers	108
Financial Effects of the Flood.....	109
Summation of Findings of Theme #8	112

	Conclusion	112
V.	EMERGENT THEORY AND DETERMINATION OF A CENTRAL PHENOMENON	113
	Purpose of Study	113
	Emergent Theory	115
	Grounded Theory	117
	Selective Coding	117
	Causal Conditions	118
	Contextual Conditions	123
	Intervening Conditions.....	129
	Strategies.....	134
	Consequences.....	136
	Conclusion	138
VI.	CONCLUSIONS, DISCUSSION, AND RECOMMENDATIONS.....	139
	Conclusions and Summary of Findings	139
	Research Question 1	140
	Research Question 2	143
	Research Question 3	148
	Emerging Theory on Recovery From a Natural Disaster	153
	Limitations of Study	155
	Recommendations for Further Study	156
	Recommendation 1: Critical Incident Command Structure.....	158

Recommendation 2: Clear and Concise Communication.....	160
Recommendation 3: Identification of Vulnerable Populations.....	162
Recommendation 4: Federal Response to Disaster.....	163
Recommendation 5: Collaboration	166
Recommendation 6: Leadership	169
Implications for a School District Recovering From a Natural Disaster	174
Final Thoughts	175
APPENDICES	177
A. Flood Crests at Broadway Bridge, Minot, North Dakota	178
B. Consent to Participate	179
C. General Questions for Focus Groups.....	183
D. Permission to Conduct Study in Minot School District #1.....	186
E. Poster Soliciting Volunteers for the Study.....	187
F. Codes and Descriptive Examples.....	188
REFERENCES	211

LIST OF FIGURES

Figure	Page
1. Grounded Theory Diagram	116
2. Recovery for Well Connected Residents	136
3. Recovery for Vulnerable Residents	137

LIST OF TABLES

Table	Page
1. Strategies for Recovery.....	135
2. Recommendations for Further Study.....	157

ACKNOWLEDGMENTS

When our doctoral cohort first met in Fargo, North Dakota, in August of 2010, Dr. Sherryl Houdek informed us that the process of earning a doctoral degree is a journey. It has been an incredible journey, filled with challenges, excitement, the fostering of new friendships, the opportunity to share wonderful experiences, and to learn from fellow educators.

A special thank you goes out to the University of North Dakota Educational Leadership Department, who kept our 16-hour weekend work sessions lively and pertinent. I would like to offer a special thank you to my advisor, Dr. Pauline Stonehouse, for her caring, professional nature and her constant encouragement.

I appreciate the assistance provided by my committee, Dr. Marv Erhardt, Dr. Sherryl Houdek, Dr. Steven LeMire, and Dr. Gary Schnellert. I am grateful for their advice and constructive criticism, which I believe enhanced the quality of this study.

Words cannot express my gratitude to the residents of the Souris River Valley who volunteered their time to be a focus group participant or to be interviewed. Their willingness to share this powerful and emotional story is appreciated. I truly believe their experiences may help others in the wake of a natural disaster.

I am grateful for the assistance provided by my co-workers, Lynn Jensen and Jody Kraft. Their steadfast support helped keep me on track through this incredible journey. I

also appreciate the efforts of my editor, Susan Lund, who accepted the challenge of editing this work, and provided excellent advice during the editing process.

I am also very grateful for my family, who supported me through this journey. To my grandfather, Arthur B. Vollmer, who served on the Willow City School Board when a disaster destroyed the school in 1936, I say thank you for serving as a role model to your children and grandchildren. To my parents, who supported me during my undergraduate years and promoted the value of education, I offer my most sincere appreciation. To my sons, Logan and Levi, who took on extra responsibilities at the ranch while I attended classes, conducted this research, and wrote the dissertation, I say thank you, and I promise to take a few extra shifts during calving season next year. To my bonus-daughters, Shelby and Darby, who cheerfully offered their support and a few laughs along the way, I say thank you. To my love and my rock, Liz – I don't think there are any words that can express how grateful I am that you are in my life, but please know . . . I could not have done this without your love and support. I am truly blessed.

ABSTRACT

The purpose of this case study was to evaluate the flood recovery process for the Minot Public School District after the devastating Souris River Flood of 2011, and to provide a definitive study of the recovery of a school district after a natural disaster. This study identified the school community's processes involved with financial, emotional, and social aspects of recovery, and identified key players in the recovery process.

The research consisted of nine focus groups; three groups of teachers, three groups of parents, and three groups of community members. Formal interviews were also conducted with community leaders and subject matter experts identified by focus group data. Questions for formal interviews were developed, in part, with input provided during focus group discussions.

The study utilized a qualitative approach to identify (a) the factors of recovery; (b) the key players in the recovery process; and (c) an evaluation of the success of recovery as a whole, as noted by individuals directly affected by the flood. Eight themes developed during analysis of this research: (a) the pre-flood and evacuation period was a traumatic experience and was the first crisis faced by Minot residents directly affected by the flood; (b) the assessment and recovery period was a traumatic experience and was the second crisis faced by Minot residents who were directly affected by the flood; (c) the FEMA Individual Assistance program, while expeditious in nature, received mixed reviews by Minot residents who were directly affected by the flood; (d) the FEMA Public

Assistance program was a contentious process subject to intervention by political leaders before consensus could be reached and recovery could begin; (e) crisis management is a collaborative process involving federal, state, and local government, as well as volunteer services from charitable organizations; (f) long-term effects of a natural disaster span far beyond the physical recovery of homes, businesses, and school buildings. The Minot Public School District community was drastically changed as a result of the Souris River Flood of 2011; (g) effective communication has been lacking during all phases of crisis and recovery, and has created a layer of confusion and mistrust throughout the Souris River Valley; and (h) the Souris River Flood of 2011 negatively affected survivors; negative effects have included social, emotional, and financial hardships. The study indicated that pre-flood social, emotional and economic stability, combined with the ability to self-advocate and self-perform during reconstruction were key components in the recovery process.

For the purpose of this study, key stakeholders included: teachers, parents, students, school administrators, school board members, community members, community leaders, and government officials.

(KEY WORDS: Minot, North Dakota, Natural Disaster, School, FEMA)

CHAPTER I

INTRODUCTION

The Souris River has flooded on numerous occasions since the inception of Minot, North Dakota, in the late 1800s (ND Department of Emergency Services, 2011). The flood of 2011 surpassed all previous records and officially marked the seventh such occasion since 1881 that flood waters inundated the Souris Valley (Obenchain, 2011, p. B1). On many other occasions, the river was dangerously close to flooding the valley, but flood mitigation efforts were successful, and the city was spared from extensive damage.

In the years of 1904, 1916, 1923, 1925, 1927, 1969, and 2011, the Souris River swamped a large part of residential Minot, North Dakota, interfering with public services and requiring large-scale evacuation (Appendix A). Minot Public Schools received damage to several buildings during these years. The most notable was the damage sustained to Erik Ramstad Middle School in 1969, when the building was flooded with 38 inches of water that remained in the structure for 38 days (Minot Public School District, 1969).

Like other communities located along a major river, Minot has monitored the Souris River system closely. For many years, the National Weather Service (NWS) in collaboration with the United States Army Corps of Engineers (USACE) has provided a flood forecast for the region each year. The origins of the Souris River Flood of 2011

began in December of 2010. In a flood forecast, the Saskatchewan Watershed Authority announced that:

Above-normal precipitation during this past summer and fall has left much of the eastern portion of Saskatchewan saturated. Rivers and creeks are flowing at rates well above normal for this time of year and some streams, which are normally dry in the fall, are flowing. It is anticipated that these flows will continue throughout the winter. (Saskatchewan Watershed Authority, 2010, p. 14)

Heavy winter snowfall, coupled with wide spread spring rains, heightened concerns of flooding and many flood forecasts were reported. On May 28, 2011, the Minot Daily News reported “the entire Souris River reservoir system remains near capacity and vulnerable to significant rainfall” (Obenchain, 2011, p. B1). In an effort to describe the city’s current flood protection of levies, Roland Hamborg, Regional Direction of the Corps of Engineers reported, “It’s an extraordinary event that is getting beyond the flood they [the levies] were designed for” (Obenchain, 2011, p. B1).

Heavy rains over the Memorial Day weekend of 2011 and full reservoirs along the Souris River presented a certainty of flooding to residents along the river basin. On May 31, 2011, Colonel Michael Price of the United States Army Corps of Engineers stated, “There will be flooding in the city of Minot” (Obenchain, 2011, p. B1). On June 1, 2011, Minot Mayor Curt Zimbleman ordered the evacuation of 10,000 residents who resided in the Souris River Valley (ND Department of Emergency Services, 2011).

On May 30, 2011, Minot Public School Superintendent David Looyen ordered the evacuation of all school buildings in the evacuation zone (Vollmer, 2011). The

district removed a large portion of the contents of Erik Ramstad Middle School, Perkett Elementary, Sunnyside Elementary, McKinley Elementary, Central Campus PLUS, the Adult Learning Center, and Head Start from school buildings. In order to maximize the time available, utility crews moved first-floor inventory to the second floor at Longfellow Elementary, Roosevelt Elementary, and Lincoln Elementary. A seven-foot earthen levy was built around Erik Ramstad Middle School and a five-foot earthen levy was built around Lincoln Elementary. Sewer lines were capped and manhole covers were welded and secured with several tons of sandbags. This work continued for nearly a week (Vollmer, 2011).

On June 6, 2011, Mayor Zimbleman allowed several residents to return to their homes (City of Minot, 2012). By June 10, 2011, it appeared the river had been contained with no flooding in the valley. The United States Army Corps of Engineers ordered the removal of the earthen levy at Lincoln Elementary. The district did not move items back into school buildings at this time (Vollmer, 2011).

However, a major rain event in Saskatchewan on June 18, 2011, forced city officials to order another evacuation. Flood projections were now expected to pass the 1969 flood by at least 7 feet. At a press conference on Monday, June 20, 2011, Mayor Curt Zimbleman stated, "It's hard to realize, but we are going to become a lake" (Obenchain, 2011, p. B1). The message at this press conference was consistent with the statement made by the mayor; flooding in the Souris River Valley was imminent.

Minot Public Schools responded by securing local construction companies to expand the earthen levy at Erik Ramstad Middle School to 14 feet. On Tuesday, June 21, 2012, Minot's Public Works Director, Alan Walter, ordered that school structures in the

inundation zone were to be considered as crucial infrastructure (Vollmer, 2011). This allowed the district to be assisted by the USACE and the North Dakota National Guard, who built a 3 foot Hesco barrier system around Longfellow Elementary and worked with local contractors to secure Sunnyside Elementary (Vollmer, 2011).

Attempts to bring clay to the Lincoln Elementary site proved futile. Poor bridge conditions and other access issues forced the district to leave the structure unprotected. Construction crews were secured to protect Perkett Elementary, but clay was unavailable (Vollmer, 2011). On June 21, 2011, incoming Minot Public School District Superintendent, Mark Vollmer, ordered construction crews to excavate the playground area around Perkett Elementary in order to build a levy to protect the school. Crews worked throughout the night, completing the project shortly before noon on June 22, 2011 (Vollmer, 2011).

The river exceeded its limits and poured over its banks at 12:57:20 PM on June 22, 2011 (City of Minot, 2012). The Souris Valley was inundated with water for 30 days. The Minot Public School System owned nine buildings that received heavy damage as a result of the flood. The total financial loss to the district has surpassed \$76,000,000.

Need for the Study

The Minot Public School District received extensive damage as a result of the Souris River Flood of 2011. Although other school districts have experienced extensive loss as the result of a natural disaster, limited research has been conducted to identify issues of loss and recovery for public schools.

The Souris River Flood of 2011, like many other natural disasters, caused extreme damage to district infrastructure and upset lives. The magnitude of this event was noted

by the Federal Emergency Management Agency (FEMA), and has been recognized as the third largest temporary housing relocation in FEMA history (Hintz, 2013). All in all, 4,152 structures, 522 business, and 7 parks located in the city of Minot were damaged in this event. Minot Public School District #1 owned nine buildings affected by the Souris River Flood of 2011.

Recovery from a catastrophic event is daunting. While infrastructure loss is concrete and relatively easy to determine, emotional recovery is difficult to assess. Limited research has been conducted to identify the full scope and breadth of recovery. In general terms, the question begs to be asked: What does recovery look like, and furthermore, what constitutes a complete recovery from any type of natural disaster?

Purpose of the Study

The purpose of the study was to evaluate what constitutes full recovery from a natural disaster. The researcher examined victim perceptions of the Souris River Flood of 2011, and has attempted to address all facets of recovery.

Research questions included:

1. What social, emotional, and economic processes are associated with school community recovery from a natural disaster?
2. What demonstrates that a school community's recovery is complete?
3. Who are key players in a recovery process of a school community?

Delimitations of the Study

The study had the following delimitations:

1. The case study involves the Minot Public School District and community.

2. Some participants may be strongly affected by the Souris River Flood of 2011 and may be unwilling to share their experiences or unable to express their feelings.
3. The number of interviews, surveys, and focus groups were limited, and represented a purposeful sample of flood victims.

Assumptions of the Study

The assumptions in this study included:

1. Participants were affected, in some way, by the Souris River Flood of 2011.
2. Participants that participated in interviews, surveys, and focus groups responded honestly to questions.
3. Participants served as a purposeful sample of individuals affected by the Souris River Flood of 2011.

Definition of Terms and Acronyms

The following terms were used in this study. The definition of terms is intended to provide clarity and specificity regarding use of terminology in this study. Terms included:

(CFS) Cubic Feet per Second: Cubic feet per second (CFS) is a common measurement for measuring the flow of water in channels. The USACE and the NWS closely monitor cubic feet of water flowing per second at the Minot Broadway Bridge and the 4NW Bridge, as well as several locations upstream and downstream of the city of Minot (Obenchain, 2011, p. B1).

(FEMA) Federal Emergency Management Agency: The Federal Emergency Management Agency (FEMA) is an agency of the United States Department of

Homeland Security, initially created by Presidential Reorganization Plan No. 3 of 1978 and implemented by two Executive Orders on April 1, 1979. The primary purpose of FEMA is to coordinate responses to a disaster that has occurred in the United States and that overwhelms resources of local and state authorities. The governor of a state in which a disaster occurs must declare a state of emergency and formally submit a request to the President of the United States that FEMA and the federal government respond to the disaster (FEMA, 2007a).

International Souris River Board: The International Souris River Board is made up of residents of the United States and Canada who reside along the Souris River. The board meets on a regular basis to discuss river management in both nations (International Souris River Board of the International Joint Commission, 2009).

Minot Public School District: A school district located in north central North Dakota, which hosts an inventory of 19 school buildings serving approximately 7,500 students and 1,400 employees (Vollmer, 2011).

(NDDDES) North Dakota Department of Emergency Services: The North Dakota Department of Emergency Services (NDDDES) was founded by the 59th Legislative Assembly of the State of North Dakota. This agency has worked directly with FEMA, and serves as a state liaison for FEMA and other disaster-based federal and private organizations (ND Department of Emergency Services, 2011).

North Dakota Game and Fish Department: The North Dakota Game and Fish Department, founded in 1909, is a state agency designed to manage the state's natural resources. The North Dakota Game and Fish Department maintains control of the Lake Darling Dam along the Souris River Valley (Wilson, 2005).

(NWS) National Weather Service: “The National Weather Service (NWS), once known as the Weather Bureau, is one of the six scientific agencies that make up the National Oceanic and Atmospheric Administration (NOAA) of the United States government” (“National Weather Service,” 2014, para. 4). The NWS closely monitors weather conditions along the Souris River Valley during potential flood events (National Weather Service, n.d.).

(HMGP) Hazard Mitigation: The Hazard Mitigation Grant Program (HMGP) provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during immediate recovery from a disaster. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (FEMA, 2011).

(PTSD) Post-Traumatic Stress Disorder: Post Traumatic Street Disorder (PTSD) is a severe anxiety disorder that can develop after exposure to an event that results in psychological trauma. This event may involve the threat of death to oneself or to someone else, or to one's own or someone else's physical, sexual, or psychological integrity, overwhelming the individual's ability to cope. As an effect of psychological trauma, PTSD is less frequent and more enduring than the more commonly seen acute stress response. Diagnostic symptoms for PTSD include re-experiencing the original trauma(s) through flashbacks or nightmares, avoidance of stimuli associated with the trauma, and increased arousal—such as difficulty falling or staying asleep, anger, and hyper-vigilance. Formal diagnostic criteria (both DSM-IV-TR and ICD-10) require that

the symptoms last more than one month and cause significant impairment in social, occupational, or other important areas of functioning (Breslau & Alvarado, 2007).

Stafford Act: The Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) is a United States federal law designed to bring an orderly and systematic means of federal natural disaster assistance to state and local governments to help them carry out their responsibilities in aiding citizens. This act established the Presidential Disaster Declaration system, which triggers federal financial and resource assistance to eligible states and local authorities through FEMA. Through the Stafford Act, FEMA is the designated coordinating agency during federally declared disasters (FEMA, 2007b).

Saskatchewan Watershed Authority: The Saskatchewan Watershed Authority leads management of Saskatchewan's water resources to ensure safe drinking water resources and reliable water supplies for economic, environment, and social benefits for the people of Saskatchewan. The Saskatchewan Watershed Authority manages the Rafferty, Alameda, and Boundary Dams that provide flood control for the Souris Valley (Saskatchewan Watershed Authority, 2010).

(USACE) United States Army Corps of Engineers: The United States Army Corps of Engineers (USACE) is a U.S. federal agency under the Department of Defense and a major army command made up of around 37,000 civilian and military personnel. USACE is involved in a wide range of public works throughout the world. The Corps of Engineers provides outdoor recreation facilities that are open to the public, and provides 24% of U.S. hydropower capacity (US Army Corps of Engineers, n.d.a, n.d.b).

Researcher's Background

The researcher has been a professional educator since 1990, having worked as a teacher and administrator in several North Dakota School districts. The researcher served as a high school principal for 9 years at Minot High School – Magic City Campus before starting his position as Superintendent of Minot Public School District #1 on July 1, 2011.

After being hired as Superintendent of Minot Public School District #1, the researcher worked closely with outgoing superintendent, Dr. David Looyesen. The researcher was involved in mitigation efforts before the flooding in 2011 and before his official start date as superintendent. Since the flood, the researcher has worked closely with local, state, and federal officials during the flood event and in subsequent recovery efforts.

Organization of the Study

This dissertation study is organized into six chapters. Chapter I includes an introduction, need for the study, experience of the researcher, purpose of the study, delimitations of the study, assumptions of the study, and definitions of terms and acronyms. Chapter II provides a literature review. Chapter III includes a description of the methodology utilized in the study, including the collection and analysis of data. Chapter IV includes a presentation of the findings of the study. Chapter V includes the summation of research and central phenomena of the study. Chapter VI includes a summary and conclusions from the study, as well as recommendations for action.

CHAPTER II

LITERATURE REVIEW

Introduction

The Federal Emergency Management Agency (FEMA), responds to several natural disasters each year. The agency also works closely with affected communities to rebuild and recover community infrastructure. Natural disasters vary in devastation and intensity. These variances have direct effects on the level of federal response. The literature review for this dissertation emphasized:

- the definition of natural disaster,
- the economic effects of disaster,
- the sociological effects of disaster,
- the role of the federal government in the recovery process, and
- the importance of hazard mitigation as a component of recovery.

The definition of disaster is examined in the first section of this literature review. This section describes how disaster recovery is not limited to the reconstruction of buildings and structures; the process must include sociological aspects of recovery as well. The financial loss associated with disaster cannot be ignored and is examined in a separate section of this literature review.

The next section of the literature review addresses the sociological effects of disaster and begins with an overview of psychological studies linked to disaster

survivors. Current literature in regard to the diagnosis and treatment of survivors is examined.

Federal involvement plays an important role in the recovery process and is examined in the next section of the literature review. Hazard mitigation implementation is a requirement set forth by the federal government as a critical component in a disaster recovery process. Hazard mitigation requirements and procedures are explored in the final section of the literature review. A conclusion is provided at the end of this chapter.

What is a Disaster?

Disaster is defined as “An occurrence causing widespread destruction and distress; a catastrophe” (“Disaster,” 2007, p. 402). The consideration of any event as *catastrophic* requires close evaluation based on sound theory and methodology (Bunge, 1998). This evaluation must consider more than a study of property loss. The evaluation process must include a study of sociological impact, including emotional loss, redistribution of wealth in the community, and the specific effects on socio-economic, race, and gender groups within the community (Quarantelli, 2005).

The challenge of defining a natural disaster is exacerbated by a plethora of research and study. Lowell Carr (1932) was the first researcher to study disasters through a lens of cultural change. This concept of studying disaster together with cultural change was embraced by Kroll-Smith and Gunter (1998), who suggested the definition of disaster should be designed, in part, by those who experience it. Others (Britton, 1986; Buckle, 2005; Shaluf, Ahmadum, and Mustapha, 2003) believed the definition of disaster is best left to federal agencies mandated to respond to disasters.

The United States government, through the Robert T. Stafford Disaster Relief and Emergency Assistance Act (2007), refers to a disaster as either an emergency or a major disaster. According to the Stafford Act, a *major disaster* is:

Any natural catastrophe (including any hurricane, tornado, storm, high water, winddriven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or, regardless of cause, any fire, flood, or explosion, in any part of the United States, which in the determination of the President causes damage of sufficient severity and magnitude to warrant major disaster assistance under this Act to supplement the efforts and available resources of States, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby. (FEMA, 2007b, p. 2)

This definition addresses economic and sociological impacts, including loss and suffering.

Collateral damage is not only measured in dollars. The emotional toll brought forth by a major disaster is significant and cannot be ignored. These emotional concerns can manifest through issues of mental illness and suicidality (Alexander, 2004; Carver & Scheier, 1994; Drescher & Foy, 2010; Kessler et al., 2008; Madrid & Grant, 2008; Shear, Frank, Houck, & Reynolds, 2005), marital problems (Davis & Ender, 1999), manifestation of complicated grief and bereavement (Drescher & Foy, 2010; Fullerton, Ursano, Kao, & Bharitya, 1999; Njarian et al., 2001; and Weissbecker, 2009). Children are also prone to severe anxiety, and stifling of normal development may occur in children after a major disaster (Bradley, 2007). These issues resonate throughout a

community and can have a negative effect on public organizations and social structures. Schools are not exempt from the adverse effects of a major disaster (Schwab, 2010).

Research has shown that disaster cannot be limited to the description of a particular event. A recovery process is an extension of an actual disaster (Drescher & Foy, 2010; Fullerton et al., 1999; Najarian, Goenjian, Pelcovitz, Mandel, & Najarian, 2001). Recovery is affected by a variety of factors, including long-term recovery that is “recognized across social time as a radical change” (Rosenthal, 1998, p. 226). This recovery may include changes in community demographics and create “disruptions in cultural expectations” (Horlick-Jones, 1995, p. 311).

Previous disaster research concluded that institutions cannot always safeguard against the perils of natural disasters (Smith, 2011). This uncertainty can create a sense of social vulnerability within a community (Oliver-Smith, 1998) and can foster a social aura that leaves a community “analytically frozen at one point in time” (Quarantelli, 2005, p. 340). Sociological ideology must be considered in a recovery process. Smith (2011) noted that residents may become frustrated when they realize rules and procedures change after a disaster. This frustration can lead to anger, spite, and a sense of helplessness (Carver & Scheier, 1994).

Disaster is not easy to define. While all disasters share certain common dimensions, the long-term effect or response may be very different (Quarantelli, 1998). Political subdivisions tend to first concentrate on economic issues of a disaster, leaving social issues to medical personnel within a community (Quarantelli, 1988). Alexander (2004) noted that disaster research is not limited to specific study, and therefore, “none of us should presume to have all the answers” (p. 97). Disaster and subsequent recovery are

best handled by communities who work collaboratively in order to seek acceptable solutions to complex issues (U. S. Department of Education, 2006; Zevenbergen, Veerbeek, Gersonies, & Van Herk, 2008).

So, how can we best define the meaning of a natural disaster? The answer rests in a heuristic approach to understanding disaster and the cumulative effect a disaster has on a stricken community (Becker, 1976; Godschalk, Rose, Mittler, Porter, & Taylor West, 2009; Lindell & Prater, 2003; Olshansky & Johnson, 2010). A community that has experienced a natural disaster must initiate and participate in rational discussions in regard to the event, study ramifications brought forth by the disaster, and work collaboratively to develop a recovery plan.

What is Recovery?

In the aftermath of a natural disaster, community agencies are left to develop short-term and long-term plans for recovery. While some might think that recovery is easy to define, research shows that disaster survivors may have very different ideas as to what recovery should look like (Baird, 2010). Anderson (2008) found the definition of recovery is dependent on the view of the evaluator, stating that for some, recovery is a return to pre-disaster conditions. For others, it is defined as community revitalization that involves hazard mitigation and risk reduction. Most researchers believe that true recovery is reached when the community is returned to a condition that is as good as, or better than, before (Baird, 2010).

FEMA (2009) provided recommendations for political subdivisions intending to develop emergency plans in a report called *Developing and Maintaining State*,

Territorial, Tribal, and Local Government Emergency Plans. Recommendations included:

- the development, coordination, and execution of service- and site-restoration plans;
- the reconstitution of government operations and services;
- individual, private-sector, nongovernmental, and public assistance programs to provide housing and to promote restoration;
- long-term care and treatment of affected persons;
- additional measures for social, political, environmental, and economic restoration;
- evaluation of the incident to identify lessons learned;
- postincident reporting; and
- development of initiatives to mitigate the effects of future incidents.

(p. 6)

While FEMA recognizes the need to address social and political restoration, this issue is not at the forefront of recovery discussions. Therefore, leaders of recovery efforts must recognize that recovery is a complicated process that involves economic, social, and emotional aspects for individuals and governmental sub-divisions.

Waugh (2000) found that recovery is divided into short-term recovery and long-term recovery. Short-term recovery involves an emergency period immediately following a disaster, which entails the restoration of power, critical infrastructure, health and safety treatment, and clearance of debris (Department of Homeland Security, 2003;

Lindell, Prater, & Perry, 2006). Long-term recovery involves a long-range plan for developing a community that is resilient from future disasters (FEMA, 2002; FEMA, 2007a; FEMA, 2011; Godschalk et al., 2009; United States Government Accountability Office, 2007).

While recovery is essentially a local issue (Jennison, 2008; Olshansky & Johnson, 2010; Pielke, 1999), the role of the federal government in recovery remains a paramount consideration. Federal involvement can be seen in short-term and long-term recovery efforts alike (Burby, 2006). The role of the federal government in regard to recovery and hazard mitigation will be addressed later in this chapter.

Recovery can vary by individual, family, business, or community (Lindell & Prater, 2003). This individual sense of recovery may be affected by a variety of issues such as:

- financial status before the disaster,
- property loss due to the disaster, and
- the effects of hazard mitigation on personal property and loss of financial resources (Peacock & Girard, 1997).

Recovery is difficult to define, and therefore, recovery time is also difficult to assess. Kates and Pijawka (1977) suggested that normal recovery from a disaster will take between 2 and 8 years.

Economic Effects of Natural Disaster

A natural disaster can create extensive disruption to victims. This disruption is witnessed as citizens await financial compensation, infrastructure repair, and determinations in regard to long-range planning (Olshansky & Chang, 2009). Physical

recovery can affect the lives of citizens for years, while the social-emotional toll created by an event can last for decades and slow a recovery process (Johannesson, Lundin, Fröjd, Hultman, & Michel, 2011).

Mileti (1999) discovered a drastic increase in the number of natural disasters occurring in the second half of the 20th century compared to the first half of the century. Since 1999, we have seen devastating earthquakes in Turkey, Taiwan, India, Iran, and Kashmir, that have resulted in a cumulative death toll that exceeds 126,000 (Olshansky & Chang, 2009) and a tsunami in 2004 that claimed the lives of over 283,000 people in 10 countries (U. S. Geological Survey, 2004).

Hurricane Katrina hit the United States mainland in August of 2005 and remains the most devastating disaster that has occurred in the history of the United States, resulting in the displacement of 770,000 people in the southeastern quadrant of the country (Townsend, 2006). Researchers believe that global warming and rising sea levels will prompt even more horrific storms and disasters in upcoming years (Olshansky & Chang, 2009).

The effect of disaster extends beyond actual crisis and emergency response. Long-term results of a natural disaster may take years to correct. In New Orleans, recovery was inconsistent and uneven among precincts (Olshansky, Johnson, & Topping, 2006). French, Lee, and Anderson (2010) concurred with this finding, noting negative impact was more serious in poorer and smaller communities. Gunderson (2010) discovered “the speed, severity and complexity of natural disasters continually challenge the ability to generate an appropriate response” (p. 1). Therefore, some individuals are

not as prepared as others, or may not be able to prepare to deal with the devastation of a natural disaster.

Resilience is key to overcoming negative effects of a natural disaster. Resilience is a process of creating community leadership structures to assist in recovery from a current disaster and to mitigate the danger of future disasters (Burby, 2006). According to Vale and Campanella (cited in Berke & Campanella, 2006), resiliency is defined as:

The ability to survive future natural disasters with minimum loss of life and property, as well as the ability to create a greater sense of place among residents; a stronger, more diverse economy; and a more economically integrated and diverse population. (p. 193)

Post-disaster recovery is similar in many ways to post-war recovery (van Horen, 2002; Yarwood, 1999). Whether as a result of war or disaster, recovery efforts force a community to improve and revitalize infrastructure, as well as provide for long-range planning for future expansion (Blanco & Alberti, 2009). Resiliency is an important component of recovery from a natural disaster.

Very little research has been conducted in the field of natural disasters. Several researchers have provided qualitative studies in regard to the immediate effects of specific disasters, including family and household recovery (Bolin & Stanford, 1998; Mileti, 1999; Quarantelli, 1999) and business loss (Alesch, Arendt, & Holly, 2009; Chang & Falit-Baiamonte, 2002; Webb, Tierney, & Dahlhamer, 2002). While these studies are somewhat incomplete, they show a common thread; homeowners and business owners with the least number of assets and resources struggle the most until federal assistance arrives (Olshansky & Chang, 2009).

Despite efforts to provide quantitative and qualitative research in regard to economic recovery after a natural disaster, no consensus has been reached on defining what economic recovery is, or what it should look like (Olshansky & Chang, 2009). Comerio (1998) found that recovery means more than providing temporary housing during a post-disaster period. Other researchers have concluded that recovery involves extensive planning, from responses to an initial emergency, to long-term planning to develop appropriate infrastructure to supporting a recovering community (Gordon, Richardson, & Davis, 1998; Webb, Tierney, & Dahlhammer, 2000). Community infrastructure, such as utilities and transportation systems, plays a vital role in immediate and long-range recovery. The infrastructure components, while independent of each other, can fail and lead to additional failures of related systems (McDaniels et al., 2007). School districts are not exempt from this concept (United States Government Accountability Office, 2007).

Economic effects of a natural disaster can be devastating. The extent of damage can depend on a variety of circumstances such as:

1. the location of the disaster, i.e., rural or urban;
2. the duration of the disaster period; and
3. pre-planning and hazard mitigation programs (Blanco & Alberti, 2009).

The failure to plan accordingly can result in social vulnerability within a community (Kreps & Drabek, 1996). Quarantelli (1988) found that a key component in disaster preparedness rests with the ability to recognize the difference between a disaster and a minor emergency. Many researchers (Jennison, 2008; Kick, Fraser, Fulkerson, McKinney, & DeVries, 2011; Meyer, Henry, Wright, & Palmer, 2010; Quarantelli, 1988)

concur that the ability to plan and provide an appropriate response to a natural disaster is a key component in limiting economic loss. Financial loss, while undoubtedly devastating, is only one negative aspect of a natural disaster. Social and emotional upheaval may also be present among victims (Madrid & Grant, 2008; Norris et al., 2002; Weissbecker, 2009).

Sociological Effects of Natural Disaster

Economic loss is a major component of a natural disaster. Economic loss can also exacerbate social and emotional problems (Jones, Immel, Moore, & Hadder, 2008; Kristensen, Weisaeth, & Heir, 2009; Weissbecker, 2009; Whaley, 2009). Left untreated, these emotional problems can manifest over a period of time and may result in serious mental conditions such as Complicated Grief (CG), Post-Traumatic Stress Disorder (PTSD), and other psychological problems (Drescher & Foy, 2010; Fullerton et al., 1999; North et al., 2008; Regehr & Sussman, 2004).

Many people who experience a natural disaster are traumatized (Whaley, 2009). While federal, state, and local organizations are quick to provide temporary shelter and food following a disaster, little attention is paid to mental health issues (Jones et al., 2008). These issues can be aggravated by previous tendencies toward depression and mental illness (Drescher & Foy, 2010; Whaley, 2009). Without appropriate treatment, mental health issues can worsen and result in marital problems, extreme depression, and suicidal ideation (Fullerton et al., 1999; Kessler et al., 2008; Shear, 2006).

Researchers have gathered very little longitudinal data in regard to the long-term psychological effects of a natural disaster (Kristensen et al., 2009). This data may be lacking for a variety of reasons. Madrid and Grant (2008) found that federal and local

relief policies “tend to underemphasize mental health preparedness and interventions relative to physical health” (p. 90). In many instances, victims may not seek counseling due to financial constraints or unavailability of trained psychiatric professionals immediately following the disaster (North et al., 2008).

Grief is one symptom often noted in the aftermath of a natural disaster. Parkes (1996) found that while grief is considered to be a process rather than a mental disorder, extensive or Complicated Grief can manifest to the status of mental illness. Parkes stated:

The assertion that, because grief will be experienced by most of us sooner or later, it cannot be said to be an illness is not valid. If a bruise or broken arm, the consequence of physical injury is in the realm of pathology, why not grief, the consequence of psychological trauma. (p. 5)

Regehr and Sussman (2004) helped define the difference between normal grief and Complicated Grief, expressing that normal grief does not interfere with social, emotional, and physical functioning for extended periods of time. Complicated Grief may mirror symptoms of depression and may require psychiatric assistance (Fullerton et al., 1999; Jones et al., 2008; Kessler et al., 2008; Najarian et al., 2001).

Availability of mental healthcare providers is often compromised after a natural disaster. Jones et al. (2008) found that in disaster-ravished areas, mental health professionals are often overworked and may experience extreme emotional burnout. Madrid and Schacher (2006) stated that over-worked trauma counselors may suffer from vicarious traumatization, an extension of a victim’s trauma that is felt by the therapist. This manifestation can cause the therapist to develop feelings of depression and helplessness (Culver, McKinney, & Paradise, 2011; Hunter, 2012).

In many instances, victim depression may manifest through psychosomatic pain and functional impairment (Kristensen et al., 2009). These ailments may be treated by a general practitioner, who may provide treatment for physical symptoms rather than the emotional root of the problem (Maguen, Neria, Conoscenti, & Litz, 2009; Neria et al., 2008). Inappropriate treatment may result in a variety of complications, including additional mental health issues, such as Prolonged Grief Disorder (PGD). PGD has been reported in 14-76% of populations affected by natural disasters (Ghaffari-Nejad, Ahmadi-Mousavi, Gandomkar, & Reihani-Kermani, 2007; Johannesson et al., 2011; Kristensen et al., 2009; Neria et al., 2008; Shear et al., 2005).

In the wake of a natural disaster, it is evident that recovery is not equal. Victims of low socio-economic status tend to suffer the most in the midst of a natural disaster (Bolin & Stanford, 1998; Kessler et al., 2008; Madrid & Grant, 2008). Alterman (2005) noted this inequity in New Orleans during Hurricane Katrina, stating that many poverty-stricken victims did not have the financial or emotional means to escape the disaster. Furthermore, the city government did little to provide an appropriate level of assistance. Bolin (1993) noted that immediate housing shortages and temporary housing arrangements in disaster-stricken areas can create stress in as little as one month following a disaster.

Research has shown that certain individuals or neighborhoods are vulnerable to the effects of a natural disaster (Cutter, 2003; Kasperson, Kasperson, & Dow, 2001; Wisner & Walker, 2005). This phenomenon is known as hazard vulnerability (Wisner, Blaikie, Cannon, & Davis, 2004). Vulnerability researchers contest that existing social and economic structures have a meaningful effect on what was once referred to as a

natural disaster (Cannon, 1994; Maskrey, 1994). Quarantelli (1990) said, “There can never be a natural disaster; at most there is a conjuncture of certain physical happenings and certain social happenings” (p. 18). Wisner et al. (2004) further defined vulnerability as “The characteristics of a person or group and their situation that influence their capacity to anticipate, cope with, resist, and recover from the impact of a natural disaster” (p. 11). The understanding of vulnerability in relationship to the handling of the disaster and subsequent recovery efforts is a key component of disaster recovery research (Madrid & Grant, 2008; Thomas & Holzer, 2006).

Vulnerability plays a huge role in how communities rally and react to a natural disaster (Alterman, 2005; North et al., 2008). Lindell and Prater (2003) found that economically depressed areas affected by a natural disaster reacted ineffectively to the disaster and often were the slowest areas within a community to recover. Thomas and Holzer (2006) found these areas were the last to receive emergency assistance as well. Whaley (2009) and Kessler et al. (2008) noted that mental illness among the victims of disaster was more prevalent in low-income areas and was often left untreated.

Much research has centered on the role of race and gender in social vulnerability. Bolin (1982) noted that extensive damage is often noted in areas where minority groups reside. Wilson (2005) argued that a racial divide exists in the process of disaster recovery, causing long-lasting social and political ramifications for minority populations.

Research shows that gender is also related to social vulnerability. Enarson and Fordham (2001) found disaster vulnerability is not directly related to low socio-economic status, although poverty does play a role in the recovery process. While affluent females may be more resilient to the effects of a natural disaster, they remain vulnerable to

disaster-related issues such as emergency evacuation, loss of physical property, and the stress of recovery (Enarson & Fordham, 2001; Fothergill, 2004; Hoffman, 1998). This effect is compounded with females of low socio-economic status who have more restraints and fewer options for recovery (Bradshaw, 2001; Enarson & Fordham, 2001). Fordham and Ketteridge (1998) noted that poor women struggle with recovery issues primarily because they have often been living in a state of crisis before a disaster hits.

Children are especially vulnerable in the midst of a natural disaster. Bradley (2007) found that children affected by a natural disaster are prone to a variety of anxiety-induced trauma, which left untreated, could result in long-term mental illness. This trauma can result in a variety of psychiatric problems, criminal behavior, and drug use (van der Kolk & McFarlane, 1996). Successful parenting strategies play a crucial role in the treatment of children who are vulnerable after a natural disaster (Bradley, 2007).

Research shows that children respond differently than adults to social and emotional issues surrounding a natural disaster (Bradley, 2007; Pfefferbaum, Houston, North, & Regens, 2008). Lewis and Junyk (1997) noted that children have limited abilities to regulate emotional responses, and therefore, may be unable to express their feelings and concerns in an appropriate manner. Current research shows the ability of a child to deal with social and emotional impacts of a natural disaster are related to:

- the ability of the child to cope with issues present before the disaster,
- the extent of the disaster, and
- the ability of the child and his/her family to maintain general safety throughout the disaster and subsequent recovery (Garbarino, 2001; Pynoos et al., 1987; Rutter, 2000).

Treatment of mental illness is a crucial component of a recovery process (Bradley, 2007; Madrid & Grant, 2008; Weissbecker, 2009; Whaley, 2009). While treatment options may vary by diagnosis, current research shows a disconnect between the diagnosis of normal grief and psychological illnesses such as severe anxiety, clinical depression, and PTSD (Feske, 2008; Jones et al., 2008, Zappert & Westrup, 2008).

Madrid and Grant (2008) found that victims of Hurricane Katrina found solace in returning to a normal routine as quickly as possible. Ginzburg (2008) noted that individuals who survive a natural disaster should be referred to as survivors rather than victims, thus creating a positive aura and affirmative self-perception. Alegria et al., (2008) found that survivors of a natural disaster can benefit from telling their story without interruption. So, how can mental health professionals determine the difference between general grief and complicated mental illness?

Research shows that survivors who were diagnosed with depression before a natural disaster were at a higher risk for poor mental functioning following the event (Fullerton et al., 1999; Kessler et al., 2008; & Kim, Plumb, Gredig, Rankin, & Taylor, 2008). Ginzburg (2008) noted that many clinicians rush to judge and misdiagnose normal depression as other disorders. This misdiagnosis may be directly related to the lack of qualified mental health professionals who are forced to relocate as a result of a disaster (Thomas & Holzer, 2006). Although research shows that most disaster-induced mental illness resolves within 2 years following an event (Kessler et al., 2008), early intervention and appropriate treatment are often necessary (Drescher & Foy, 2010; Kessler et al., 2008; Kristensen et al., 2009; Madrid & Grant, 2008; Najarian et al., 2001; Whaley, 2009).

Recovery from a natural disaster involves more than economic, social, and emotional factors – a community must also concentrate efforts on rebuilding infrastructure as part of the recovery process (FEMA, 2011). While city planners work with a variety of state agencies and volunteer organizations, the role of the federal government is paramount to recovery and long-range planning in the United States.

Federal Involvement in a Recovery Process

The role of government is very clear in the wake of a natural disaster. Federal assistance is provided by FEMA, a division of the Department of Homeland Security (FEMA, 2007a; FEMA, 2007b). This assistance is provided to communities and private nonprofit organizations under the Public Assistance (PA) program (United States Department of Homeland Security, 2007).

FEMA operates under the provisions of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. §5121-5207, or the Stafford Act (FEMA, 2007b). FEMA's Public Assistance program provides funding to assist communities recovering from a natural disaster. Once the president of the United States has declared an emergency in a given location, FEMA is instructed to mobilize to that community (or communities) and spearhead an immediate recovery process (United States Department of Homeland Security, 2007).

FEMA does not control all aspects of a flood recovery. FEMA operates under the notion that local decision-making is a key component of a successful recovery initiative (Kick et al., 2011). That said, it is important to note that FEMA, in compliance with the Stafford Act, is required to follow specific provisions of the law. Failure of any local government sub-division to comply with provisions of the Stafford Act may result in loss

of some, or all, federal assistance (Westley, Murphy, & Anderson, 2008). Under provisions of the Stafford Act, the federal government pays 75% of recovery costs, which is matched by a 25% local cost share (Rubin & Barbee, 1985; United States Department of Homeland Security, 2007).

Federal assistance is provided through a variety of venues. Immediate, short-term solutions are spearheaded by a FEMA Emergency Response Team, while long-term planning is led by a Federal Interagency Hazard Mitigation Team, or HMT (Rubin & Barbee, 1985). Hazard mitigation will be addressed later in this chapter.

FEMA provides assistance to individuals and public entities. Individual assistance is based on financial guidelines, including availability of federal funds specifically apportioned for disaster relief (United States Department of Homeland Security, 2007). Public assistance is available to public buildings and certain non-profit organizations, such as public schools (Davis & Richard, 2005). Private or parochial schools are excluded from assistance under the Stafford Act (Zehr, 2005).

When damage is caused by repetitive disasters such as flooding of low-lying areas, hazard mitigation is often a requirement of federal public assistance under the Stafford Act (Baird, 2010; Burby, 2006; Kick et al., 2011). This may include options for rebuilding that eliminate flooding danger and provide a least-cost alternative to rebuilding at a previous location (United States Department of Homeland Security, 2007).

The interaction of federal, state, and local agencies can cause a sense of competition among various entities and may lead to confusion in regard to individual roles, priorities, and post-disaster mitigation (Burby, 2006; Pielke, 1999; Wright & Rossi,

1981). This confusion can create anger when federal regulations lead to limited options (Gill, 2007; Westley et al., 2008). Platt (1999) noted that while the federal government is expected to pay the majority of costs linked to a recovery, local government sub-divisions are angered by federal requirements that alter long-term recovery plans.

The role of federal involvement in recovery planning took on new meaning after Hurricane Katrina swept New Orleans in 2005. Burby (2006) found attempts to make the most hazardous areas of New Orleans safe for building added to damage caused by the hurricane. Grunwald and Glasser (2005) discovered that New Orleans city officials rejected plans to enhance their levee system to avoid paying the local cost share of federal projects. This lack of local concern prompted federal officials to place long-term planning requirements on affected government sub-divisions (Godschalk et al., 2009).

The effectiveness of FEMA has long been debated. The role of FEMA in each natural disaster is closely scrutinized in the court of public opinion and provides an opportunity for change and improvement (Roberts, 2006). When Hurricane Hugo destroyed much of South Carolina in 1989, United States Senator Ernest “Fritz” Hollings referred to FEMA as “the sorriest bunch of bureaucratic jackasses I’ve ever known” (cited in Roberts, 2006, p. 19). Examples of this nature have been cited after every natural disaster to date; Hurricane Sandy in 2012 was no exception (Johnson, 2012). The idea that FEMA may be inefficient at best and ineffective at worst is based on the assumption that individuals experience the most suffering in the aftermath of a natural disaster, while government officials provide little support to limit individual vulnerability (Burby, 2006). Regardless of intent, recent disasters have shown that it is difficult for

government officials to respond in a manner that meets public approval (Pennings & Grossman, 2008).

Federal involvement in recovery is not limited to financial assistance. Under the provisions of the Stafford Act, FEMA provides a long-range community response service known as Emergency Support Function #14, or ESF #14 (FEMA, 2003). ESF #14 employees work with groups in a community to assess that community's reality and help plan to avoid future disaster (FEMA, 2011). Information is gathered through a variety of community meetings and interviews to assist a community in long-range planning initiations. The United States Government Accountability Office (2007) found while several aspects of ESF #14 are acceptable, the organization lacks clarity and specificity in federal reporting and finalization of community reports.

Federal involvement in disaster recovery remains a controversial discussion. The question is not related to the need for assistance, but rather the level of support that is provided. Hazard mitigation, which may affect federal financial assistance, can create an even larger concern.

Hazard Mitigation

When it comes to the study of leadership, dealing with crisis effectively is the most extreme test of a successful leader (Kapucu, 2008). Each year, civic leaders are faced with tough decisions in regard to short-term and long-term disaster recovery. Rubin and Barbee (1985) found that in regard to these decisions, local involvement is key. Collaborative decision-making can result in a successful long-term recovery plan and create a sense of post-event viability within a community (Alesch, 2005; Jennison, 2008; Topping, Hayashi, Siembieda, & Boswell, 2010).

Hazard mitigation is a key component of long-term disaster recovery (Berke, Song, & Stevens, 2009). Hazard mitigation involves complex interaction, research, scrutiny, and planning (Kapucu, 2008; Rubin & Barbee, 1985). In theory, mitigation programs limit repetitive damage, save money, and provide a safer living environment (Berke et al., 2009; FEMA, 2007a; FEMA, 2007b; FEMA, 2008; Jennison, 2008; Kick et al., 2011).

Recovery from natural disaster is a very expensive venture. Hurricane Katrina remains the most costly natural disaster in the history of the United States with a total recovery cost of 200 billion dollars (Congleton, 2006; Wolk, 2005). The Red River Flood of 1997, commonly referred to as North Dakota's *flood of the century*, totaled one billion dollars in total damages (Pielke, 1999). The Souris River Flood of 2011 is expected to exceed the one billion dollar mark (Zeman, 2012). While financial loss experienced by a natural disaster is devastating, the remedy of hazard mitigation is not an easy pill to swallow.

In reference to natural disasters, flooding appears to be the most burdensome disaster and claims the most lives (Brody, Zahran, Highfield, Grover, & Vedlitz, 2008; Mileti, 1999). Since the 1990s, FEMA has focused their mitigation efforts on repetitive, non-catastrophic flooding (Kick et al., 2011). This effort involves the mitigation of circumstances that may prevent future damage from repetitive flooding. While cost-benefit studies have shown that homes and businesses should not be constructed on low-lying ground, collective behavior and human decision-making can make mitigation decisions very difficult (Kunreuther, 2006). Financial rationality is a crucial part of the

hazard mitigation process, although decision-making in the aftermath of a flood disaster is not always a straightforward process (Viscusi, 2009).

A 20th century model of rapid community growth led to growth and overpopulation of areas prone to flooding (Burby, 2006). Newer construction models are based on avoiding building in danger areas, with sprawling parks and green space in low-lying areas (National Research Council, 2006). This phenomenon has created a natural hazard mitigation model in rapidly growing cities (Kick et al., 2011). Older communities were often built near natural water sources. As these cities have expanded, homes located near water sources may serve as low-income areas (Burby, 2006). Research has shown that low-income areas have the most difficult time recovering after a natural disaster (Bradshaw, 2001; Enarson & Fordham, 2001).

Hazard mitigation efforts tend to affect those who live in areas prone to repetitive damage. While a logical assessment of mitigation may make fiscal sense, psychosocial needs of residents must also be considered (Manzo & Perkins, 2006). Blunt and Dowling (2006) found that a home is more than a material object; it provides a sense of security and fills an emotional need. This understanding has also been noted by Brown and Perkins (1992); Chawla (1992); Brown, Perkins, and Brown (2003); and Manzo and Perkins (2006).

The federal government plays a crucial role in hazard mitigation planning. In earlier intervention periods, for example the years 1917 to 1965, the government focused on structural flood control; and from 1966 to 1992, flood insurance regulations (Kick et al., 2011). Over the years, each phase of federal disaster response has provided a unique methodology in dealing with disaster and subsequent recovery.

The National Flood Insurance Act of 1968 established the National Flood Insurance Program (United States Government Accountability Office, 2007). The program was created to provide affordable flood insurance to residents as an alternative to direct assistance after repetitive flooding (Congressional Digest, 2012a, 2012b; Richards, 2008). The National Flood Insurance Act was amended in 1973 by the Flood [Disaster] Protection Act. Since the Flood Disaster Protection Act of 1973, homeowners with a federal home mortgage, who reside in an area prone to flooding, have been required to purchase flood insurance (Congressional Digest, 2012a).

Mitigation work and successfully limiting flooding in low-lying areas tends to create a sense of complacency. A survey of Grand Forks homeowners concluded that while 95% knew what flood insurance was, 79.6% concluded that flood insurance was not necessary (National Lenders Insurance Council, 1997). Gordon et al. (1998) found that this paradigm is common in flood-prone communities and is based on the assumption that natural disasters will not affect a community twice in a given amount of time. Before the flood of 2011, supposedly successful flood mitigation efforts in the city of Minot caused the federal government to lift a requirement that residents in flood prone areas purchase flood insurance (Sulzberger, 2011a). Protective efforts in place were considered adequate, and then the Souris River inundated the city of Minot in late June of 2011 (Barrett & Nicas, 2011; Sulzberger, 2011b; Zeman, 2012).

In 2000, the United States Congress passed the Disaster Mitigation Act to amend the Stafford Act (Schwab, 2010). This amendment requires state and local governments to provide long-range mitigation plans in order to prevent repetitive, non-catastrophic flooding (Schwab, 2010; Topping et al., 2010). While local entities remain in charge of

this process, federal compliance is required in order to secure public assistance funds from FEMA (FEMA, 2007a).

Hazard mitigation is based on the concept of financial practicality – homes and businesses do not flood when they are moved from high-risk areas (Jennison, 2008; Olshansky, 2006; Topping et al., 2010). In 2005, FEMA reported that every dollar spent on hazard mitigation efforts provides four dollars of benefit (Woodworth, 2006). In the fiscal arena, sound hazard mitigation policy makes sense (U. S. Department of Education, 2006). However, the discussion of sound fiscal practice may be ill received by property owners, thus creating a rift between local government and residents (Donner, 2008, Kick et al., 2011).

The role of the federal government in hazard mitigation is a sensitive topic. FEMA has the ability to provide a variety of federal experts such as engineers, environmental scientists, and social workers to assist in a recovery process (Brennan, Cantrell, Spranger, & Kumaran, 2006). However, local residents tend to view the role of *expert* as controlling, ineffective, and insensitive (Burby, 2006; Gill, 2007; Pennings & Grossman, 2008; Platt, 1999; Westley et al., 2008). Brinkley (2006) found that FEMA operates most efficiently when positive relationships are formed with local officials early in the recovery process.

Can hazard mitigation be viewed as a successful method for eliminating repetitive claims for help from natural disasters? While evidence appears to lead one to assume that yes, hazard mitigation is a successful method for eliminating repetitive claims, more research is needed (Murphy, 2007). Kick et al. (2011) found that because hazard mitigation is a relatively new concept, it has presented a ripe opportunity for further

evaluation. While hard data is not present to affirm the importance of the role of hazard mitigation in disaster recovery, conventional wisdom implies that hazard mitigation can limit vulnerability and increase community resilience (Jennison, 2008; Kick et al., 2011; U. S. Department of Education, 2006).

Conclusion

Chapter II provided a review of literature of natural disaster recovery. The review was aimed at creating a better understanding of natural disasters and what constitutes recovery from a natural disaster. Specifically, Chapter II examined the economic, social, and emotional effects of a natural disaster; federal involvement in the recovery process; and the role of hazard mitigation in long-range planning. The literature review indicated that recovery is difficult to define, and therefore, difficult to obtain. The review also found that while the role of the federal government is necessary, it is not easily accepted. Recovery is difficult, and collaboration is a vital element of sustainable recovery.

CHAPTER III

METHODOLOGY

One cannot dispute the immediate effects of a natural disaster. In the midst of a natural disaster, the news media swarms to create and promote special interest stories. Broadcasters share heart-wrenching stories of those who have lost their homes, family members, or friends. Eventually, the media moves on to another crisis, leaving the victims in the midst of the rebuilding process.

No human life was lost as a direct result of the Souris River Flood of 2011. However, many valley residents experienced emotional distress. The valley residents were evacuated on two separate occasions during the summer of 2011, and watched damage totals increase during the 30-day inundation period. In late July, residents returned to the valley to get a first-hand glimpse of the damage caused by the water. The damage was extensive.

Minot Public School District #1 experienced extreme financial loss as a result of the Souris River Flood of 2011. Financial loss was relatively easy to determine as damage estimates were tallied and buildings were either repaired or rebuilt. The emotional and social loss to the district and its patrons has not been as easy to determine. The Minot community and school district found that the social and emotional effects of this event went far beyond any detailed financial damage estimate.

While one may not question the fact that emotional loss is evident as the result of a natural disaster, the researcher found very little information and research on the topic. Specifically, no definitive research had been conducted to explore what constitutes full recovery of a school community following a natural disaster. The purpose of this research is to seek answers to research questions listed below.

Research Questions

The purpose of this study was to evaluate what constitutes full recovery of a school community following a natural disaster. The study examined perceptions of victims and public leaders in regard to the Souris River Flood of 2011 and subsequent recovery efforts up to the time of this research.

Focus group sessions and individual interviews were conducted to answer the following research questions:

1. What social, emotional, and economic processes are associated with school community recovery from a natural disaster?
2. What demonstrates that a school community's recovery is complete?
3. Who are the key players in the recovery process of a school community?

Introduction

The Souris River Flood of 2011 had a dramatic effect on many Minot residents. While all citizens were very aware of the flood and the subsequent damage, not all citizens were affected equally. In total, 4,152 structures and 522 businesses were heavily damaged (City of Minot, 2012). Many other businesses were forced to close during the flood, and owners of these businesses have experienced financial losses as well. Some

families lost their homes and sources of income; some only lost their homes; while others lost homes, businesses, and schools.

The story of the Souris River Flood of 2011 cannot be told by financial facts and figures alone. The researcher felt struggles and recovery efforts could best be documented through a series of focus groups and interviews. In order to ascertain the zeitgeist of the Minot community after the flood and the collective response of the community to the Souris River Flood of 2011, the researcher implemented a qualitative approach. In simple terms, the researcher acknowledged there was a story to be told in Minot, North Dakota; a story that could be told by the powerful voices of the Minot Public School District #1 family and other area residents most affected by the Souris River Flood of 2011.

Qualitative Methods

The research population included patrons of Minot Public School District #1 who were affected, in some way, by the Souris River Flood of 2011. The researcher used a series of focus groups and interviews to evaluate the effects of the flood on citizens of Minot, North Dakota.

Participant selection for focus groups was based on recommendations from citizens, school leaders, and community leaders to create a purposeful sampling that provided an “information-rich” environment for understanding (Patton, 2002, p. 169). Focus groups were conducted with parents, teachers, and community members (community members who had no direct link to the school system). Each focus group was homogenous, and contained no more than nine participants. The researcher conducted a total of nine homogenous focus group sessions, three in each category listed

above. Focus group participants were given a pseudonym, and their names listed as a participant in the study. All participants were required to sign a “consent to participate” form (Appendix B).

Qualitative research centers on the notion of who we are and who are the people to be studied (Hatch, 2002). Hatch also noted the delicacy of vulnerable populations and was concerned that imbalance of power may cause risk to participants. The researcher is currently serving as Superintendent of Minot Public School District #1. The researcher recognizes the level of authority attached to the position of superintendent and, furthermore, understands that being directly involved in focus groups may hamper responses of participants who know and recognize the researcher. Therefore, strict instructions were provided at the beginning of each session, ensuring participants that participation was voluntary, and that direct quotes would not be attached to a participant’s name, or to any description that may identify the participant.

Participants in focus groups were asked a series of non-leading questions (Appendix C) as a basis for discussion. In order to create a thick description of first-hand accounts, the researcher followed up with more specific, close-ended questions. The researcher allowed all participants an opportunity to freely express their stories and opinions while ensuring the major talking points were covered during each session. Participants were informed the length of each session would be around 90 minutes.

Information gathered by focus groups was transcribed and coded. This process is clearly defined in the data analysis section of Chapter III. A list of perceived leaders and significant helpers in the flood recovery process were identified as part of this data analysis.

The researcher also conducted formal interviews with state and local leaders who were directly related to flood recovery efforts. Interviewees were given the option to participate in the study and were also required to sign a consent to participate form identical to the form focus group participants were asked to sign (Appendix B). Like focus groups, interviews were recorded, transcribed, and coded.

Collection of Data & Data Analysis

Minot Public School District #1 supported this research study. The researcher received a letter of support from the Minot Public School Board President (Appendix D) to utilize school district data for purposes of this study.

The researcher also gathered data from state and federal agencies, such as the North Dakota Department of Emergency Services, FEMA, the United States Army Corps of Engineers, and the Small Business Association. Some data were gleaned through published reports, and appropriate references were documented. For unpublished data, specifically school district data, the researcher secured an appropriate letter of permission from the President of the school board. This letter of permission can be found in Appendix D.

All focus group participants were provided a reasonable assurance of anonymity. Also, individuals who participated in the formal interview process were referred to in a manner that would not unveil their position or identity. All focus group sessions and formal interviews were recorded digitally and transcribed verbatim.

Varied backgrounds and interests bring unique perspectives to research. Creswell (2013) found that researchers have a “personal history that situates them as inquirers” (p. 51). The researcher, serving as Superintendent of Minot Public School District #1 during

the flood recovery period, has a keen interest in the findings of this research.

Furthermore, the absence of similar research created an unprecedented opportunity for this study.

Focus groups were completed during the first phase of the research period. Observation and interview data from each focus group was transcribed, coded, and analyzed. The results of focus groups were used to identify key players in the recovery process. The data gleaned from focus groups assisted the researcher in development of questions for formal interviews conducted with key players. Formal interviews were considered a second phase of the research period.

While Phase 1 and Phase 2 differed in specificity and content, the researcher believes that methodological congruence (Morse & Richards, 2002) showed interconnectivity between focus groups and interview data. The procedures used to gather data in focus groups and interviews followed the same protocol.

Participants were afforded the opportunity to provide additional comments during the focus groups and interviews. The transcript of each session was transferred to a HyperResearch software program for coding.

Using a grounded theory approach, all codes were categorized; a process of linking like codes together (Ary, Jacobs, Razavieh, & Sorensen, 2005). The process of open coding and categorizing was used to create detailed descriptions of each participant. Axial coding was used to develop categories. The researcher began to examine common threads or potential themes in the data. Selective coding was used to glean data points to create a theory. A grounded theory diagram was completed, illustrating commonalities noted in focus group data. This diagram can be found in Chapter V.

Verification

The emotional nature of loss and bereavement is astounding. Bereavement is considered to be one of the most painful experiences of life (Shear et al., 2005). The researcher recognized the emotional nature of a natural disaster and, specifically, understood the emotional nature of loss and bereavement as seen by many flood victims. This emotion may be exacerbated by the presentation of rumor and innuendo as fact. In order to ensure that all data presented in the study was valid, the researcher provided separate assurances of validity.

Two analytical strategies were used to test internal validity of data. The first test included a triangulation of personal report data, legal reference data, and interview data. The second test involved member checking through a review of interview transcripts.

The researcher concentrated on reporting perceptions of participants, and data were gathered from surveys, governmental agencies, and public records. Data that could not be triangulated or verified through member checking were not included in the findings of the study.

In times of mishap, rumors abound. This was noted during the 2001 Foot and Mouth Crisis in the United Kingdom. According to researchers at Dominican University, rumors and gossip began to flourish. Farmers and ranchers were isolated and received information third and fourth hand; often this information was not based on fact (Hagar, 2009). This created a level of panic throughout the nation.

The researcher recognized that rumors and innuendo are often present during a crisis and recovery process. In order to preserve the opinions and voices of survey participants, unverified information, rumor, or innuendo were documented as unverified

beliefs. While this information may not play a direct role in the recovery process, the researcher recognized the pandemonium caused by unsubstantiated rumor and the correlating effect on the emotional well being of victims. The awareness of volatility of inaccurate information presented in the midst of this natural disaster may assist leaders in dealing with crises prompted by future natural disasters.

Researcher Background and Subjectivity

The researcher has worked for Minot School District #1 since July 1, 2002. The researcher has worked as a high school assistant principal, principal, and district superintendent. During this time, the researcher has developed many relationships within the community and, specifically, among the patrons of Minot Public School District #1.

Qualitative research is aimed at enriching our understanding of human experience (Elliot, Fischer & Rennie, 1999). Terre Blanche and Kelly, (1999), found that qualitative data analysis is designed to glean social, emotional, and historical meaning from data that is gathered. The patrons of Minot Public School District #1 have a story to tell. As the leader of this organization, the researcher felt an obligation to bring this story to a level of common understanding among school district constituents.

As a veteran of Minot Public School District #1, the researcher had ample opportunity to promote real and accessible dialogue through a qualitative research framework. This qualitative research study allowed the researcher to be involved in transcription, coding, and categorization of data collected from focus groups and interviews, but avoided any potential concerns of coercion.

Ethical Considerations

Qualitative data should provide an in-depth description of a specific phenomenon (Creswell, 2009). The Souris River Flood of 2011 is a specific event that has forever shaped the lives of the Minot Public School District community. The researcher recognized the sensitive and emotional nature of this disaster and, furthermore, recognized the emotional effects that may be present during focus groups and interviews. Participants who experienced emotional difficulty were allowed to opt out of the focus group or interview at any time. Data that might identify an individual or family was not used in this study.

Participation in this study was voluntary and no compensation was provided. Thank you notes were sent to each participant. Each focus group transcription was shared with a participant to verify accuracy of the transcripts. Findings were made available to all participants if requested.

Conclusion

The methodology used to conduct this study was described in Chapter III. Chapter IV will report the data gathered from the study, and Chapter V will include the central phenomena of the study, as well as an analysis of the relationship of the study to the literature review found in Chapter II. The researcher will provide a conclusion and recommendations based on the results of the study in Chapter VI.

CHAPTER IV

PRESENTATION OF FINDINGS

Purpose of the Study

The purpose of this qualitative study was to determine what constitutes a full recovery of a school community from a natural disaster. This qualitative study examined the perceptions of residents affected by the Souris River Flood of 2011. This study has the potential to assist school communities who are suffering the effects of a natural disaster, and can also support and enhance response plans of governmental agencies and non-profit organizations that typically respond to disasters.

The researcher chose a qualitative approach to gather and examine the experiences and perceptions of residents affected by a flood in Minot in the year 2011. Denzin and Lincoln (2011) found that varied backgrounds bring a unique perspective to research. It is noted that not every resident of the Souris River Valley was affected in the same fashion, and therefore, residents affected by the flood had different perspectives on damage and subsequent recovery efforts. Simply put, the citizens of Minot, North Dakota, had a unique story to tell; a story that could not simply be relayed by survey data or financial facts.

The information provided by focus group participants and interviewees was timely, relevant, and crucial in understanding the social, emotional, and financial effects

of this natural disaster, as well as determining what constitutes recovery from such an event.

Selection of Participants

Volunteers for the study were sought by contacting school and community organizations, as well as placing posters throughout the community (Appendix E). The response was surprising. Over three thousand individuals were either nominated or volunteered for participation. Each name was placed on a list entitled, Community Participation List. Names on this list were compared with school district records to determine which potential participants had students currently enrolled at Minot Public Schools. Those potential participants were then placed on a separate list, entitled Parent Participation List. Teachers and staff members were removed from the Community Participation List and the Parent Participation List to form a third list entitled, School Employee Participation List. In order to glean a representative sample from the large number of potential participants, the principal researcher used a random number generator to ensure participants provided a unique and unbiased sampling of opinions and experiences.

Observations Made During Focus Group Sessions

Whaley (2009) found stress of a natural disaster may exacerbate social and emotional problems. The researcher noted that participation in a flood recovery focus group sometimes aroused negative feelings and connotations. In order to ensure an adequate number of focus group participants, additional participants were invited to each focus group session. The researcher noted several interesting phenomena: (a) the participation rate exceeded expectations, that is, very few individuals failed to attend their

scheduled focus group session; (b) while focus groups were scheduled for 90 minute periods, participants continued visiting for up to 70 minutes after the close of a session; (c) while several participants exhibited various emotions during focus group sessions, all participants completed their sessions; and (d) participants appeared anxious to talk about their experiences, and to share their stories with individuals who had similar experiences. Charles, a retired teacher commented, “Thanks for inviting me. I feel a kinship with the folks around the table. It might have not all been the same, but we are similar.” George, a laborer and Minot resident affirmed this belief, stating, “This is actually pretty therapeutic . . . sitting with people who experienced the same thing you did. It doesn’t happen often where people sit in the same room that were in the same situation.”

The structure of a focus group can create an environment ripe for fabrication and pretentiousness. Statements used in this chapter were selected as examples indicative of lived experiences of residents affected by a flood as a whole. Statements that exemplified outlying experiences or fringe behaviors were not selected for this chapter.

Interpretation of Data

This qualitative study model involved a series of nine focus groups and ten individual interviews. The information gleaned through this process was extensive. All interviews and focus group meetings were recorded, and the principal researcher transcribed each recording verbatim. The transcription process yielded over 700 pages of documents. A participant from each focus group was asked to review the transcript for accuracy.

In order to bring out the dimensions of the data, the principal researcher developed a list of 153 codes. All codes and descriptive examples were verified by Dr.

Pauline Stonehouse before open coding was conducted (Appendix F). The transcripts were coded twice to ensure accurate interpretation. In total, 2,743 passages were labeled and coded during the open coding process. The codes were categorized, and eight thematic findings were noted.

Thematic Findings

This chapter presents themes that emerged from compilation of data gathered in focus groups and interviews, as well as documents that were gathered as part of this study. In order to better understand data gathered in the research process and to capture the zeitgeist of the Minot community at the time of this study (a couple years after the flood), the researcher used a grounded theory model. This model included an iterative process that allowed the researcher to gather and review data in stages in order to develop a series of themes revealed during the research process. Through a thorough review of data, eight specific, recurrent themes emerged. These themes are presented as follows.

1. The pre-flood and evacuation period was a traumatic experience and was the first crisis faced by Minot residents directly affected by the flood.
2. The assessment and recovery period was a traumatic experience and was the second crisis faced by Minot residents who were directly affected by the flood.
3. The FEMA Individual Assistance program, while expeditious in nature, received mixed reviews by Minot residents who were directly affected by the flood.

4. The FEMA Public Assistance program was a contentious process subject to intervention by political leaders before consensus could be reached and recovery could begin.
5. Crisis management is a collaborative process involving federal, state, and local government, as well as volunteer services from charitable organizations.
6. Long-term effects of a natural disaster span far beyond the physical recovery of homes, businesses, and school buildings. The Minot Public School District community was drastically changed as a result of the Souris River Flood of 2011.
7. Effective communication has been lacking during all phases of crisis and recovery, and has created a layer of confusion and mistrust throughout the Souris River Valley.
8. The Souris River Flood of 2011 negatively affected survivors; negative effects have included social, emotional, and financial hardships.

Theme #1

The pre-flood and evacuation period was a traumatic experience and was the first crisis faced by Minot residents directly affected by the flood.

Residents were concerned that flooding was possible in the Souris River Valley long before water left the river banks on June 22, 2011. In December, 2010, the Saskatchewan Watershed Authority expressed concern that rivers and creeks normally dry in early fall were still flowing at the time of freeze up. This prompted the Canadian government to release water into the Souris river system throughout winter months

(Saskatchewan Watershed Authority, 2010). A rapid snow melt in March, coupled with snow and rain events throughout the Spring of 2011, caused increased flows through the city of Minot (see Appendix A).

Heavy rains at the headwaters of the Souris River during Memorial Day weekend, 2011, created panic among Minot residents. On May 30, 2011, Minot Mayor Curt Zimbleman ordered the evacuation of 10,000 residents along the Souris River Valley. The Minot Public School District conducted a mass evacuation of school structures in the flood plain region. An earthen dike was placed around Lincoln Elementary and Ramstad Middle School. The Army Corps of Engineers removed the dike around Lincoln School following the first evacuation.

On June 6, 2011, Mayor Zimbleman canceled the evacuation and allowed residents to return to their homes. The Army Corp of Engineers, the Saskatchewan Watershed Authority, the North Dakota Game and Fish Department, and the city of Minot continued to monitor river levels. At the time, the situation appeared stable. But then, a final evacuation was ordered on Monday, June 20, 2011, when Mayor Zimbleman stated, "It's hard to realize, but we are going to become a lake" (Obenchain, 2011, p. B1). Statements made by participants in this study describe the stress and panic surrounding Minot's final evacuation, and paints a picture of a most traumatic phase of the crisis.

Pre-Flood Fight, First Evacuation, and Life Between Evacuations

On June 6, 2011, the flood scare appeared to be over. Residents were allowed to return home, despite reports the river level remained high. Many residents gathered their belongings that were removed during the first evacuation and moved home, while others remained cautious and did not move. Carl, a local electrician, decided to paint the

basement and clean carpets, stating, “I thought it was a good time to do it.” Janeen, a daycare provider, cleaned her entire house.

On June 20, 2011, news of additional water coming and more potential flooding created a whole new level of panic. The Mayor’s office stated the flood forecast was much more severe than previously expected. An initial report predicted residents would have a period of 3 days to evacuate. Subsequent reporting of additional water releases from Canadian dams reduced predictions to half that time. Burt, an electrical inspector reflected on this period, stating,

We lost a lot of things that we couldn’t get out; and I know that if I had been there, I would have worked, but the timelines they gave us. . . . They gave us three days on the final, and then all the sudden it was down to a day and a half . . . so the time was cut short, so you couldn’t get everything out.

Residents of the valley were dependent on volunteer labor to provide assistance in evacuation.

Despite reports that flooding was imminent, many residents were in a state of denial. Clarice, a social worker, followed up with neighbors during the evacuation period, and found an elderly neighbor who refused to evacuate. According to Clarice, “[I] literally had to go in and talk her into getting out, because she didn’t want to leave. . . . She had evacuated in 1969, and nothing happened.” Alton, a retired city worker, recalled this phenomena in the Souris River Valley, especially on West Central Avenue, where people “thought there was no way this was going to happen. But, as I drove through that area right after the water went down, and there were a lot of houses that had everything

they owned out on the curb.” Citizens who were well connected depended on volunteers to assist in a rapid evacuation during the final hours before the flood.

Volunteers During Evacuation

Volunteer assistance was a crucial component of Minot’s evacuations. Individuals who were connected to others in the community had more success in evacuation and, in general, were able to remove most of their belongings from their home. Pete, a school teacher and scout leader stated that:

[I had] a lot of friends through scouts and family that brought a trailer down, and we were lucky enough to get most of the important stuff out or at least up to the second floor, so it didn’t get affected . . . just the outcropping of friends and family that helped us out along the way.

Cindy, a home daycare provider, noted the valley was full of “roving bands of people . . . just around to pick up stuff.”

Some residents did not fare so well. Many workers in the public sector struggled with role responsibility during this period. Jeri, a 911 dispatch operator, stated that 19 Minot police officers were flooded, “Were driving around town telling people to get out of their houses, and wishing they could be home to get stuff out of their houses.”

Vulnerable populations, such as the elderly and economically disadvantaged individuals, struggled to find assistance during the final evacuation period.

Charles, a retired school administrator, recalled that he and his wife had accepted that they would not be able to save any items in their home, but they were amazed when a group from their church came and “backed into the driveway with a flatbed . . . and things starting going on out of the house.” This was reported again and again by several

elderly study participants. Margaret, a retired secretary, recalled waiting to meet with a FEMA agent, and “there was an elderly gentleman waiting, too. He didn’t get anything out of his house. His kids all live out of state, and he didn’t know who to call. . . . He lost everything.” Jackie, a para-professional noted, “Us younger folks had friends and co-workers, but I think it had to have been tougher for the elderly . . . you just pack your suitcase and go.”

Public entities were not exempt from the stress of evacuation. The Minot Public School District went to great lengths to remove essential materials from district buildings in the inundation zone. Sam, a district custodian, noted that in many instances, the choices of what to remove were less than prudent, stating that “in many cases, it was nickels for dollars. . . . We would carry out boxes of paper, and walk right past expensive musical instruments.” Ring dikes around Ramstad and Perkett limited the ability of district personnel to remove items from those schools in the final hours of the evacuation period.

Limited evacuation was noted among other vulnerable populations as well. Richard, a retired park district board member, noted that for many, the reality of flooding was an issue. He stated:

When we got back to our house, we were busy working, so we never really thought much about it until one day. In general, we noticed that nobody was there, and a couple of weeks later, we went over, and everything was still in that house, including their clothes. They must have gotten very little out. We heard later they had ended up getting a divorce.

Stress in families and relationships were not uncommon. Pastor Pete, a local minister, noted, “When the hero stage wore off, the strain on relationships was huge. My observation was that if you had any strain prior to, it was exemplified by the disaster. I would think you have this disaster to fight, that it might pull people together, but for many it was the exact opposite – those problems intensified.” Shock and stress was a major issue during the evacuation period.

Stress and Shock Associated With Evacuation

The first reaction reported by participants during focus groups and interviews was shock associated with the reality of evacuation and flooding. Despite a 3 month pre-flood fight and prior evacuation, many residents reported experiencing signs of shock during the second evacuation process and subsequent flood. Sam, a school district custodian, recalls the evening before the flood, when he went to assist a friend in evacuating during the second evacuation, stating,

We were just given the order to evacuate again, and I ended up at one of my daughter’s friend’s house. I distinctly remember the dad walking around, drinking gin and tonics, basically laughing at us, because we were moving his stuff . . . finally at about 8:30, it was starting to get dark, and then it hit him. He panicked as he was watching the trucks and pickups. . . It was just like something you would see in the movies.

The shock was evident as citizens scurried during the final hours of the evacuation. Rico, a former TV journalist, recalled the actions of city council members who were affected by the flood. “Their expressions were just blank . . . you could almost see a little wash of

horror over their faces.” The shock quickly set into a very stressful period of transitional living and a 30 day wait to assess damage from the flood waters.

Transitional Living

In the days following the evacuation, flood-affected residents were forced to find transitional homes. The Red Cross set up two shelters, one on each side of the Souris River Valley. According to Hunter, a Red Cross employee, “Less than 300 of the estimated 14,000 evacuated citizens accessed the shelter system in Minot.” The remaining residents found transitional living sites, many with citizens of Minot who lived outside the flood zone. This experience received mixed reviews by participants in this study.

While some found the experience of living with other families rewarding, many others noted extreme struggles with communal living. For many, this experience created a stressful environment that had negative effects on marriage and family. Jeri, a 911 dispatch operator, opened her home to her in-laws, and noted, “It’s terrible to say, but it was a long time with the in-laws. My husband said, ‘it won’t be that bad,’ and I said, ‘they’re your parents, and you lived with them your whole life.’” Sally, an appliance salesman, described her living experience:

In Carpio . . . we stayed there until September. . . . We couldn’t stay in the house, so we put our daughter in the house, and she laid on a mattress in the living room, and my nephew slept on the floor. So, we slept outside in a little makeshift camper until September. It got to the point, on different occasions, I woke up with ants crawling all over me.

Some participants reported extreme issues with transitional living that resulted in counseling for family members. Tiffany, a special needs teacher, took in a co-worker and her daughter during the evacuation and early recovery period, both whom she claims bullied her daughter. She said, “It did happen, and my daughter is still in counseling . . . and we kicked them out in September.”

Flood-affected residents with pets also noted stressful conditions. Many hosts were unwilling to take in pets, and in some instances, those who did were unhappy with the special attention that was required by the animals. Leila, a delivery driver, stated that “We moved to our daughter’s place with our three dogs – It didn’t go so well,” adding, “My dogs are like 15 years old, and you can’t teach an old dog new tricks.” Mark, a secondary math teacher who experienced the Grand Forks Flood of 1997, pondered what to do with his cat, stating,

We didn’t think at first that it was going to take that long, so we thought about just leaving him upstairs, but then we figured we better grab him. I told my wife, “It’s going to be longer than you think . . . from my experiences in Grand Forks. . . . It won’t be a couple of days, it will be weeks, and I don’t want to find a dead cat upstairs.”

In many instances, the options for transitional living were limited for pet owners.

While participants expressed sincere gratitude to those who offered shelter during the transitional period, many experienced a sense of guilt during this time. Georgiana, an elementary school teacher, noted:

We were with good friends, so we had a basement all to ourselves. But, I always felt that we needed to do something for them. We needed to cook.

. . . We needed to clean . . . or do laundry. It felt bad using their things. I felt like I needed to walk on tip toes . . . not that they made us feel bad, but you do feel bad. You just feel like you can't do what you want to.

Alyssa, a stay-at-home military wife, felt the need to show her appreciation. She explained:

I am a couponer, so that is one way I showed gratitude to the family that we were living with. . . . I would buy the stuff I could get for free or cheap . . . because she wouldn't accept any money, and I knew her water bill had to be going up, and the food bill we took care of because we could go to the commissary on base, but I felt like we couldn't do enough to thank her . . . thank you from saving us from sleeping in our cars.

The shock and stress of evacuation, coupled with struggles of transitional living during the evacuation and flood was the basis of the first crisis noted by flooded residents.

Shelby, an elementary school teacher summed up the stress related to the evacuation and transitional living period:

As we were leaving our home, and we were driving away from our house in my husband's little truck, I looked at him and thought . . . I love this man, and I am so glad that he is here to go through this with me. I didn't always like him, but I knew, at this point, that I loved him. Then, we drove to my sister-in-law's tiny little house, and we couldn't have sex for 8 months.

Summation of Findings of Theme #1

The pre-flood fight and subsequent evacuation periods were difficult for residents of the Souris River Valley. Residents who were well connected were able to evacuate their homes, and in some cases, lost very little personal property, while vulnerable populations did not have the connections and networks to evacuate from their homes. Transitional living during the flood and early stages of recovery was a difficult experience for many. While many residents affected by the flood appreciated the support of friends, they also experienced guilt in regard to accepting assistance from others.

Theme #2

The assessment and recovery period was a traumatic experience and was the second crisis faced by Minot residents who were directly affected by the flood.

The period of time that water from the Souris River inundated the valley, while stressful, paled in comparison to the shock noted by residents as flood damage was assessed. Many anxious residents attempted to sneak into flood stricken areas before the ban was lifted in the hopes of providing early assessment of damage. Nick, a local journalist stated:

I think it was a Sunday morning when I was able to sneak into my neighborhood, which was one of the last areas to lose enough water to get into, and I had these big old clod-hopper boots on, and in the house was 3 or 4 inches of mud. There were smoke alarms going off in the neighborhood, and it was the only sound. . . . It was just dead.

Jody, a retail manager, noted a similar experience. She reported:

We did the same thing. We snuck in with Hilex jugs and spray. My husband is a reloader, and we had a lot of stuff in our basement when we left. We threw the first few jugs of Hilex down, and we heard popping, and got the heck out of there . . . didn't know what that was mixing with.

Shock of damage created a very stressful situation for residents of the Souris River Valley once the evacuation ban was lifted. While residents of the valley knew their homes were flooded, many held on to a hope that the damage was not as devastating as forecast. The initial re-entry proved otherwise. Art, a railroad worker said, "Oh, when we went in, we didn't even speak. We went to the back door and unlocked it . . . why we locked it before the flood, I'll never know . . . we had no idea." Alyssa, a stay-at-home military wife, recalled her first trip into her flood ravaged home.

My husband actually bought those face masks with the filters on the side, and he was like, trust me, you're going to need this. It was the end of July when we finally went in, and I remember trying to take the mask off to wipe the tears away, and he wouldn't let me."

The shock associated with flood damage created a very stressful situation for many valley residents. Milton, a local mental health provider, commented on how damage from the flood reminded him of "some inner city, like Detroit . . . just nothing in some of those homes" adding, "We drove around neighborhoods, and it was stunning. In one neighborhood, we had nine houses that were off their foundations, and that's when it really hit me."

Damage Assessment and Rebuilding

Homeowners were eligible for assistance from FEMA. While the amount of money provided by FEMA was helpful, it did not cover costs associated with rebuilding. Other forms of federal assistance were available, and will be discussed later in this chapter. The responsibility to rebuild fell on the backs of homeowners and landlords.

The ability to assess damage, plan for rebuilding, and seek assistance was directly related to an individual's ability to self-advocate. Many citizens had connections in the community before the flood and those connections provided a great source of assistance in planning and preparation, such as Elaine, an elementary teacher, who said "I need to be proactive and get things quickly done, so even when the waters were very high, I had somebody that I knew could clean my house, and I was calling contractors and trying to get them all lined up." Others were dependent on out-of-state contractors who responded to the crisis, while vulnerable populations, with little or no resources were left in the lurch.

Many residents were forced to delay decision making due to uncertainty of flood protection plans. Richard, a retired park district board member, said:

We spent a lot of time wondering, and you know . . . until we were actually able to get in and see what was really going on, we really didn't have any idea, and we look at and wondered . . . what are they going to do, and what can we afford to do?

Richard was not alone in his concern. Lelia, a delivery driver, stated:

It took us so long to dig in, and we didn't get to work on our home right away, because we didn't know what the plan was for that diversion

project, so we just ended up waiting. We waited until November of that year, until the city decided they were not going to do anything with the Ramstad Loop, then we fixed our home. We were kind of behind schedule and then had to make a last minute decision if we were going to fix up our house.

Not all delayed decision making was due to financial constraints or undetermined flood protection plans. Pete, a laborer, noted that he and his wife struggled with the decision making process stating:

We knew we wanted to stay there, but we didn't know which path we should take. . . . It was just hard finding people to commit to doing the work. We knew we couldn't do it ourselves. We both work, and we are both too busy, and we don't have the skills, so we finally decided that we would tear down and put [up] a modular home. That took a long time.

Many citizens, especially vulnerable populations, struggled with the planning and implementation of a recovery plan. Many were dependent on assistance from faith based organizations and charitable organizations. Lori, a single mother and special needs teacher, recalled:

It was just me, so . . . I don't have a husband, so it was just my son and me. My dad was at the end of his days, so he couldn't help. I just let my house sit until I could find somebody.

According to Pastor Pat, it was not uncommon to see houses just sitting, because "they were all in the same spot – they didn't know where the resources were."

A Flurry of Contractors

The city of Minot was inundated with out-of-state contractors immediately after residents were told they could return to the valley. These contractor firms provided a plethora of services to residents affected by the flood, often at outrageous prices. Sam, a retired laborer, recalls his experience with price gouging.

I had somebody come from Northern States Power, just so I could get a breaker box set up, and I didn't even get the bill for like 3 months, and I couldn't believe it . . . it was over \$600.00. He was there for about a half hour, left, and came back for another half hour, and bang, I got a bill for \$600.00.

Jordan, an elementary school teacher, had a similar experience, stating,

The only guy I can complain about is the guy who did my taping, texturing, and painting, who was excellent, but he screwed us out of money. He was too expensive, but at the time, I wanted it done. . . . I was at the point that I wasn't doing any more work.

Price gouging among local contractors was also noted. Not all residents were happy with the work that was completed.

Many contractors provided shoddy workmanship. Sally, an appliance saleswoman, found that while her out-of-state contractors were nice to work with, they did not provide quality work.

Ten thousand dollars later, I have to put money into my house because my pipes freeze. They put them against the outside wall, and they freeze; and

now, I have to tear out my kitchen cupboards, and replace it, and I have to tear up my flooring because it is separating. . . . It's really frustrating.

Concerns with fly-by-night contractors extended beyond price gouging, and sometimes into fraudulent practice. The level of damage was beyond what local contractors could handle, and the need to bring in outside assistance was evident, although not always positive.

In some instances, flooded residents, especially those who were vulnerable in some way, fell prey to fraudulent acts. Lori, a single mother and special needs instructor, stated, "I hired a friend of over 30 years, and he was nothing but trouble. He walked away with about \$23,000 of unfinished work." Despite attempts of city and state government to hold contractors accountable, Deb, a city official, stated that "Sometimes, they would rename their company and continue working, and put a new sticker on their truck." The level of damage was beyond what local contractors could handle, and the need to bring in outside assistance was evident, although not always positive. The grim reality of flooding, the shock and assessment of damage, and the stress of planning and rebuilding created an extremely traumatic experience for citizens of the Souris River Valley.

Summation of Findings of Theme #2

While the flood period was undoubtedly traumatic for valley dwellers, shock associated with damage caused by inundation of river water was astounding. Many residents were able to gather a network of friends, who volunteered and assisted with cleanup and repair. Residents who did not have many connections or were unable to find helpers were forced to hire others to do the work. The flood brought a plethora of

workers into the community, many of whom were guilty of price gouging and shoddy workmanship. At-risk populations appeared to be the most at risk of fraudulent practices set forth by contractors and service workers.

Theme #3

The FEMA Individual Assistance program, while expeditious in nature, received mixed reviews by Minot residents who were directly affected by the flood.

By early July, a team of FEMA constituents visited the city of Minot, North Dakota, to set up a base camp in preparation for flood recovery services. The first team was assigned to work with homeowners and renters who were directly affected by the flood. The process began quickly, and contact was made with residents affected by the flood even before water had receded from the valley.

Initial Contact With FEMA

FEMA arrived in Minot well before individuals were able to evaluate damages to their homes. Since valley dwellers were no longer at their residences, and were unavailable for an intake interview, FEMA workers met residents affected by the flood in various locations around town. Mary, an elementary school teacher, remembered:

It was kind of scary. We got a phone call saying . . . meet a guy in the parking lot of the Dreamland Motel . . . and I was like . . . I'm not doing a drug deal here people, and then you pull up and ask, are you FEMA?

Many residents expressed concern about this initial contact. FEMA caseworkers also seemed confused by this lack of trust. Jordan, an elementary school teacher, noted that a FEMA caseworker told him:

Everyone here wants to do it themselves, and they second guess those who are here to help from FEMA; but, I'll go someplace else, and there is a line of people two miles long, because they know that I have money, and I'm gonna give them money . . . so, this is weird for me.

Despite all, most Minot residents affected by flooding were uncomfortable with the initial FEMA contact, but grateful to receive this first level of assistance. The initial intake meeting was followed up by an on-site visit to ascertain damage to property.

Damage Assessment and FEMA

The initial damage assessment completed by FEMA was very important. FEMA provided up to \$30,200.00 in grant money per household to assist flood victims, depending upon amount of damage to each property. While FEMA capped the amount of payment a household could receive, this initial FEMA assessment of damage each house received was used by other governmental agencies that offered low interest construction loans to flooded residents. Ken, a retired railroad worker, was pleased with his assessment and could easily borrow funds he needed to repair his home, where George, a laborer, was disappointed, stating his assessment was “low, and limited to \$54,000.00.” Many flooded residents expressed discontent in regard to grant payments considering them low in comparison to what other households affected by other natural disasters in recent years have received.

Arlen, a school district employee, discussed a concern regarding equity in funding. “I think there is a lot of mistrust and distrust after some other disasters in the country, and I think there was a lot of abuse of FEMA, and I think it’s a different FEMA

after Katrina. . . . I've heard that from many people.” Art, a railroad worker agreed stating:

We heard a lot about how much money people got in Grand Forks, or after Hurricane Katrina . . . some people say up to \$160,000, but there was some discrepancy in how the money was divided up. . . . I mean . . . who determined who had lost X amount of money, and who had what amount of damage. . . . I don't get it . . . don't understand it . . . but, um . . . it was \$30,000 that got us moving on the flood repair.

Some also questioned the equity of funding at a local level. Lucy, an elementary teacher, discussed her frustration with damage assessment and subsequent funding by stating:

Most people got the flat \$30,000 . . . \$30,200 or whatever it was . . . and some people lived in a \$15,000 trailer and got that, or someone lived in a \$259,000 home, and they got \$30,200. If they would have said, you know, this is what your house is worth, and this is what you get . . . period . . . because money was tight and everything was jacked up, and the hardest part was just coming up with the funds.

Barb, a school secretary and owner of a modular home, expressed frustration over her inability to seek other low-interest loan opportunities because she did not own the land her home sat on. “I didn’t qualify for FEMA money, or SBA money, or any money from the state.”

According to Redekop (2011), of almost 4,200 homes, 471 homeowners in the Souris River Valley had flood insurance. Charles, a retired school employee, noted that

flood insurance “was helpful, but you had to jump through a lot of hoops with flood insurance, too.” Roger, a school district administrator had flood insurance, but had many struggles following his initial damage assessment. He received a \$30,200 payment from FEMA. Concerned about how his insurance might affect this FEMA payment, he called FEMA to discuss this with an agent. He was told that because damage to his house was so extensive, he would receive this FEMA money in addition to his flood insurance reimbursement. Still concerned, Roger placed the FEMA money in a savings account for safekeeping. Later, Roger described his anger when, “I got a letter from FEMA, stating that they did an audit, and that I accepted money that I was not entitled to, and there was a possibility of prosecution, saying that I lied in order to get this money.” Roger returned the money immediately. Like most other FEMA interactions, the attitude and compassion shown by a FEMA case manager appeared to make a difference in whether or not a resident had a good experience or a bad one with FEMA.

FEMA Housing

A portion of the FEMA rehabilitation program included installation of temporary housing facilities. The Souris River Flood of 2011 resulted in the third largest mobilization of temporary housing in the history of FEMA. FEMA trailers came in 2-bedroom and 3-bedroom models, and were assigned on the basis of household population. When possible, a FEMA trailer was parked on a property owner’s lot and tied in to existing water and sewer at that location. Lelia, a delivery driver, noted, “When those FEMA trailers came in, they were kind of the heroes of the day.”

Many flooded residents appreciated the move to a FEMA trailer, as most had been living in transitional housing since the flood crisis began, especially those who could

locate the trailer on their own property. Cheryl, a retired housewife, remarked, “Our FEMA trailer was like our little castle. . . . It was right next to the house, and it worked out very well for us.” On certain occasions, the lot size or shape would prohibit placement of the trailer at the home site. When this occurred, FEMA assigned residents to one of four FEMA parks in and around the city of Minot. Burt, an electrical inspector, stated, “It really wasn’t too bad, but there were some people who didn’t take care of their property, and a lot of people that moved out there figured it was a place to have parties.” The FEMA Housing Program, like other FEMA programs, was assessed on the relationship between FEMA workers and flood-stricken residents.

The Role of the FEMA Worker

Residents affected by floodwaters had differing opinions about FEMA workers. Janice, a para-educator, became frustrated when a FEMA worker told her that it was impossible to place a FEMA trailer on their property. When she questioned his decision, he stated, “You’re a woman, you just don’t know anything.” The same worker shoved Janice’s neighbor, and exclaimed, “Are you trying to tell me what to do?” Gertrude, a retired homemaker, was told by a FEMA worker that it was impossible to place a trailer on her property, and she would have to relocate to a FEMA housing site. She spoke with a FEMA official who did allow her to place a trailer on her property, but was met with resistance when the same worker showed up to install the trailer. Gertrude expressed her frustration.

It felt like you were homeless, and you didn’t have any grounding, and then he brought the trailer . . . this guy . . . I think he worked for the SS Army or something. He said, “Now, don’t forget, all of this is the

property of the United States Government, and if its damaged you will be liable for it” . . . and I thought . . . how stupid do these people think we are?

Others noted that many FEMA workers were very dedicated and worked hard to ensure flood victims were safe and secure in FEMA housing. One particular worker, Chico, was mentioned in several different focus groups. Chico was known as the “go to guy” by many area residents. He readily provided his cell phone number and was always available when problems would arise. When Elaine, an elementary school teacher, locked her keys in the trailer, Chico got her in. When Betty, a retired secretary, needed an ADA (American with Disabilities Act) accessible bathroom for her elderly husband, Chico assisted her in following the chain of command to see it would happen. When compliance was met, Chico told her, “You good woman – you stick up for your husband and got him what he needed.” Betty exclaimed, “That’s the kind of guy he was.” Chico made a positive impact on those he served.

The Experience of FEMA Living

Other residents whose homes were damaged by flooding noted that, in some instances, FEMA housing created additional stress. The immediacy of the housing crisis, coupled with the slow pace of production, meant that many larger families were placed in two separate trailers rather than one 3-bedroom model. Liz, a speech pathologist stated:

We got our FEMA trailers – two of them, because I have a son and two daughters, so my husband was in one trailer with my son, and I was in the other with my two girls. It was do-able; we just did what we had to do.

Anne, a daycare provider, also had two FEMA trailers on her property. She described her experience. “My husband and I stayed in one with our two daughters, and my dad and our son stayed in the other. They basically slept and bathed in that one.” Not all of the experiences in the FEMA trailers were negative. Rose, an elementary school teacher and the mother of two teenagers, stated:

We tried to make the best of it, but we learned to live closer as a family in the FEMA trailer with no cable television and only one television channel . . . two teenagers with no cable and no internet. . . . I laugh now.”

Summation of Findings of Theme #3

The FEMA Individual Assistance program received mixed reviews from Minot residents affected by flooding. While the expeditious response of FEMA was appreciated by many flood victims, many questioned the equity of funding in comparison to other natural disasters. The crisis brought many contractors to town. Some of these contractors appeared to take advantage of residents affected by flooding by raising prices or committing fraudulent acts. The poor, the elderly, and single mothers appeared especially vulnerable to corrupt practices. FEMA workers were on front lines of the FEMA movement. The actions of FEMA workers played a major role in the implementation of the Individual Assistance program, and shaped residents’ views of FEMA as an organization.

Theme #4

The FEMA Public Assistance program was a contentious process subject to intervention by political leaders before consensus could be reached and recovery could begin.

Things were rocky with FEMA's Public Assistance program from the start. In mid-July, 2011, FEMA's front man, Willie Nunn, announced that FEMA had teams on the ground working with schools and parks to facilitate the recovery process. According to Wayne, a school district administrator, though, in mid-July of 2011, FEMA Public Assistance had yet to provide a team to assist with flood recovery, despite the school district's attempt to make direct contact. Similar problems were noted by park district officials as well. Randy, a park district administrator explained:

We had issues right from the start in getting someone from FEMA to come meet with us, and for that team to get assigned, I had to scream and holler. It was about 6 weeks after they, a team assigned, that we got to meet with someone.

Unfortunately, things did not go much better when FEMA put boots on the ground in Minot, North Dakota. Richard, a retired park district board member, remembered being informed by Grand Forks park district employees that a consultant was needed to help the organization work with FEMA. Richard recalled:

We were told not to worry about it, because FEMA [had] a built-in pay structure to cover the cost of a consultant, so they even realize[d] that the structure must be flawed, and it is difficult to work through it on the FEMA Public Assistance side.

Initial FEMA Contact: A Need for Consultative Services

Minot Public School District administrators determined early on that a consultant would be needed to work through FEMA paperwork and bureaucratic red tape. Wayne, a district administrator, indicated the district hired a construction management team to assist the district in setting up portable classrooms to educate over 1400 displaced students. Wayne stated, “If it wasn’t for our construction management team, we would not have gotten 64 portable classrooms set up in less than 40 days.” The team assisted the district throughout the recovery and rebuilding phase.

Minot Park District personnel hired a consulting firm that provided assurances to garner every eligible dollar from FEMA Public Assistance. Randy, a park district administrator admitted the firm he hired did not always provide the assistance necessary to promote recovery. For example:

We kept the consulting firm on for 1 year, and we had an option of renewing their contract for another year. I was told by a FEMA official, in so many terms . . . I guess in uncertain terms . . . that if we didn’t renew our contract that things would get better, and I already had enough.

Randy added, “I’m not sure, in the end that hiring a consultant was bad . . . maybe, if we hired the right one, I think it would have been a different story.”

FEMA Public Assistance and the Stafford Act

FEMA Public Assistance is a government run program created by the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 2007. This act is a United States federal law designed to bring an orderly and systematic means of federal natural disaster assistance to state and local governments to help them in carrying out their

responsibilities to aid citizens. This act established the Presidential Disaster Declaration system, which triggers federal financial and resource assistance to eligible states and local authorities through FEMA.

Flood stricken public agencies have not always agreed with FEMA's strict interpretation of the Stafford Act. School district and park district administrators both felt that FEMA workers did not provide necessary guidance for local public entities to make appropriate decisions. When a local decision was not to FEMA's liking, threats of limited funding were offered. Wayne, a school district administrator, expressed his view of FEMA's interpretation of the Stafford Act:

I would say they were anything but clear. There was a point where it was almost threatening . . . that if you didn't do specific things, you could jeopardize your entire funding. We drug our feet on cleaning some buildings, and we looked at it from a common sense perspective. We asked . . . did it make sense to spend hundreds of thousands of dollars, if not millions, to clean two of the buildings that we knew had over 50% damage, and were eligible for replacement? And when they [FEMA] finally went to the buildings, they admitted that yes, they were in need of replacement. We basically got threatened by FEMA, and told that we were jeopardizing funding.

Wayne admitted frustration with this train of thought as he reflected on the words of one FEMA representative who said, "Sometimes, common sense doesn't fit into the equation."

Many were frustrated with an apparent lack of common sense and bureaucratic red tape that surrounded FEMA's Public Assistance program. Duncan, a local engineer, noted:

My perception was that they wanted to tighten up the belt following the Katrina disaster and some of the fraudulent things that were reported coming out of that; and in doing so, they became so restrictive, that instead of making these programs work for the people, they were making the people work for the programs.

Alton, a state employee, admitted, "I was not impressed, and that part of the problem was, as I recalled, is that you had changing opinions, changing decisions, and changing personnel." Seymour, who was also involved with the Grand Forks Flood of 1997 remembered a different FEMA, where Grand Forks had "One federal coordinating office who basically handled it all the way through." This was not the case in Minot, North Dakota, in 2011. In general, a situation of mistrust had developed. It appeared as if local agencies did not trust FEMA to provide the support needed to rebuild their community, and FEMA appeared to distrust public entities, and continued to judge their intentions as negative and undermining.

The city of Minot was not spared from frustrating relationships with FEMA. Seymour, a state employee, was frustrated that FEMA officials refused to allow the city to open existing mobile home parks for placement of FEMA trailers.

If they would have come in on Day 2 and removed all the damaged mobile homes so we could move trailers in, we wouldn't have needed all those FEMA camps. We had the mobile home parks set up, and they f*****

around with that for 2 or 3 months, and that was just a total FUBAR situation, and just the worst example of total incompetence in FEMA that I have ever seen.

FEMA also delayed funding for critical infrastructure repairs necessary after the flood. Alton, a retired city employee, expressed frustration with the slow pace of FEMA's response to recovery, noting there, "... was a number of issues that could have been handled that they deemed weren't an emergency any long[er], so you had to go through their process to get things done." Alton added:

One that sticks out in my mind was the guardrail along the river on 4th Avenue North. There was a guardrail that was tore out and pushed out when we installed the dike along there, and it was a dangerous situation, because if anyone lost control of their car, they could have easily went over that wall into the river and been killed. I wanted that railing up right after the dike was removed, but was told that I couldn't do that without going through the FEMA process.

City, park, and school district administrators often felt they were caught in a sea of red tape.

Intervention by Political Officials

Each public agency had its own battle with FEMA Public Assistance employees. The primary issue faced by Minot Public School District administrators focused on the relocation of Erik Ramstad Middle School, which flooded in 1969 and again in 2011. District administration felt it was foolish to rebuild the school at its existing location. In August, 2011, North Dakota's congressional delegation visited the Ramstad Middle

School. According to Wayne, a school district administrator, a FEMA official “accused the district of political grandstanding.” The slow process of recovery raised concern among the congressional delegation, and Senator John Hoeven asked FEMA to take another look at the Ramstad relocation request. Wayne added:

I know for a fact that there was an email that was circulated through FEMA and possibly NDDDES, talking about the Ramstad project. It said that they had already made their determination that Ramstad was not eligible for relocation to a different site, which, from a taxpayer perspective . . . it didn’t make a lot of sense to invest 40 million into a building that had been flooded twice in 42 years. But, since Senator Hoeven had intervened, they would come to Minot, have the meeting, and then send the letter.

The email caused great concern among the congressional delegation, and prompted a face-to-face meeting in Washington, DC, between Minot City, School District, and Park District officials and FEMA Director Craig Fugate. The working relationship improved after this intervention.

Hazard Mitigation – Like for Like, and Least Cost Alternatives

The Stafford Act requires FEMA officials to follow specific protocols in regard to reconstruction or repair of flooded structures owned by qualifying municipal organizations. During Minot’s 2011 flood, federal funding was essentially tied to assurances that public entities had taken proper steps to mitigate any future damage. Such action might include moving essential mechanical items, such as furnaces to an elevation higher than the flood crest, or building on a site with a higher elevation. Public

entities were also required to replace or repair damaged elements to a similar condition, or in other words, to meet a “like for like” repair of the previous structure. The park district struggled with hazard mitigation and like for like rulings from FEMA for a variety of reasons. First, hazard mitigation costs often exceeded the cost of repair to a structure. The park district also noted that like for like comparisons were not always a prudent decision. Randy, a park district administrator, noted “we even fought with them to upgrade electrical to current code – we pushed that and they finally agreed.”

FEMA also sought least cost alternatives to repair and replace affected structures. Under this program, FEMA would encourage public entities to consider least cost alternatives whenever possible. Wayne, a school district administrator, admitted that. He said:

Sometimes, we would try to use that for our benefit, saying . . . yes, we understand that like for like is that way, but if we do it this way, it will cost less . . . and they would consider it.

City, park, and school officials all agreed that intervention by political leaders was necessary to break down barriers and jumpstart the public sector recovery process.

Summation of Findings of Theme #4

The relationship between FEMA Public Assistance employees and administrators of public entities in the city of Minot was contentious from the start. Early on, FEMA stated they were on the ground helping local agencies recover, but this statement was contested by local officials. Local entities felt disconnected from FEMA officials, and a certain level of distrust was evident throughout the process. Consultants were hired by local agencies to help mediate differences between FEMA officials and city

administrators, and some consultants were more successful than others. Problems continued until North Dakota's congressional delegation intervened. A meeting in Washington, DC, with FEMA Director Craig Fugate was a turning point. This meeting paved the way for recovery to begin.

Theme #5

Crisis Management and Recovery is a collaborative process, involving federal, state, and local government, as well as volunteer services from charitable organizations.

The flood crisis began long before water left the banks of the Souris River on June 22, 2011. The city of Minot opened an Emergency Operations Center at the First District Health Building in late March. This site served as the Emergency Operation Center for Ward County from March – August, 2011.

Meetings were scheduled to discuss water levels, releases from Canadian dams, and rainfall totals in the Souris River Basin. As the potential for flooding increased, so did the frequency of the meetings. On June 20, 2011, Mayor Curt Zimbleman ordered the forced evacuation of 14,000 Minot residents, and ordered the Emergency Operations Center be open 24 hours a day during the pre-flood fight and flood period.

Hunter, a Red Cross employee, noted that “A disaster is basically chaos, and if you can control that chaos, you can basically control any situation.” Chaos was evident during the week of June 20, 2011. According to Alton, a retired city employee, the city of Minot scrambled to build a secondary dike along Broadway to protect north/south access through the valley. The school district worked with local contractors to extend the earthen levy around Erik Ramstad Middle School, and built a make-shift dike around Perkett Elementary. Meanwhile, residents of the Souris River Valley scrambled to move

the last of their belongings from their homes. Connected residents had friends assisting in evacuation, with trucks and trailers readily available to assist. The same was not noted among the elderly, the poor, or women who did not have connections in the community. Megan, a para-professional who was alone in Minot, recalled her last pre-flood hours in the valley:

It was just I and the three kids, so we didn't have a vehicle. We had a van sitting in the driveway for a year and a half, and it had been one of those discussions, husband and I thought, get it out of here, we don't need it. Anyway, my husband talked the boys how to put the car battery in, and then it started up (crying).

With less than 72 hours before water was expected to top the existing levy system, the city and charitable organizations did not have time to mobilize and provide assistance to struggling residents; the process of evacuation was left up to individual residents.

Assistance from Federal and State Governments

Financial assistance was provided to individual homeowners through various state and federal programs. First, homeowners were eligible for grant money from the FEMA Individual Assistance program. The \$30,200 provided under this grant program, in most instances, did not come close to covering the costs associated with recovery.

The Small Business Administration (SBA) also provided low interest loans, with a sliding scale to determine interest rates. Eligibility for a loan was based on an initial FEMA assessment. Interest rates were determined by an applicant's credit rating. Reviews of the administration of SBA loans were mixed. Richard, a retired park district member, stated that his experience improved when he was assigned a second case

manager, the first being ineffective. Others had a much different view of the SBA loan process. Tiffany, a special needs teacher, described the process as “nightmarish” stating, “You had to prove everything 45 times, and then I had to prove that I spent this and that . . . they were very unpleasant.” Betty, a retired secretary, expressed her frustration with the SBA Loan process, stating, “We changed the whole house to make it handicapped accessible . . . which SBA gave us a little problem at first, because they said we couldn't change the floor plan – they wanted us to redo it just as it was before.” Many participants expressed frustration over the bureaucratic red tape that was associated with the acceptance of this loan.

Other Funding Sources

The North Dakota state legislature came to the assistance of Minot residents by providing 1% Bank of North Dakota loans to flood victims, with a cap of \$10,000 per loan, and also provided sales tax rebates for items purchased to repair flooded property. Many residents stated the application process for a state loan was easy. However, miscommunication between state and federal agencies created problems for some residents who accepted a low interest loan from the state. Nick, a local media specialist, stated:

That's a screwed up mess there, and my son got caught in that. All the sudden, they told him that you qualify, but the money goes to SBA and State Representative Scott Louser, who was instrumental in getting that passed through the legislature, was incensed by that, and said it was the goal for it to be easy money for people to get their hands on.

Inter-agency battles at the local, state, and federal level often caused additional stress for flooded residents. In general, the state and federal response addressed a portion of the financial needs of flooded residents, but did not address social or emotional needs. Those needs were often addressed by charitable organizations and faith-based groups.

Charitable Organizations Take the Lead

In the early days of flood inundation, charitable organizations arrived on the scene to provide assistance. The Red Cross was quick to mobilize and open two evacuation centers, one north of the valley and one south of the valley. Within days, other organizations arrived to provide assistance. The assistance provided by these organizations became more evident as residents returned to the valley in order to assess damage.

It appeared that in some instances, lack of coordination caused confusion in regard to roles and responsibilities of various organizations. According to Seymour, a state employee appointed to assist flood recovery efforts, the city did not have a communications coordinator to disseminate information and take the lead in coordinating volunteer efforts. An offer was made by the governor's office to appoint a communication specialist, but the offer was rejected by the city.

This confusion was evident as the city began to re-enter the flood stricken valley to assess damage and begin clean up. Hunter, a Red Cross employee, stated the role of the Red Cross was to provide assistance during a disaster, but the agency "depends on other agencies for the long term needs of the people." Hunter also stated that communication between charitable organizations was also an issue, stating, "I think that

part of the problem was, we didn't understand what everyone else was doing during the disaster.”

Mike, an employee of the Salvation Army, noted that in his opinion, part of the struggle rested with differences in the missions of each organization. He explained, “I have seen the Salvation Army over here working while others are in front of the camera . . . there is a contrast.” Richard, a retired park district board member, agreed with Mike. He said:

My dad was an old World War II vet; and he always said, “If you wanted a cup of hot coffee close to the front, you didn't get it from the Red Cross, you got it from the Salvation Army, and I thought about that during our recovery. They were the ones coming around the street.

Richard was not the only one who appreciated services provided by the Salvation Army. Barry, a retired contractor, remarked, “It was great when you would hear them coming. . . . It was almost like the ice cream truck.” Raymond, a retired firefighter, agreed the Salvation Army played a huge role during initial stages of flood recovery. To Mike and Richard's remarks, he added:

When I would hear that truck coming through . . . you knew you would get a sandwich and a cup of coffee. We would be up to our ankles in mud, and we would hear the truck . . . and it was so nice to go out and get a sandwich, or coffee, or water, and sometimes hot meals. I remember getting pork chops, mashed potatoes, and gravy one night, and thinking it was the best meal I had eaten in a long time.

The Salvation Army did provide small grants to a handful of flooded residents who were in severe need of assistance; but in general, their primary service was providing meals throughout the valley. The Salvation Army paradox gained popularity throughout the valley in the weeks and months following the flood. The service that was provided was relatively simple – a thin sandwich on white bread, a bottle of water, or maybe a cup of coffee – but this act of kindness was so appreciated by flooded residents. Ryan, a physical therapist whose home and business was damaged, said, “To have somebody hand you a sandwich and bottle of water . . . that was such a morale booster.”

Faith Based Volunteer Assistance

Many faith-based organizations also came to Minot to assist flooded residents. The faith-based groups targeted at-risk populations and provided services when and where possible. Sally, an appliance saleswoman, was able to contact a Mennonite group to assist her elderly mother in the repair of her home. She stated:

My mom had her home done by the Mennonites, and they did such a wonderful job. I went to the house when they were working, and those people . . . they came from every direction, even from Canada, and at least 60% of them were women, and they were in their dresses, and they were sheet rocking and nailing. They would stay for two weeks, and another group would come . . . they were a most blessed group.

Richard, a retired park board member, noticed the popularity of faith based groups, and commented:

My son came over every day to help; and one day, he told me, “I’ve taken a survey on the street. We have a Jewish group here . . . Mennonites here .

. . . Baptists, Catholics, and Lutherans . . . and I think there was another one. There were six different denominations working on just our Central Avenue – all volunteering their time.

The primary issue was not attracting volunteer labor; the issue was coordinating efforts of volunteers to ensure those who most needed help – those who were most vulnerable, were able to get the assistance they needed to recover.

The Inspiration of Hope Village

Pastor Pat recalled the day that he received a phone call from an out-of-state Lutheran church. The group was excited to come and assist the residents of Minot. They changed their plans when no interim housing was available within a 45-mile radius of Minot. Pastor Pat, along with several members of the local ecumenical association realized that volunteer labor, while appreciated, was most beneficial when targeted to specific individuals who were in desperate need of assistance. The idea for Hope Village was born . . . an organization that became an umbrella for nine different organizations and their affiliate state organizations.

Pastor Pat recalled early on in the crisis that volunteer help wasn't always placed where it was most needed, noting that:

Right after the flood, I was involved with immediate conversations of what we could do to begin putting things back together. As that was developing, it was obvious that nobody was addressing the issue of where volunteers might stay, and not only that, but who will manage volunteers, who will set up jobs, and who will organize this. There are people who are a tremendous resource in the Christian church throughout the United

States to help in time of need. All of this was happening, week after week, and nobody was addressing it at all.

The Hope Village concept was based on capitalizing on the strengths of several faith-based organizations. Minot's ecumenical organization recognized that each church response group had specific core strengths. For example, the Methodist church had the best case-management system, but the Lutheran response team was the most efficient in construction management and planning. Hope Village was opened in April, 2012, after 10 months of planning and preparing.

The concept of Hope Village was relatively simple; it was designed to serve as a one-stop shop for flooded residents who were desperately in need of assistance. Pastor Pat recognized the greatest strength of the Hope Village concept was the case management approach to flood recovery. He stated:

We had access to all of the FEMA case management records, so we could take that financial information, the resources they could provide, and we could track those with each family. So, let's say Bob and Susie, in order to get them back into their house, needed \$62,000. They have \$30,000 from FEMA, they have \$2,000 of savings to spend, and they can access \$10,000 from the Bank of North Dakota. That wasn't enough money, so the case managers would look into other resources and put together a package. Everyone went through the same case management system, and that was helpful.

Pastor Pat added that there was "very little duplication of services, so we maximized every dollar that came in," and "Our goal was to victimize the victims less." The Hope

Village project proved effective in providing a collaborative link between nine faith-based organizations, and utilized a common case management system to ensure assistance was provided to the most vulnerable residents.

Summation of Findings of Theme #5

Federal and state assistance most often offered a financial remedy to homeowners who were negatively impacted by the Souris River Flood of 2011. Social and emotional needs of victims were often met by charitable and faith-based organizations. A lack of direct communication from the city often resulted in role confusion and turf wars between different organizations. Many faith-based organizations came to Minot to provide assistance, but a lack of organization and structure prevented the assistance getting to those who most needed it. The Hope Village concept was developed to get help to where it was most needed. The Hope Village team pooled resources and provided assistance to many individuals who did not possess skills or financial resources necessary to rebuild and recover.

Theme #6

Long-term effects of a natural disaster span far beyond the physical recovery of homes, businesses, and school buildings. The Minot Public School District community was drastically changed as a result of the Souris River Flood of 2011.

Before the devastating Souris River Flood of 2011, valley residents measured river flooding in comparison to a flood that occurred in 1969 (see Appendix A). The 1969 flood, followed by high water levels in 1974, 1975, and 1979 prompted city, state, and federal officials to develop a plan to manage water flows in the Souris River Basin, especially in heavily populated areas. According to Alton, a retired city official, this flood work was directed by the Army Corps of Engineers, under the direction of their

lead Minot manager, James Ruyak. Through these years, a comprehensive flood plan was initiated. This plan included the development of an enhanced levy system through the city of Minot to handle up to 5,500 cubic feet per second of water, as well as the purchase of water storage space behind three Canadian dams. The Lake Darling Dam located north of Minot also provided flood protection for the city of Minot, and was a tool used by the Army Corps of Engineers to manage the river system throughout the year.

In 1995, a flood protection system was in place that provided flood protection for the city of Minot to a level that surpassed 1969 levels. This protection prompted FEMA to remove the Souris River Valley in Minot from a “flood plain status.” Residents were no longer required to purchase FEMA Flood Insurance when seeking a mortgage.

According to Alton, a retired city employee, less than 400 homeowners in the Souris River Valley carried flood insurance in 2011.

The Cause of Flooding

Within a relatively short period of time, residents of the Souris River valley lost their sense of safety and protection. The 2011 flooding of Minot created an environment ripe for speculation as to the cause of the flooding, as well as claims of mismanagement of the river system. Many residents felt the flood was essentially a man-made event, and was the direct result of poor management throughout the Souris River Basin. Other residents scoffed at the government’s claim that a 7 inch rainstorm at the headwaters of the Souris River in Canada resulted in the massive flood that inundated Minot.

Raymond, a retired firefighter, questioned those who blamed extensive snowpack and spring rainfall.

It flooded worse than it ever had in Minot, even with all the dams put in place to protect us. I think it has a lot to do with management – managing the flow and trying to determine how much water is in the system, and knowing how much the system can handle.

Once evacuation was complete, and the water had toppled the existing levy system, residents had time to reflect on causes of the flood. This discussion led to many negative theories in regard to river management, and in some instances, very pointed claims against the Canadian government, the Army Corps of Engineers, and the United States Fish and Wildlife Service. For many, anger became the catalyst that prompted residents to find an individual or entity to blame. Isla, an elementary school teacher, said, “I was mad for a long time, but it really doesn’t matter. When I heard my kids repeat some of my statements, I said . . . enough of that.”

The City Response

The situation in late June went from bad to worse. Alton, a former city employee, recalled the pandemonium that began on June 20, 2011.

We had beat the flood three or four times, and we had gotten the word that the river was going to 11,000 cfs, and in about 3 days, we were ready to do that. . . . The next day, we got the call that it was going to 15,000 cfs, and I said . . . that’s it – we can’t do that in 3 days – we are going to have to dike as much of the infrastructure as we can and save Broadway. The next day, we got the prediction for 20,000 cfs, and then the next day, it went to 24,000 cfs. Six hours later, it went to 30,000 cfs.

The situation was dire, and the city was forced to make crucial decisions to save city infrastructure within a very short period of time. In the aftermath of hasty decision making, there were bound to be winners and losers.

Many residents questioned the wisdom of constructing a secondary dike to protect Broadway. The dike also protected homes in northeast Minot from extensive flood damage. Alton, a retired city employee, stated the secondary dike saved over 600 homes, the nursing home, and two schools, but others had negative opinions about the dike, and some assumed water levels in west Minot were higher as a result. Liz, a speech pathologist admitted, “I do think that the main dykes probably did flood a lot of people’s homes.”

Residents along the northern inundation zone were also frustrated by a dike that was built along University Avenue to protect Minot State University. This structure was built by Minot State University, and was not part of the city’s protection plan. The university did receive ground water damage, but buildings north of the inundation zone were protected from flooding. Tiffany, a special needs teacher and single mother admitted, “It drove me crazy . . . to see them watering the green grass 2 days after the dyke went down. I thought . . . well really, is it that important that you are watering your grass? I still drive by, and I get angry.”

Post-flood planning and ideas for future flood protection also created a level of concern throughout the valley. Immediately following the flood, the city contracted with a local engineering firm to design an enhanced flood protection system through Minot. Discussions of where to build flood protection structures resulted in some delayed recovery for flood victims, such as Lelia. She said, “We ended up waiting. We waited

until November of that year, until they decided they were not going to do anything with the Ramstad Loop.” Suzanne, a city employee, was also in a holding pattern due to the potential flood protection project. She noted:

We looked at the maps, and our house was in a buy-out area, and then it wasn't, and then it was . . . and I can't go back there . . . to build our house, and then they come back in 2 years and want to buy our house, or maybe in 10 years. What if they run out of money, or change their minds?

Suzanne also expressed concern that, as a city employee, she was treated differently after co-workers realized she was in a potential buy-out zone. “I was being excluded from meetings, not because I was a potential risk, but in some ways, I probably was.” This uncertainty of flood protection and future buy-outs created a high level of concern for many residents, and some residents whose homes were damaged by the flood felt the city had done little to reassure citizens about future flood protection in the valley.

Many participants expressed concern that neighborhoods have changed drastically since the flood. Milton, a Red Cross worker, noted that most of his neighbors did not return after the flood. Their homes are now rental properties. The problem of ad hoc rental districts was exacerbated by oil exploration in western North Dakota, and a drastic increase in population in the Minot area. Charles, a retired school administrator, noted that not all loss was financial. He explained:

You asked me what the most special thing that we lost . . . and I forgot to mention it . . . it was our neighbors . . . our next door neighbors moved to West Fargo. We did everything together . . . we would barbeque together, sat on the deck together . . . and had coffee in the summertime. They were

dear, dear friends, and they are struggling in West Fargo, because they are not here – where their friends are . . . and so, they aren't making friends where they are.

Clarice, a social worker, agreed that the loss of the neighborhood was devastating:

It changed our neighborhood all together . . . and when I was down there one day, and all the sudden, two cop cars pull up, and they are . . . both ran into the house, and it's like 11:30 in the morning. My daughter tells me it happens often, and that there is a sex offender that lives there.

The City Response to Recovery

Many participants expressed concern in regard to the slow progress made by the city of Minot. Patrice, an elementary school teacher and flood victim, noted:

The city hasn't moved fast enough, and we still don't know . . . we just went to the latest meeting, because we are slated to be bought out, but we are on Phase 4 - Year 2018 . . . so it will be many years before they get all these stages done, so we could all flood again.”

This thought was reaffirmed by Raymond, a retired firefighter, who said he has heard “a lot of discussion about recovery and flood diversion projects . . . but not a lot happening . . . and we still have a lot of people sitting in the valley without a lot of direction.” The frustration noted by valley residents extends far beyond enhanced flood protection.

Micah, a small equipment operator, summed up the general sentiment of many valley residents stating,

Minot has done nothing to prevent this from happening again; Minot and the government. . . . If we end up with a bad winter . . . the only thing

they have done is taken dikes down. . . . They haven't done nothing else, and they can't make a decision about anything. . . . I am very unhappy about it.

Many dismayed residents discussed the delayed process of clean up and repair in the valley during the post-flood period – most notably, the repair of traffic signals on busy streets. Duncan, a local engineer, stated:

Again, we are going through this long, drawn out federal process so we can get money to fix traffic signals. The damage was extensive, don't get me wrong, but we are talking about a pretty easy fix – traffic signals could have been up and running [in] one-third of the time, if we would have just rolled our sleeves up and pieced this back together. It's a frustrating thing – our dependence on outside funding. I get it . . . nobody likes paying taxes. But, sometimes we aren't quantifying the opportunity cost of what the cost of waiting really is, and it's kind of unfortunate.

Seymour, a state employee appointed to assist with disaster recovery, noted, “The riverbanks are a mess, the neighborhoods are a mess, and I realize that you can't do things without money, but with the city, the attitude was, we will only do it if someone pays us for it.” In addition to these issues, over 350 damaged homes remain untouched in the valley. These homes, penned as “zombie homes” by residents, have created another issue for valley dwellers.

Zombie homes have created a blight in the valley, and have proven to be a point of frustration for residents who have fixed up their homes. Cindy, a stay at home mother, commented, “We still have a zombie house in our neighborhood. We used to look out

and see a beautiful yard, but now all we see is a zombie house.” Milton, a local mental health professional, expressed concern that these damaged homes do little to build morale in flood ravaged areas, stating, “I think the community response, is even more important, and that is what I see failing in the city government. Allowing these things to persist. . . . I know that property rights are important, but these houses are goners.” The zombie home issue continues to this day.

Planning for System-Wide River Management

At the time of this report, city, state, and government officials continued to work on an enhanced flood protection plan utilizing a system wide approach. This plan included consideration of farmers and ranchers throughout the Souris River Basin. Many residents have expressed frustration over the management system for the river in use at the time of this study. Nick, a local media specialist, noted the current management model has appeared to consider constant flows in the river system, rather than the mitigation of potential flooding and planning for unusual weather events, such as heavy rains. Nick had faith that a new international agreement would be reached, stating, “The ball is slow in rolling, but it is rolling.” The city has continued to debate the possibility of an enhanced flood protection project, and has continued to work with state and federal officials to access funding.

Summation of Findings of Theme #6

Damage caused by the Souris River Flood of 2011 was extensive. Many residents have expressed concerns that the city of Minot may have been negligent in their response to the disaster. Others commented that Minot’s city council has expressed little desire to invest local funds in the recovery process. Other residents are angered by the delayed

development of an enhanced flood protection plan, and fear it will flood again, while others debate whether or not to invest in the repair of property that may eventually be bought out as part of the flood protection project. Some homes have been sold, and are now rental properties, which have changed the ambience of neighborhoods that existed before the flood. While many residents worked diligently to repair their homes, many houses have remained untouched. These flood damaged unrepaired homes have become known as zombie homes, and have caused a great deal of concern throughout the valley.

Theme #7

Effective communication has been lacking during all phases of crisis and recovery, and has created a layer of confusion and mistrust throughout the Souris River Valley.

Effective and accurate communication is crucial when dealing with any type of disaster. Milton, a mental health professional, stated that when dealing with communication during a crisis, “Consistency is the key – you don’t want rumors to start or for people to hear different things.” Milton added, “You can’t control how people hear it or interpret it, but you want people to hear a consistent message, that is delivered in a process that people can understand.”

During the pre-flood and evacuation period, the city of Minot held regular press conferences to notify people of evacuation zones and to provide updates on anticipated water levels. The press conferences were detailed and informative, but were offered at a specific time of the day, and were broadcast through a limited venue. At the time of this report, Minot citizens lived in a digital world and communicated in a much different manner than was being used to disseminate information. Many participants noted that communication efforts during the pre-flood, evacuation, flood, and post-flood periods

were often muddled and incomplete, leaving citizens with a desire to seek information from other sources, including social media.

Communication During Pre-Flood and Evacuation Periods

Before the flood and during evacuation, the city of Minot had daily press conferences at 2:00 PM. The purpose of these press conferences was to deliver specific and timely information to citizens in regard to evacuation and flooding. According to Nick, a local broadcast journalist, these press conferences were aired live on local television and radio stations. The Minot Daily News also provided print copies in their daily addition, and provided updates via the Minot Daily News website.

In general, participants felt that Mayor Zimbleman was an excellent spokesperson for their city. The relationship that Mayor Zimbleman and city personnel had fostered with citizens over the years made a difference, and their communication caused valley residents to take heed. Milton, a mental health professional, commented:

When Alan Walter, the City Public Works Director, came on, and when he said, “We are going to try to save the city,” it hit me about as much as the sirens. I said, “Oh, s***!” . . . I know Alan, and he is as nuts and bolts as they come, and I’ve always relied on him being very frank with us.

Ryan, a local physical therapist, had a similar view of General Sprynczynatyk of the North Dakota National guard. Ryan said, “I knew that what he said was the truth, and he was going to help us as best he could, and for lack of any better words, he wasn’t going to take no s*** from anybody.” The communication in the early stages of the flood crisis was considered by most participants to be thorough and reassuring.

Communication and River Management

Many participants had a very different view of communication in regard to river management. The researcher noted a lot of confusion about the role of Canadian dams in regard to flood protection, as well as confusion in regard to international reporting of water levels and rainfall in the Souris River Basin. This confusion often manifested through social media outlets, and in some cases, inflamed rumor and innuendo throughout the Souris River Valley.

Nick, a local news reporter, became concerned about rising water levels in Canadian reservoirs, and decided to take a trip to Canada to assess the situation. He was very concerned at the amount of water that was held behind the reservoirs. While visiting with a contact in Canada, he was informed that the Saskatchewan Watershed Authority had planned on releasing additional water from the Alameda and Rafferty dams that day. Nick remembers calling Kelly Hogan, who was in charge of the Lake Darling dam to say, “I heard that the levels and releases were increasing to 7500 cfs, and he was at 5,000 cfs. He couldn’t believe it. I found out about it before he did.” Meanwhile, the Army Corps of Engineers continued to say they were “comfortable” with water being released at dams up and down the river including Canadian dams.

Duncan, a local engineer, also expressed concern over river management and believed part of the problem rested with a lack of communication among key players along the river system. He stated, “Subject matter experts were too slow in getting their stuff together, and part of it is related to this bureaucratic web that we have to travel through when we are dealing with one state, two provinces, and two different countries.” Duncan added:

The chain of command within our system isn't that responsive. So, when we start talking about revised flows, and whether or not the Army Corps of Engineers are going to open the gates, there is kind of a custody of the information and how that information travels from one agency to the next, and eventually passes down to the operators on the ground. By the time that chain of events happens, the people on the ground already know what is happening, and it's because of social media, cell phones, and the internet – all this real time data is out there. So, that chain of custody among all those agencies needs to be significantly shortened.

After the initial shock of the flood wore off, Minot citizens became dismayed with communication coming from city hall.

Seymour, a state employee assigned to assist with flood control, expressed concern about the city's lack of effort in communicating facts with its residents. He explained, "We [the State of North Dakota], almost on Day 1, urged the city to have a communications director, and the city didn't want to do that." Seymour added, "We wanted somebody on staff to coordinate communication, and it didn't happen. So, we had press conferences, but we wanted a website and all these things that provided immediate information, but there was a reluctance to do that." Without real-time reporting of flood conditions, individuals were left to their own devices to glean needed information from unofficial sources.

Many residents turned to the local CBS affiliate for 24 hour press coverage during the immediate crisis. Jim Olson, the local CBS news director, was hailed by many as a hero and savior. Leon, a retired bricklayer, commented, "He told us what was going on

with those Canadian dams, and we didn't hear a lot of information from anybody else.” The 24 hour coverage served as a beacon for many residents who hoped to catch a glimpse of their home, business, or school. Tiffany, a special needs instructor, reported that she “had the television on for 24 hours a day, and I never thought I would know so much about water levels.” Milton, a local health provider, indicated that Jim's coverage and personal interest stories during recovery were helpful to those affected by the flood.

However, not everyone was appreciative of 24 hour news coverage of the flood. Hunter, a Red Cross employee, indicated that emergency shelter residents would often become distraught when they watched the news. Holly, a former city employee, said, “My husband was the opposite. . . . He was at the house every day, and would say, ‘Turn it off; I can't watch it.’”

Another popular venue for following flood news was Facebook. Many participants reported that Facebook and other forms of social media were excellent methods of gleaning information in regard to the flood. Ryan, a physical therapist, reported that Facebook, “not only shared information, but kind of connected everyone.” Liz, a speech pathologist, admitted, “I wasn't a big Facebook user [before the flood], but everyone started sharing stories and pictures about our neighborhood.” Others expressed concern that Facebook and other social media outlets often created panic and promoted rumors and innuendo.

Bonnie, a day care provider, noted, “On the negative side of social media, rumors spread way quicker, and they still do . . . and that's where the Spring anxiety starts . . . we start hearing that Canada got record amounts of snowfall, and we are going to flood again.” Pastor Pat found that when people are anxious, they seek information, regardless

of the source. He cited an example of people on Facebook describing extreme overcharging for bottled water at Superpumper on North Hill of Minot, stating that Facebook patrons had reported, “They [Farstad Oil] were charging double for a case of water, and they couldn’t combat it.” Nick, a local reporter followed up on the story, and found that the price charged by Farstad Oil was no higher than before the flood, and reported, “It was a convenience store, and that’s just the way it is.”

Other rumors were more pointed, and aimed at placing specific blame on individuals, organizations, and governmental agencies. Leon, a retired brick layer, angrily remarked, “Those Canadian dams were built as flood control dams, and they are now used for recreation, and those people have big, fancy cabins there as well.” Ken, a retired railroad worker agreed, “It’s all about recreation and money.”

Alton, a former city employee, remembered differently. He recalled that the United States government purchased storage behind the dams in Canada. Nick, a local news reporter, agreed with this assessment. However, the city did not have anyone in place to dispel these rumors, or to present factual information. This created a quagmire within the city, and promoted the belief that somehow, the city was hiding information from its residents.

Summation of Findings of Theme #7

Communication problems existed well before water left the riverbanks on June 22, 2011. While many residents respected and held Mayor Zimbleman and the city leaders in high esteem before the flood, they became frustrated by a lack of real time communication coming from the city after floodwaters arrived. This lack of communication resulted in residents seeking other sources of information, such as 24

hour news coverage, and social media outlets. North Dakota state officials encouraged the city to appoint a communications director, but this did not occur. As residents continued to monitor flood activity through social media, rumors began to spread. With no official voice at the city level to respond to these rumors, many residents became disenchanted with city government and developed a sense of distrust in city leadership.

Theme #8

The Souris River Flood of 2011 negatively affected survivors; negative effects have included social, emotional, and financial hardships.

Minot's flood fight began months before water left the banks of the Souris River. During this time, residents braced for the worst and hoped for the best. Residents were forced to evacuate their homes on May 30, 2011, and were allowed to move back in on June 6. At this point, many felt the city of Minot was past the point of danger. A heavy rain at the headwaters of the Souris River on June 18 changed the outlook back to one of flooding, and altered the lives of many Minot residents forever.

The Souris River Flood of 2011 and subsequent years of recovery have created a stressful situation that has impacted the social, emotional, and economic well being of residents throughout the Souris River Valley.

Emotional Effects of Flooding

Emotional effects were noted in participants throughout focus groups and interviews conducted in this study. In general, participants noted that smaller children appeared to handle the stress of evacuation and rebuilding better than older children. Pamela, a Head Start teacher, noted that children appeared to do a lot of role playing to cope.

I had a little boy that kept stacking up piles of paper, and I would ask what he was doing. He said he was sheet rocking his house. Then, he would tear it down and say, “Now, I’m gutting my house.”

Marion, a pre-school teacher who worked with 3- and 4-year-olds, commented, “Coming back to school that fall, there was a lot of emotional stuff. . . . They knew something was wrong, yet they didn’t.”

Elementary school children appeared to accept the stress of flooding fairly well. Ken, an elementary school principal, commented that his own children were fine during the evacuation period, primarily because the family continued with baseball and other regular summer activities. Jake, an elementary physical education teacher, noted, “There were no big blow ups at school. There was too much other stuff going on in other places.”

Many parents were very complimentary of school recovery efforts, stating they appreciated the normalcy school provided for children once the school year started.

Bobbi, an elementary school teacher, noted a unique experience at Christmas in 2011. She reported:

Most of our families were in FEMA trailers or with relatives or friends . . . and, I remember that on the last day of school before Christmas vacation, we were lined up to go, and I had seven students who were just sobbing. I thought, “It’s Christmas vacation. What’s wrong?” But, then it hit me. . . . School was their normal – their routine. . . . They didn’t want to go on vacation; they wanted to be at school. It made me think . . . they are so comfortable here. Even if they are in portables, they are comfortable here.

Liz, a speech therapist, agreed. “We had familiar faces; we gave them a different environment . . . the teacher, the secretary, the cooks, the custodian . . . everyone was the same, the principal, too. It was a different environment, but I think they handled that pretty well.”

Many teachers often noticed that school aged children were often privy to adult conversations. Patricia, an elementary school teacher, recalled many conversations that her students would share.

They knew everything that was going on. They knew when the FEMA trailers were coming in, and they would ask . . . “Did you get your trailer yet?” And they knew all about that. . . . They knew about staying in hotels . . . “Did you get vouchers to stay?” “Did you have to stay in your camper?” . . . fourth graders, and they knew all this stuff. . . . I just thought . . . I thought it was sad . . . and my own kids, they knew way more than I thought they needed to.

Many parents noted that stress at home was more evident, and was manifested in the behavior of their children.

Ellen, a stay at home mother and minister’s wife, noted a definite change in her school-aged daughter’s behavior and general demeanor. Ellen stated:

She was a very cheerful little girl, and she would just come home and play with her dollies. We finally found her dollies and brought them back, and I set them up in the basement. She said, “Mother, I don’t have my imagination anymore,” and she couldn’t play with them anymore.

Alyssa, a stay at home military wife, commented that her daughter was angry after a play date with a friend and told her mother, “She has such a pretty room, and I want mine back.” Alyssa said that it was hard to watch her daughter go through that, because before the flood, “She was a happy little girl.”

Of all age groups, teenagers appeared to have the most difficulty dealing with the adversity and loss resulting from the flood. Sally, an appliance salesperson, stated that her daughter struggled during the transitional living period. She did not have a driver’s license, and was often separated from her friends. Sally stated, “She got to the point that she didn’t even want to be in there [school], but she wanted to graduate. We talked to the counselor, and went over it, and we decided she would go to the alternative school.”

Sally added, “She is still there, and she will graduate next year from Souris [River Campus].” Betty Jean, a swim coach, recalled a day when one of her female athletes asked to leave early. The girl was crying, and when asked what was wrong, she said, “I just don’t have [a] place.” Betty Jean noted, “That was the day that I realized that she didn’t have a place, and many didn’t.”

Pastor Pat noted, “There was a resiliency among younger children that was not displayed in older children.” Pastor Pat also noted that teens tend to be in a life stage where it’s “all about me,” and therefore, they tend to struggle with the stress of such a disaster.

Adults were certainly not exempt from emotional issues during the flood. These issues were often exemplified through anger and tears. In some cases, adults found humor in the midst of crisis. Megan, a para-professional, joked in her focus group that she was responsible for the flood.

As the school year was winding down, I had my bible out, and I usually make a few goals. On my list was to clean the house really well . . . and I put it too close to my prayer list. I should have been more specific on how God should answer that prayer.

Richard, a retired park board member, recalled an afternoon when the garbage crews were coming around to gather damaged items off the curb. Richard explained how one worker came up to him and said:

“You know, this flood is democracy in action – this is the true equalizer.”

I asked him what he meant, and he said, “Look at this . . . you have a pile of s*** outside your door, and your neighbor has a pile of s***.” I thought about that. There were my \$10,000 cabinets that we were so proud of, and my neighbor down the street, he might have had \$800 cabinets he bought at Menards. But at the end of the day, it didn’t matter, because they were all s*** and all hauled to the street. I laughed about it, but I guess it did make a lot of sense.

Some residents affected by the flood admitted to self-medication as a method of coping with stress. Liz, a speech therapist, admitted, “I was pretty much self-medicated with alcohol and Lorazepam. I didn’t have to drive, thank goodness.” Tiffany, a special needs teacher, and Carol, a retired teacher, admitted they both drank a lot during that time. Milton, a mental health provider, indicated that self-medication, while not recommended, is a fairly common, short-term reaction to crisis.

Mental Health Interventions

Very few research participants volunteered information that would indicate they accessed mental health services as the result of the flood. Milton, a local health care provider, indicated that many mental health providers were either flooded at their place of business, or flooded at their home. Milton adopted a unique style of therapy as a result of the flood.

For me, it was almost paradoxical, and I went away from my usual therapeutic thing and aimed more towards what I could do to help the person get up in the morning and that seemed to work in individual and group settings. That is what they were primed for more.

In short, Milton believed the best therapy was getting people to start moving, to grab a hammer and pull nails, or to clean up damaged sheetrock. In a sense, Milton proclaimed the most important step in recovery is regaining a sense of individual control.

Pastor Pat had a different view of an individual's desire to gain self-control. We worked with some people, who, the more they worked, and the more nails they pulled, the more they struggled. We worked with that segment of folks who were largely alone and under-resourced. We visited with one man in a wheel chair. His wife was in the hospital undergoing cancer treatments, and he would put a piece of sheetrock on his wheelchair, and he would roll in and try to put it up on the wall. Now, there is a guy who, there is a benefit to be at work, because it develops the notion that "I am not going to let this beat me"; but at the same time, he was dealing with such overwhelming belief that he will never get this done. He hears

people say, take one step at a time, but he takes a step, and there is another seven more. So, he is obviously at risk.

The emotional stress of the flood and subsequent recovery period was very difficult for residents affected by the flood to cope with, especially for adults who were vulnerable, and who had access to limited resources.

Social Effects of Flooding

Flooded residents also struggled with social issues following the Souris River Flood of 2011. Many residents in the midst of recovery were forced to succumb to a changed lifestyle, and in many instances, experienced a loss of identity, not only in person, but within the community.

Personal Loss

Personal loss is not easy to define. Focus group participants spoke in detail about their greatest personal losses. This loss was not financial in nature; it was the loss of personal items that held a specific meaning or significance in each home. Mike, a Salvation Army employee, discussed this sense of loss. “We see people at one of the worst moments in their lives. Maybe they lost family heirlooms, pictures, or personal items. I have not seen many people crying over the loss their television.” For the residents of the Souris River Valley, personal loss came in a variety of forms.

Jackie, a para-professional, recalled a trip to Menards just as staff were putting Christmas ornaments out:

I am not a crier, but I cried when I saw those ornaments. It made me flash back to looking at the curb full of stuff, and seeing my ornaments smashed and broke . . . the ones my kids made . . . just crumbled, and the lady at

Menards looked at me, and asked if I was going to be okay, and I said, as I cried . . . “I’ll be fine.”

Jackie remarked that the most beautiful ornaments could not replace the memories she recalled when hanging those hand-made ornaments.

Clarice, a social worker, commented on the loss of generations of family heirlooms.

Half our house was crawl space, and both our parents are deceased, and we had a lot of the memorabilia stored down there, including family pictures that dated back to the 1800s. We forgot all about that area. The first night we were back in the house, they started hauling that stuff up . . . and the smell . . . and somebody said to freeze them, so we did. We froze them for as long as we could, but that smell. All of our pictures were ruined, including our baby books.

Clarice struggled as she recalled these pictures were left in her care, and now were destroyed.

Burt, an electrical inspector, reflected on his long time home in the valley. I lived in my home in the valley for 34 years, so my kids grew up in that house and went to school across the street at Lincoln. We lost all of that. My daughter, she planted a big evergreen . . . well, it was a little evergreen she got one Arbor Day, and we planted it alongside the house, and it was a huge blue spruce. It was just beautiful, and I told my wife, “This year, we’re going to decorate that tree,” but it never came to be.

Burt explained that the tree died as result of the flood, and his home was on the buyout list. These were all items that sparked a memory, and now are gone.

A Disconnect Between Valley Dwellers and Hill Dwellers

The immediate reaction of Minot residents to those who were flooded was positive. Friends and families of those who were directly affected by the flood spent many hours assisting in evacuation, and in many instances, offered their homes to families during the immediate crisis. This assistance carried into the early phases of recovery, where volunteers came to assist residents in mucking out and sanitizing damaged homes. As time went on, many participants noted a disconnect between residents who were directly affected by the flood, and those who were not. Jody, a retail manager noted:

Not long after the flood, and I work at the mall, and I heard people say, “Aren't you glad the flood is over?” . . . its like . . . it's not over, for us the flood is just starting . . . the water is gone, and that's how I felt . . . was a lot of community involvement, and then people had the belief . . . I'm just glad it's over.

Others noted the stark difference in the city of Minot following the flood. Richard, a retired park district member, commented:

You would be out of the valley and things were green and lush. When you drove down in the valley after the water left . . . it was a s***hole. . . . It smelled. The grass was dead. The trees were dead . . . it was just a s***hole.

Duncan, a local engineer, agreed:

“I think that this group – the two-thirds or three-fourths of Minot citizens who were not affected includes some of our elected officials, and it’s not on the forefront. They are more concerned about zoning regulations, or a Walmart that is being proposed on North Hill.

Much of this frustration was not necessarily aimed at residents of Minot, but rather political leaders within the city. Ken, a retired railroad worker, commented:

I think the city of Minot has kind of dropped the ball. They have completely forgotten about all of us -- all they are worried about is the oil, the influx of people, the infrastructure. . . . They just kind of forgot about all of us.

Ingrid, an elderly housewife agreed and stated, “They are more interested in getting new people in.”

Residents affected by the flood agreed they were in it for the long haul and contended the road to recovery is not an easy one. Micah, a small equipment operator, summed up the general consensus of flood victims. “I tell my wife, you play the hand you’re dealt. I’m not happy about it, but what do you do?”

Financial Effects of the Flood

Valley residents suffered extreme financial loss as a result of the Souris River Flood of 2011. The effects were significant for all populations studied, but especially difficult for vulnerable populations, including the elderly, the poor, and single mothers. The effects of the flood were exacerbated by a variety of other factors, including rapid

growth within the community – growth that has created a housing shortage and increased property values throughout the city.

Homeowners in the valley of Minot, like homeowners throughout the nation, consider their home to be an investment – their nest egg for the future. The damage caused by the flood, and the debt load that was incurred to repair these properties changed retirement plans for many citizens. Micah, a small equipment operator, commented:

We were debt free, and we just bought a new vehicle and paid cash for it . . . unfortunately. Seventeen months and \$140,000 later, I'm back in my house, but I'm 57 years old . . . my retirement went in the river to Canada.

Suzanne, a city employee, could not repair her house, and went looking for another home. She stated, "There was like 25 houses on the market to buy at the time, and living with your in-laws only lasts so long, and I worry, that by the time we catch up, we will be elderly, too."

Residents had varied options of funding in recovery. The grant money provided by FEMA provided a basic level of assistance. The remaining funds were low interest loans that were provided by the Small Business Administration and the Bank of North Dakota. Many residents ended up with a second or third mortgage on their homes. Nick, a local media reporter, commented, "I would have had my house paid for when I was about 60, but now, when I am 85." Seth, a railroad worker, remarked that he was fortunate to possess the skills to do most of the work himself, but stated, "We are still at about \$80,000 in just materials."

The uncertainty of financial assistance weighed heavily on residents of the valley in the days and weeks following the disaster, especially for the poor and the elderly, who were barely able to make their existing mortgage payment. Mike, a Salvation Army worker, provided assistance to many residents during the early stages of recovery, and noted that many residents had little or no ability to work toward a recovery solution. He explained:

If we knew of a group that might be able to help or network, we made the connection. But, between you and I, if I use myself as an example, the last thing I need is a loan when I have lost everything. We so often see people at one of the worst moments of their lives.

The financial effects of loss and recovery, coupled with stress created as a result of disaster, caused many issues within families. Marjorie, a high school math teacher, commented:

Financially, they [children] knew what was going on at home, and they knew what could be done, and what couldn't be done. I would hear the kids say that . . . "Mom couldn't afford that," or "We can't do that anymore." Moms and Dads have jobs, and kids are wondering what is going to happen, and they are caught in this financial crisis.

In order to provide some assistance to struggling families, Minot Public Schools provided free meals to all students whose families were affected by the flood. Rose, an elementary school teacher, stated, "I had a senior and an eighth grader, and they ate for free at school. . . . We just had to write FLOOD across the top of the form. We never filled that

out before, and it was a blessing.” The appreciation of free student lunches was a common theme through focus group sessions.

The financial effects of the flood were far-reaching, and affected the lives of many residents. Clarice, a social worker, summed up the general consensus of participants who were interviewed.

I think it changed everyone’s life forever. We would have never moved; we would have never changed anything. But then, all the sudden, it was all about money – what difference did it make, because we were already so far into debt.”

Summation of Findings of Theme #8

The Souris River Flood of 2011 had a definite effect on the social, emotional, and financial well-being of citizens of the Souris River Valley. Residents of the valley appreciated the generosity and volunteer labor provided by non-flooded victims immediately following the flood, but felt a disconnect with those who lived outside the inundation zone, and especially with city government, who they felt were spending more energy and resources on population growth than flood recovery. While residents affected by the flood experienced a variety of emotions during flooding and subsequent recovery, many did not seek counseling or assistance.

Conclusion

The next chapter will provide a comparison between data derived in the study and the literature review. The chapter will also describe the coding process used to evaluate focus group and interview data, and will address the primary theory that was discovered through research.

CHAPTER V
EMERGENT THEORY AND
DETERMINATION OF A CENTRAL PHENOMENON

Purpose of Study

The purpose of this qualitative study was to determine what constitutes full recovery of a school community from a natural disaster. This qualitative study examined the perceptions of flooded residents of the Souris River Flood of 2011. This study has the potential to assist school communities who are suffering the effects of a natural disaster, and can also support and enhance response plans of governmental agencies and non-profit organizations that typically respond to disasters.

The research module consisted of nine focus groups and ten interviews. Each session was recorded and transcribed verbatim. In total, over 700 pages of transcribed data were reviewed and codes were developed through a process of open coding. During the open coding process, data were coded twice to ensure a thorough examination. During evaluation of open codes, a series of eight common themes were developed. Themes were presented in Chapter IV as follows:

1. The pre-flood and evacuation period was a traumatic experience and was the first crisis faced by Minot residents directly affected by the flood.

2. The assessment and recovery period was a traumatic experience and was the second crisis faced by Minot residents who were directly affected by the flood.
3. The FEMA Individual Assistance program, while expeditious in nature, received mixed reviews by Minot residents who were directly affected by the flood.
4. The FEMA Public Assistance program was a contentious process subject to intervention by political leaders before consensus could be reached and recovery could begin.
5. Crisis management is a collaborative process involving federal, state, and local government, as well as volunteer services from charitable organizations.
6. The long-term effects of a natural disaster span far beyond the physical recovery of homes, businesses, and school buildings. The Minot Public School District community was drastically changed as a result of the Souris River Flood of 2011.
7. Effective communication has been lacking during all phases of crisis and recovery, and has created a layer of confusion and mistrust throughout the Souris River Valley.
8. The Souris River Flood of 2011 negatively affected survivors; negative effects have included social, emotional, and financial hardships.

Emergent Theory

All codes were further evaluated through axial coding. A thorough review of thematic findings yielded one common, central phenomenon: Success in recovery was dependent on a resident's social, emotional, and financial well being before the flood, and the ability of a resident to gain access to agencies and organizations offering assistance to flood victims. In general, residents affected by flooding who had a strong friend and family base, who were able to deal with stress effectively, and who were financially solvent before the flood were able to respond more rapidly to the disaster, and appeared to be more successful in their recovery efforts than residents who did not have a strong support base.

A grounded theory diagram was developed to illustrate interrelationships of causal conditions to contextual and intervening conditions, as well as outcomes derived from implementation of various flood recovery strategies (see Figure 1). This diagram depicts how important it is to identify vulnerable residents in a timely fashion during flood recovery; and also, how important it is to apply appropriate interventions to assist residents in recovery.

While social, emotional, and/or financial stability were not sole indicators of success in the process of rebuilding, they were noted as key elements. Vulnerable individuals were dependent on assistance from charitable organizations and faith-based groups to assist in their rebuilding processes.

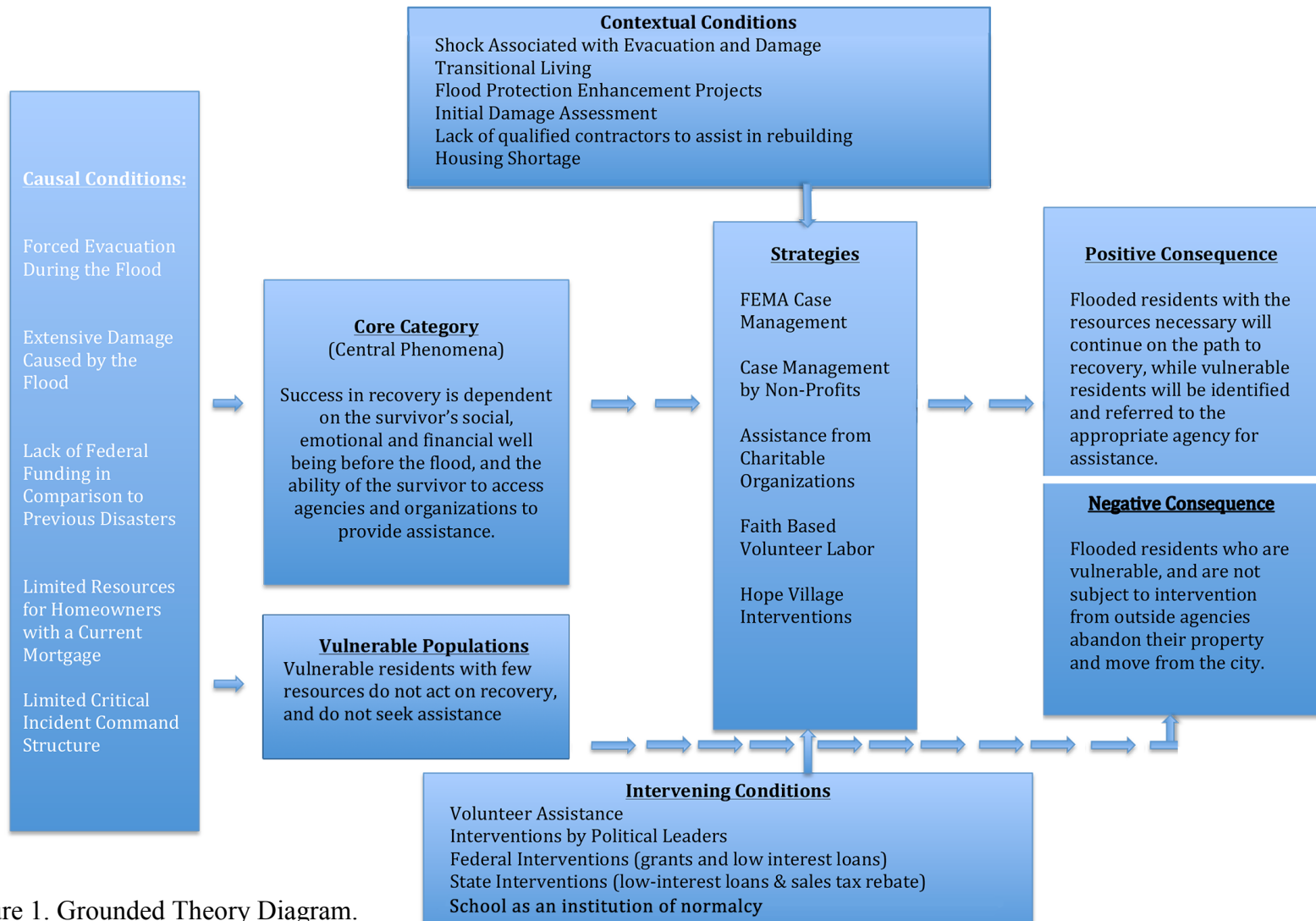


Figure 1. Grounded Theory Diagram.

The key to successful recovery of vulnerable populations rested in the ability of individuals to advocate for themselves, or seek assistance from charitable and faith-based organizations. Federal involvement through the FEMA Individual Assistance program provided every flooded resident with a damage assessment and a grant award, not to exceed \$30,200.00. The balance of funds to cover recovery costs came from low interest loans from the Small Business Administration and the Bank of North Dakota, or through donations and grants from charitable organizations.

The key to success in working with vulnerable populations was timely identification of individuals in need of assistance, and securing social, emotional, and financial capital necessary to assist in recovery before individuals gave up and left. Some vulnerable residents refused to take any action, and did not wait to receive assistance from charitable organizations and faith-based volunteer groups. Many of these residents left the city, and did not attempt to rebuild their homes in Minot.

Grounded Theory

Selective Coding

Eight themes were gleaned from data analysis and interpretation. A common thread throughout these themes centered on the ability of vulnerable populations to succeed in recovery efforts. All data were subject to selective coding, a recursive process that allowed the researcher to compare interrelationships between categories. A central phenomenon was developed through this process: Success in recovery was dependent on a resident's social, emotional, and financial well being before the flood, and the ability of a resident to gain access to agencies and organizations offering assistance to flood victims. The ability of charitable and faith-based organizations to provide assistance to

citizens most in need of help was easier said than done. Many issues were noted during the flood and subsequent recovery period, including the inability of charitable organizations to work collaboratively, as well as difficulty in managing faith-based volunteers who were willing to offer time and services.

Causal Conditions

A causal condition is something that contributes to the occurrence of a central phenomenon. While reviewing the data, there was little doubt the root cause of the central phenomenon was the Souris River Flood of 2011. A grounded theory research model requires that a researcher go beyond the obvious and break data down into the smallest detail (Strauss & Corbin, 1990). In reality, the flood was an event that brought many other issues to light. The research identified five causal conditions that had a negative effect on many valley dwellers, and in some instances, hampered the recovery process.

Forced evacuation during the flood.

Over 14,000 valley residents were forced to evacuate before the flood. The stress of forced evacuation and transitional living created a hardship for many Minot residents. Citizens who were well connected in the community were able to evacuate the majority of their belongings. Many individuals, such as the poor and elderly were unable to garner assistance during the evacuation period. Jackie, a para-professional, recalled the struggles faced by her elderly neighbors, who “just packed an overnight bag and left.” Hunter, a Red Cross employee, worked with residents of Minot’s mobile home parks, who “lost a good percentage of their stuff” as a result of the flood.

Extensive damage caused by the flood.

Many other residents misjudged the anticipated water levels, or simply denied the flood would happen. Charles, a retired school administrator, believed the flood forecast was an over-exaggeration, but was shocked when he returned. He stated, “All the stuff that was standing in the kitchen was gone; and now, when we are missing something, I just say, ‘It went down the river.’”

The forced evacuation of the Souris River Valley created a stressful situation for many, especially those vulnerable residents who had little or no ability to self advocate or arrange for assistance. The amount of damage caused by the flood was more than most residents could envision. Deb, a city employee, stated:

I didn't expect that much damage up high. I thought [it] would be wet to here [motioning with hands to a 3 foot height], and perfect up high. It was a mess, and the ceiling was wavy . . . and they had a hardwood floor under the carpet, and it was all over the place . . . and I said, “Oh, my gosh.”

Tiffany, a special needs teacher, was shocked by the damage. She said, “Pictures don't do it justice. You have to go in there, and so . . . that's my son's room . . . floors just collapsed.”

Lack of federal funding in comparison to previous disasters.

In most instances, financial costs associated with flood damage far exceeded the grant money provided by FEMA. Flooded residents were left to deal with the shock of damages as they scurried to access funding through low-interest loan programs. This concern was exacerbated in homes where residents had limited financial resources.

Many participants discussed a lack of equity in the FEMA Individual Assistance program. The amount of financial assistance paid to residents affected by floods in New Orleans and Grand Forks was a common topic during focus group sessions. Deb, a city employee, commented, “If Katrina could get that much, why couldn't those of us in the middle [of the United States]? We spend money in the community. We volunteer our time. We are law-abiding citizens. Why can't we get treated the same?”

Confusion regarding federal involvement, and specifically, confusion around federal loan and grant programs, also caused a great deal of turmoil. Hunter, a Red Cross employee, stated:

So, the low income person who can't afford to rebuild or doesn't have the know-how or ability to do it themselves, they have to hire it out, and they need a loan to do so, because they can't afford it . . . so now, there is grant money, but they can't get it because they already borrowed money and got a benefit . . . but, that [is] not a benefit; it's a loan. And sometimes, you think, “Where is the reasoning?” The thought process . . . to get the money to where it is needed? So, you have a mortgage and a Small Business Administration loan, but you can't accept a grant because you took out a loan? You got the second loan because you needed the second loan.

The confusion surrounding funding options was a common theme throughout focus group sessions.

Limited resources for homeowners with a current mortgage.

Many citizens had limited resources. In general, many elderly residents counted on their property as an investment. Alton, a retired city employee, talked about elderly residents who just packed a bag and left.

There are a lot of elderly people who lived down in that area, and they were living on their social security. They had a little home that was paid for, and they lost it, and there was no way for them to recover.”

Financial well-being was a major concern discussed during focus groups and interviews. Sally, an appliance saleswoman, stated, “I am lucky. I have to start my life over, but I'm young enough to do it.” She expressed concern that her mother, a recent retiree, was not as fortunate. Liz, a speech pathologist, commented, “I hadn't paid for my house the first time, and I, now I have to pay for it again.”

A common resource discussed during focus groups was the ability to self-perform many of the tasks necessary for recovery. Jordan, an elementary teacher, stated, “Everyone we talked to who had been in a flood before said do this, do this, do this, so we just started doing.” Megan, a para-professional, agreed stating that early on, her husband “determined that he would do as much as he could on his own.”

Many citizens did not have the money, skills, and ability to begin recovery on their own. While many charitable organizations and faith-based groups were stationed in Minot, the city lacked the organization necessary to get volunteers where they were most needed.

Limited critical incident command structure.

Confusion was prevalent during the early stages of recovery. Without a fully functional centralized Critical Incident Command Center, residents who needed assistance were left in the lurch. Turf wars between charitable organizations were also evident during this time. Many residents struggled with locating and securing volunteer services. Sam, a retired laborer, was in need of assistance, but was frustrated with the process. He explained, “I went down to the armory, and put my name on the list, and they couldn't get to us. They told me there were people ahead of us, which I didn't understand, because as soon as it was available, I put my name down. . . . How did I get so far back?”

Communication was also a concern, exemplified through focus groups and interviews. Many felt the city had not clearly communicated with residents affected by the flood; especially, communication in regard to future flood protection. Many residents were delayed in flood recovery while they waited for months to learn of a final plan for enhanced flood protection in the city. Raymond, a retired firefighter, commented that he noticed, “A lot of discussion about recovery and flood diversion projects, but not a lot happening . . . and we still have a lot of people sitting in the valley without a lot of direction.”

The causal conditions noted by flooded residents were handled in a variety of ways. Some residents who were well connected in the community were able to access social, emotional, and financial capital to quickly rebuild their homes. The same was not noted among vulnerable populations, who were dependent on assistance from outside

agencies, and who were often uncertain as to whether or not they might access those services.

Contextual Conditions

Contextual conditions relate to the context in which a participant experiences a central phenomenon. Corbin and Strauss (2008) found that “context doesn’t determine experience or set the course of action, but it does identify the sets of conditions in which problems and/or situations arise and to which persons respond through some form of action/interaction and emotion” (p. 88). Every natural disaster occurs within unique surroundings and is characterized by unique components. No two communities are the same, and no two natural disasters are the same. Therefore, we can only assume that no two recovery periods will be the same, either. However, natural disasters contain common threads running through them such as the emotional, social, and economic factors arising in populations affected by a natural disaster. This was evident in the Souris River Valley, where residents were evacuated from their homes, and were required to live in makeshift, temporary facilities. These contextual conditions had little effect on courses of actions residents had to take to recover, but did make up the environment, the context, that surrounded recovery efforts of valley dwellers.

Shock associated with evacuation and damage.

Many participants expressed utter shock in regard to their assessment of damage after the flood. One resident commented that in her mind, she anticipated the water would come up and go down, and the house would be wet when she re-entered the valley. This was not the case. Chantel, an accountant, shared her experience in opening her sister’s house for the first time.

My sister had over 13 1/2 feet of water, and I didn't know a house could hold so much water – just blew my mind . . . and when I walked in there, I was just staring, and she asked why . . . because I never saw anything like this and never thought I would.

Chantel's experience was not unique. Charles, a retired school administrator, shared his experience when he re-entered his home.

I didn't even say this to my wife, but I will say it to you. . . . I walked in the kitchen door, and I saw a rat run across the kitchen floor, and that . . . I still get goose bumps thinking about that. I thought, "Wow, this place is really a disaster."

In some instances, the damage was so extensive that repair was not an option. In most situations, repair was possible. The context of damage did not necessarily have a major impact on any action associated with recovery, but it did present a factual basis for residents to consider when developing a course of action toward recovery.

Transitional living.

For many residents, the transitional living period proved to be a very stressful time. Many participants expressed frustration with the lack of privacy during this period. Milton, a mental health provider, commented, "It isn't something that you expect in middle age; it's something you expect when you are in college, or just starting out."

Many residents living in transitional accommodations commented that it was difficult to have private conversations, and in turn, was difficult to plan for a very uncertain future. Jody, a retail manager, expressed her frustration during the transitional living period.

We were living with my parents . . . an hour north of here . . . and my dad was – even before it actually flooded – he just kept pushing us . . . What are you going to do? That was the hardest part . . . I think . . . everyone was telling us what to do, and Mike and I just wanted to sit back and decide what was best for us, and that's why it took us longer, and in the long run, I'm glad, because we took our time to make decisions. We got our FEMA trailer, and it was home . . . and we just sat back and decided what to do . . . and for us, that was good . . . because some people jumped in, and then later said . . . “Gosh, wish I wouldn't have done that!”

The transitional living period created stress for many residents. Eventually, most residents with flood damaged homes were able to access a FEMA trailer.

Flood protection enhancement projects.

Many residents have been frustrated with the city in regard to the city's indecisiveness over future flood protection plans. In some instances, these plans could have a direct effect on residents of the Souris River Valley and the decisions residents might make regarding their personal recovery. Even after 3 years, many residents continue to wait for a final decision on an enhanced flood control project before they decide to rebuild. Others have been told by the city they may be forced to sell their property for flood protection, but have yet to receive a settlement offer. Leila, a delivery truck driver, commented that a “lot of people are waiting because their homes are in the potential diversion area, and maybe a potential buyout area, and many of those people have seen nothing on their homes . . . and they won't for a long time.”

In many instances, decisions of whether or not to repair flood damaged homes has been taken out of the hands of residents. Some residents have gone ahead and repaired their homes, and now are uncertain of their future in the valley.

Initial damage assessment.

In the days following return of residents into the Souris River Valley, FEMA officials worked with local residents to create an initial damage assessment of each property damaged in the flood. These assessments were very important for a variety of reasons. First, an official assessment provided a citizen with a basis for the amount of FEMA grant each homeowner in the valley was eligible for. Second, it provided a basis for determining eligibility of citizens for low interest loans through the Small Business Administration and the Bank of North Dakota.

The dollar amount of damage assigned to a property was based on objective criteria, and was not open to negotiation. A FEMA worker entered a home and evaluated the damaged elements of the home. From that visit, a damage assessment or report was completed, and made available to federal and state agencies. Many participants stated their initial visit from a FEMA worker was generally positive. Dealing with FEMA and Small Business Administration officials after an assessment was completed was what often proved difficult. Hunter, a Red Cross employee, expressed his frustration by stating:

You have to deal with that; and after the fact, you are dealing with somebody who is somewhere else from where the disaster is – from whatever call center they are at – and certainly, they don't understand what we are going through or how we feel. I think that part of it was a

challenge, and I know it was for everyone who dealt with FEMA and Small Business Administration over the phone.

A damage assessment was required of all flooded homes, and in nearly all situations, the damage surpassed the grant money provided by FEMA. This same assessment developed by FEMA for FEMA was provided to financial institutions that provided low interest loans to affected residents. An initial damage assessment was crucial, and had a direct impact on other funding options offered to homeowners later.

Lack of qualified contractors to assist in rebuilding.

The extensive damage affecting the Souris River Valley created a shortage of qualified contractors to assist in rebuilding. Early in the recovery phase, contractors from around the United States came to Minot, North Dakota. Many participants reported that many of these workers were reputable, and provided excellent services for residents affected by the flood. Others provided shoddy workmanship resulting in claims of fraudulent behavior. Lucy, an elementary teacher, noted, “I had a plumber come in to fix something that was broken, and he said, ‘Really, did he [the contractor hired to repair the home post-flood] use like forty-five different pieces of pipe?’ I didn't have a very pleasant experience with that.” Lucy added, “If I could, I would sell it and move somewhere else.”

Some participants also shared claims of fraudulent practices and over-billing. Wayne, a school district employee, expressed concern with a cleaning company that was hired to mitigate damages in flooded school buildings. He stated:

We did not have a good experience with the cleaning company that we hired. We got bills that we should have never been billed for...costs that

FEMA deemed ineligible, and it's still hanging out there. We could end up in a lawsuit from that cleaning company. They billed us for nearly 10 million dollars, and we have been paid about 7 million, and FEMA says the rest is not eligible.”

Options were limited for flooded residents; and in some instances, decisions were made to ensure a rapid return to the home, without adequate attention to cost.

Housing shortage.

The city of Minot has experienced incredible growth since 2008. This growth slowed slightly as a result of the flood, but has rebounded in recent years. This growth received mixed reviews from participants in this study. Duncan, a local engineer, stated:

One thing that has helped us out, is that we have a very robust economy coming into the flood, and that demand for housing and services, it led to a speedy recovery in the valley, relatively speaking. So, the people within the valley, that decided to move on with their lives – either moving on to the hill or leaving Minot completely – those houses that were in the valley didn't stay flooded or vacant for long.

Other residents expressed concern over this rapid growth and subsequent housing shortage. Nick, a local reporter, stated:

It's such an odd situation, because we had this terrible flood, but we also had this huge boom thing going on with all the oil. So, there was this pressure for places to live, which kept prices high – which meant that if I lost everything in the flood, I really couldn't afford to go out and buy –

and that's why I rebuilt where I was because I couldn't go and buy land anywhere. Those factors combined to push a lot of people out.

The housing shortage created an additional layer of stress for residents who struggled with recovery efforts, and who desired to consider housing options outside the valley.

Intervening Conditions

Several intervening conditions were evident during the review of data. These intervening conditions were outside forces that helped to shape and promote recovery from the disaster. Through these interventions, a list of strategies emerged. These strategies will be discussed later in this chapter.

The mere presence of intervening conditions did not guarantee all residents had access to similar interventions. Many vulnerable residents did not know how to access assistance, and in the early stages of recovery, formalized structures were not in place to identify and advocate for the most vulnerable residents.

Volunteer assistance.

Many residents depended on volunteer assistance to help with cleaning and rebuilding. Volunteer assistance was broken down into two separate categories: (a) volunteers who had a kinship with residents affected by the flood, and who assisted friends and relatives in cleaning and repairing homes, and (b) volunteers who were associated with charitable and faith-based organizations, and who were assigned to help residents affected by the flood. Roger, a school district administrator, who was well connected in the community, commented, “We had friends, family . . . you name it – people that we didn't know – that came to help on different occasions.” John, a retired Methodist pastor, with limited resources, commented:

We got a call from . . . I think . . . Helping Hands . . . and they asked if we needed help? They said they would send some people over. It was a husband, wife, and son, and I found out that her mother goes to the same church as my wife and I. He happened to be a contractor, and he asked what we needed. I asked him to do the basement, and he said it wasn't a problem. He said, "You take care of the upstairs with your friends, and we will take the downstairs." He asked if he could open the basement windows, and I said sure, so he went to the truck and got his saw and he handed everything out through those windows. I had a 2-ton pool table down there, and he just cut it up and hauled it out.

The ability of vulnerable residents to access volunteer services often depended on interventions by individuals or organizations in the community who identified a resident as someone who needed assistance, and who was willing to make the appropriate referral.

Interventions by political leaders.

Many participants noted varied levels of frustration in dealing with flood recovery issues. In many instances, flooded residents depended on interventions by political leaders. These interventions came through a variety of sources, including: (a) advocacy through local congressional offices, (b) advocacy through state government, including the office of Governor Jack Dalrymple, and (c) in the public sector, direct advocacy of the congressional delegation with FEMA management.

Roger, a school administrator, who was accused of accepting money from FEMA in a fraudulent manner, reached out for assistance. He said, "I even contacted [Senator] Hoeven's rep in town, Jackie Velk, and followed up on it." Ellen, a minister's wife, was

upset when a FEMA worker told her a FEMA trailer could not fit on their lot. She explained:

Everyone else on our street had the same kind of house, and it worked there. So, we were told that if we went to the Senator's office, we could get a FEMA trailer, so we went and lit some fires.

Many participants commented that interventions with local congressional offices were helpful in planning for recovery.

The state of North Dakota, through the Governor's office, also served as an advocacy support for many Minot residents, especially in the public sector. Wayne, a school district employee, commented:

The people from the state of North Dakota . . . when we got to that point, they were helpful. Our senators were involved as well. It was kind of sad that we had to get other government officials involved to get to the point where we were, but it's what we had to do.

Interventions by political leaders were often required to cut through bureaucratic red tape, and to get local and federal agencies on the same page.

Federal interventions.

The federal government provided financial interventions during the recovery period. These interventions included grants and housing through the FEMA Individual Assistance program and loans through the Small Business Administration. These interventions were part of a recovery package offered by the federal government.

The federal government offered grants to flooded residents in the Souris River Valley, up to \$30,200.00 per homeowner. The FEMA Public Assistance program

provided assistance to publicly funded agencies, such as the city government, schools, and parks.

The Small Business Administration also provided residents an opportunity to apply for low-interest loans. These loans had varied requirements, depending on an applicant's credit rating and debt load. Penny, a school district employee, became quickly disenchanted with the Small Business Administration. She stated, "I remember going to the auditorium for an Small Business Administration loan, and it was a big run-around, and we never did get an Small Business Administration loan." Burt, an electrical inspector, took advantage of the loan, but expressed his frustration, "It was a lot of paperwork with Small Business Administration and a fair amount of frustration." Jordan, an elementary teacher, commented, "Our Small Business Administration thing was good, but it was a lot. I can go down to the credit union and borrow twice the amount of money, and it is so easy, but you had to sit there and fill this out."

The FEMA Individual Assistance program also provided housing options for residents affected by the flood. These two-bedroom and three-bedroom models were placed on the homeowner's property when possible, and were tied in to the owner's existing water and sewer system.

Some flooded residents expressed dismay in regard to FEMA's slow response to housing issues following the flood. Hunter, a Red Cross employee, described both angst and understanding in dealing with FEMA.

I think that FEMA was actually overwhelmed at that point – that's my opinion on that – but they had so many trailers they had to put together, and they came from all over, from different spots in the United States, and

even to get them here was a huge task, so I definitely understand their side of it, but on our side of it, we had to help them until temporary housing was available to them.

State interventions.

The North Dakota State Legislature offered two programs to assist residents recovering from flooding. The first intervention was the formation of the Flood Recovery Loan Program. This program allowed residents to apply for up to \$10,000.00 at a 1% interest rate. Carol, a retired teacher, was impressed with the ease of the Bank of North Dakota loan. “It was pretty simple.” Nick, a local news reporter, agreed, “That was very easy.”

The legislature also offered a sales tax rebate of up to \$2,500.00 for any resident whose property was flooded. Applicants were required to submit copies of receipts from the purchase of supplies to repair flooded properties. The sales tax rebate proved to be less than easy. Lucy, a special needs instructor, expressed her frustration with the program.

I didn't do that. . . . It was a joke! If you were able to do that, great, but to be able to sit down and take all my receipts. . . . I mean, I have all my receipts, but I wasn't willing to sit down and try to go through all of it and then determine what's the tax on this, and on that . . . but, I didn't do it . . . you know. . . . I thought we were flooded, and if you can't just give us a measly \$2,500.00, then just keep it.

School as an institution of normalcy.

The Minot Public School District set a goal to get every student into a desk by the beginning of the school year. Governor Jack Dalrymple allowed the district to begin the school year 6 days late. When school opened on September 6, 2011, every student had a desk and a classroom, albeit temporary. The district also provided other types of assistance to flooded families, such as free meals during the 2011-2012 school year.

Many people were very complimentary of the school recovery efforts following the flood. Jackie, a para-professional, commented, “It was so nice of Minot Public Schools to offer assistance [free meals] that fall.” Tiffany, a special needs teacher, commented that school presented a regular routine for students, saying, “School was their normal . . . their routine.” In the midst of chaos, a regular school schedule provided a sense of normalcy for many students in the Souris River Valley.

Strategies

A variety of strategies were implemented to assist residents of the Souris River Valley. These strategies were often as unique as the residents who were assisted, and services were provided based on individual need. Table 1 indicates a variety of strategies implemented during the recovery process.

The lack of a functional Critical Incident Command Structure presented many difficulties. Much confusion was noted by charitable organizations and faith-based volunteer groups in the early days of recovery. Therefore, early attempts to implement strategies were somewhat ineffective. As recovery continued, agencies began to collaborate and provided more detailed interventions for vulnerable residents.

Table 1. Strategies for Recovery.

STRATEGY	AGENCIES INVOLVED	CLIENTAL	POSSIBLE INTERVENTIONS
FEMA Case Management	<ul style="list-style-type: none"> • FEMA Public Assistance • FEMA Individual Assistance 	All Flooded Residents	<ul style="list-style-type: none"> • FEMA Grant • Referral to SBA • FEMA Housing
Case Management by Non Profits	<ul style="list-style-type: none"> • Lutheran Social Services • Methodist Church USA • Presbyterian Church USA 	Vulnerable Populations	<ul style="list-style-type: none"> • Referral to Social Services • Assistance with Labor • Potential outside funding sources
Assistance from Charitable Organizations	<ul style="list-style-type: none"> • Salvation Army • Red Cross • Minot Area Community Foundation • Minot Public Schools Foundation • Corporate Donors • Individual Donors 	Vulnerable Populations	<ul style="list-style-type: none"> • Free Meals • Cleanup Supplies and Materials • Small Scale Grants • Gift Cards/Food Donations • Mental Health Services • Social Networking
Faith Based Volunteer Labor	<ul style="list-style-type: none"> • Methodist Church • Presbyterian Church • Mennonite Church • Catholic Church • Various Eccumenical Groups 	Vulnerable Populations	<ul style="list-style-type: none"> • Coordinate of Volunteer Labor • Mental Health Services • Small Subsistance Grants • Referrals to Outside Agencies
Hope Village Interventions	<ul style="list-style-type: none"> • Collaborate Eccumenical Provider 	Vulnerable Populatons	<ul style="list-style-type: none"> • Full Service Case Management • Coordination of Finance Options • Mental Health Services • Coordination of Volunteer Labor • Support Through Recovery



Consequences

The causal conditions (forced evacuation, extensive damage, lack of adequate funding, limited resources, and limited command structure) noted by residents, and discussed in this chapter, were profound and unavoidable. Many residents were well connected in the community, and had a strong support structure to assist in evacuation and recovery (see Figure 2).

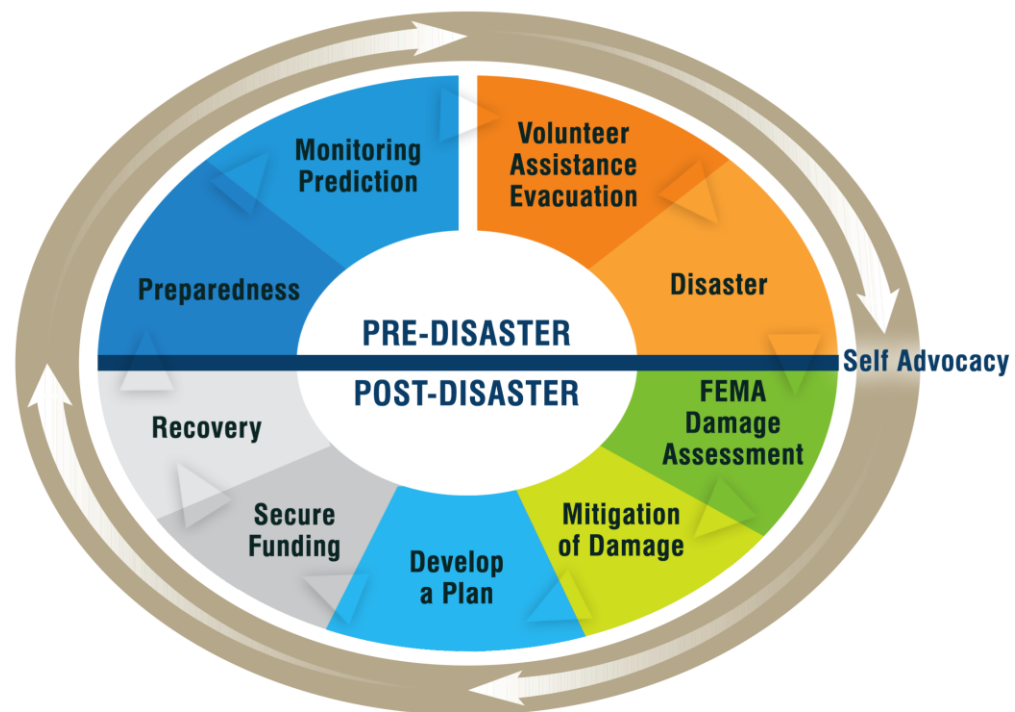


Figure 2. Recovery for Well Connected Residents.

Other residents did not have the same level of support. Charitable organizations and faith-based volunteer groups came to Minot and offered assistance, but the lack of a functional Critical Incident Command Center, coupled with confusion of roles and responsibilities, meant that many vulnerable residents were unable to get the assistance they needed to rebuild.

The Hope Village concept served as an umbrella organization for nine faith-based volunteer groups. A Hope Village team also provided a framework of case management to ensure the most vulnerable citizens received assistance. Hope Village did not open until April, 2012. Vulnerable residents who were able to self-advocate and develop a recovery plan shortly after the flood had more success in the recovery process than those that did not. Some residents were able to hold on through the winter, and then received full benefit of the Hope Village case management model. Those who were unable to self-advocate, or those who did not receive early assistance and hold on through the winter were more likely to abandon their homes and move away from the city (see Figure 3).

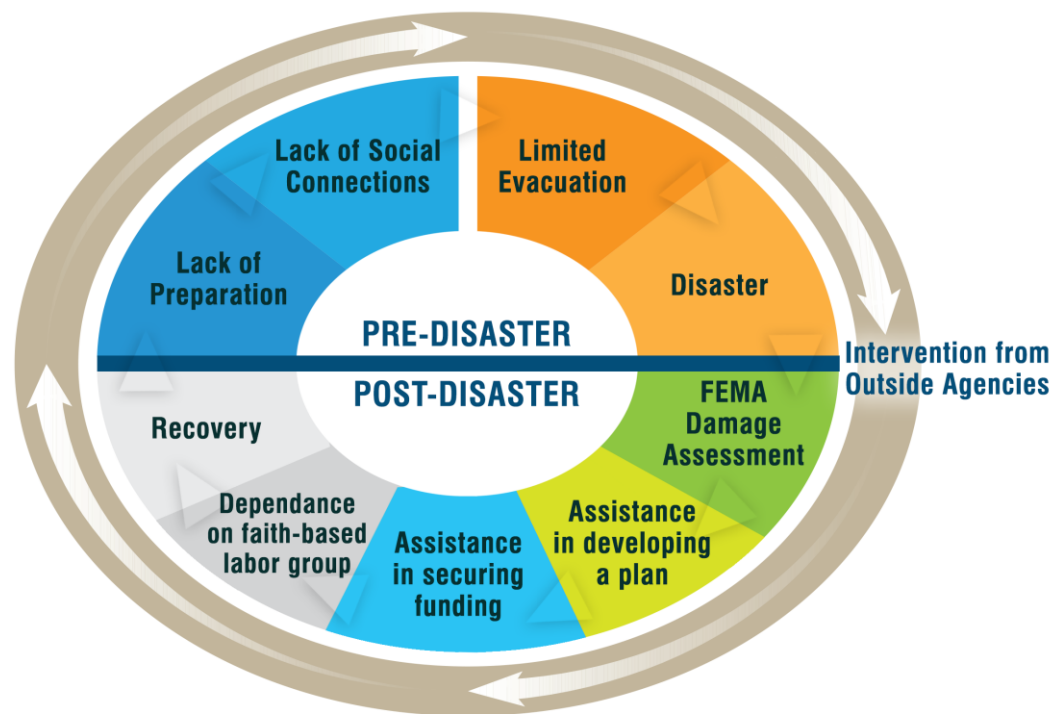


Figure 3. Recovery for Vulnerable Residents.

Conclusion

Chapter VI includes a conclusion and a summary of findings, as well as recommendations for further study and action.

CHAPTER VI
CONCLUSIONS, DISCUSSION, AND RECOMMENDATIONS

Conclusions and Summary of Findings

The findings presented in this small-scale qualitative study of the Minot Public Schools community recovery from the Souris River Flood of 2011 suggested the following:

1. The ability to recover from a natural disaster is directly proportionate to an individual's pre-disaster social, emotional, and financial wellbeing.
2. The definition of the term *recovery* is as unique as each individual resident affected by a disaster: There is no sole definition of what recovery looks like.
3. The perception of FEMA in regard to recovery was strongly affected by the relationships that FEMA workers and case managers forged with residents affected by the flood.
4. The FEMA Public Assistance program, while crucial in the recovery of the public sector, was perceived to be confrontational and minimally effective from the start.
5. The lack of a Critical Incident Command Center in the city of Minot created an environment of chaos and stifled the ability of charitable organizations

and faith-based volunteer groups to assist vulnerable citizens in a timely fashion.

6. The citizens of Minot judged the success of recovery in the public sector by the speed in which the recovery took place.
7. The expeditious recovery of the Minot Public School District was seen as a stabilizing force in the community that brought a sense of normalcy to the flood damaged valley.
8. The delay in decision making by city government had a direct effect on many homeowners, and slowed the recovery process for many residents in the valley.

The following research questions, developed from the purpose statement found in Chapter I and addressed in research and data analysis, included:

1. What social, emotional, and economic processes are associated with school community recovery from a natural disaster?
2. What demonstrates that a school community's recovery is complete?
3. Who are key players in the recovery process of a school community?

Findings are summarized in narrative form according to each research question.

Research Question 1

What social, emotional, and economic processes are associated with school community recovery from a natural disaster?

Recovery was found to be about social, emotional, and economic capital. Lindell and Prater (2003) found that recovery rates varied by individual, family, business, and community. The strength of a community, albeit social, emotional, or economic, can

play a major role in the recovery process. Economic factors often take front stage in the midst of a natural disaster. Olshansky and Chang (2009) noted that residents with the fewest assets struggled most during a recovery.

Federal interventions, primarily through the FEMA Individual Assistance program, provided a quick economic intervention for many residents. However, amount of damage often far exceeded grants provided by FEMA. Unfortunately, federal intervention in the immediate period following a disaster is usually based on economic assistance and political restoration, not on emotional or social well-being. This fact was also noted by Madrid and Grant (2008), who found that federal relief policies tend to ignore social and emotional issues. Meanwhile, vulnerable populations are left to struggle.

This struggle was evident in the city of Minot. Residents who were connected in the community, and who had a strong friend and family base, were more successful in evacuating their homes and businesses. Shelby, an elementary school teacher, had a large group of volunteers come in and assist. She stated, “We had our entire house moved out in about an hour and a half – we had about 40 people at our house. It was crazy to see how fast everything got moved out.” Chantel, an accountant, provided a contrasting experience when she checked on the residents in her sister’s rental property. She stated, “Everybody else was moving, and they were not, so I went over there. . . . They didn't take anything out.”

This same contrast in support continued into the recovery period. Whaley (2009) noted that many residents who experience a natural disaster are traumatized. This was noted in vulnerable populations that failed to evacuate personal items from their homes,

or the subsequent recovery period when they waited for outside assistance to guide and provide assistance. The lack of an active Critical Incident Command Structure in the city prevented charitable and faith-based organizations from working collaboratively to provide assistance to those residents who were most in need. Conversely, well-connected valley residents got to work and began cleaning their homes almost immediately, often with volunteer assistance from family and friends.

Many residents also showed signs of depression and anxiety during the flood and subsequent recovery period. Many researchers (Jones et al., 2008; Madrid & Schacher, 2006) found that availability of mental health providers is often compromised after a natural disaster. This was noticed in Minot. Milton, a local mental health provider, commented:

The flood had a huge impact on mental health providers. Trinity Riverside was flooded, and they relocated. Two providers had their practices flooded out, and one, if not both, had their homes destroyed . . . so they were essentially removed from the list of providers.

Mental health interventions were discussed by several participants during focus group sessions and interviews. Many participants expressed a belief that the best therapy was getting to work to repair their homes. Milton agreed with this belief.

The most productive part wasn't talking or feeling, or crying; it was doing. It was tearing out the rotten sheetrock, or figuring out where your kids were going to stay. It was getting one room set so you could live out of it while you worked on the rest of the house.

Many participants expressed the importance of promoting a sense of normalcy during the evacuation and recovery period. Madrid and Grant (2008) also found that victims of Hurricane Katrina found solace in returning to normal. The Minot Public School District adopted a similar mission. The district set a goal of starting school on time and ensuring that all students had a desk to sit in. The goal was to deliver a normal school experience for all Minot Public School students. Bobbi, an elementary school teacher in a flooded building, summed up the district initiative. “We needed to stay together for them, because they needed us.”

Recovery is achieved when the emotional, social, and financial needs of a disaster-stricken community are met. In order to recover, a community must be able to work collaboratively to ensure that every resident, even the most vulnerable, has the assistance they need to examine their current situation, develop a recovery plan, and begin the road to recovery.

Research Question 2

What demonstrates that a school community’s recovery is complete?

Recovery is difficult to define. Various researchers have differing views of what recovery looks like, and when a community can establish that recovery is complete. Anderson (2008) indicated that recovery is dependent on the view of the evaluator, stating that for many, recovery means the community has returned to its pre-disaster condition. Baird (2010) commented that many researchers believe that recovery is complete when a community has returned to a condition that is as good as, or better, than previous conditions.

By January 2, 2014, all but one flooded school building in the Minot Public School District had been repaired or replaced. Still, at the time of this report, many flooded homes were sitting untouched in the valley, the city had yet to finalize plans for an enhanced flood control plan, and many citizens continued to express fear in regard to future flooding. Data gleaned through focus groups and interviews indicated that many residents continued to struggle with social and emotional effects from the flood. As of July 3, 2014, the Minot school community had not fully recovered from the Souris River Flood of 2011 (3 years earlier).

The city of Minot was in a precarious spot during the summer of 2011. Oil activity in the western part of North Dakota had increased community population, and had already stressed the housing market by 2008. The Souris River Flood of 2011 exacerbated this shortage in housing. Hunter, a Red Cross employee, noted this situation:

If you look back at the flood and look back at the environment that Minot was at that time – we had very little housing for two reasons. First, because of the flood, and secondly, because of the economy and how things were going at that time. Minot had not caught up with the population that was moving here, so we had the perfect storm for the situation that we were facing . . . no place to put anybody.

The shortage of pre-flood housing was exacerbated by the loss or damage of over 4,000 homes in the valley.

Nearly 3 years have passed since the Souris River Flood of 2011. The city of Minot has continued to work toward recovery. Many participants expressed concern that the city was not doing enough and not moving quickly enough towards recovery. Waugh

(2000) noted that recovery is divided into two separate categories: Short-term recovery involves an emergency period immediately following a disaster, which includes the repair of critical infrastructure, health and safety treatment, and the clearance of debris. Long-term recovery involves a long-range plan for repair of the community, and the development of a plan to mitigate future disasters.

Baird (2010) noted that recovery is also based on a community's belief that hazard mitigation and risk reduction is in place. Duncan, a local engineer, acknowledged the city's slow response to flood recovery, and plans for enhanced flood protection created a stalemate. He stated:

I wish the city of Minot would have done some more things locally, rather than relying on the federal government for assistance, and for the federal government to drive some of these processes. That kind of held us up. I understand the limitation of funding, and I know that [was] what was holding everything up. But now, we are acquiring some properties in the city, and some are, right now, getting their first offer for purchase of their home, and we are 3 years removed from this, and 2 years removed from when the plan was delivered, when the information was there to make acquisition.

Other participants expressed concern about the many homes in the valley that remained untouched after the flood. These *Zombie Homes*, as they have been coined, have continued to be an eye-sore in areas where many residents have repaired their homes. Milton, a mental health provider, agreed the city has been negligent in regard to the procurement and destruction of *Zombie Homes*. He explained:

I think the community response is even more important, and that is what I see failing in the city government. Allowing these things to persist. . . . I know that property rights are important, but these houses are goners. If I were running the city, I would rather take the chance of being sued, and destroying them, rather than just let them sit.

The appearance of the city was specifically noted in focus groups and interviews. Many participants expressed anger over the city's slow response to cleaning up flood debris. Seymour, a state employee appointed to the Minot disaster, commented, "The riverbanks are a mess, and the neighborhoods are a mess. I realize that you can't do things without money, but with the city . . . the attitude was, 'We will only do it if someone pays us for it.'" Ken, a retired railroad employee, also expressed his frustration with the city response. He said, "I think the city of Minot has kind of dropped the ball. They have completely forgotten about all of us . . . all they are worried about is the oil, the influx of people."

Not all public sector flood response was deemed negative. The Minot Public School District received many positive comments from participants in regard to the expeditious nature of recovery, including a rapid response in setting up portable classrooms. Wayne, a school district employee, acknowledged that recovery, coupled with a sense of normalcy in a struggling community, was a process of collaboration and teamwork at various levels. He said:

Because of the emergency, he [Governor Dalrymple] waived procurement laws, and our local board waived our local rules, so we didn't have to advertise for X amount of days, so that we could get multiple quotes and

get moving, and we had to. . . . We had less than 40 days to get over 64 portable classrooms set up.

Wayne also expressed a need to respond quickly to the disaster, whether or not FEMA had provided their blessing. He said, “We had to [move quickly] . . . to be able to do the things we needed to get done in the short timeframe that we had.” Seymour, a state employee, reiterated this assumption, “You had a deadline to meet.” In general, the school district did not have the luxury of waiting to ensure federal funding for temporary school district facilities.

The placement of portable classrooms, coupled with repair and reconstruction of flooded school buildings, also moved quickly. Milton, a mental health provider, commented:

I think that many don't want to celebrate our recovery, but now we have a much better junior high. I wouldn't want to wish a flood on anyone, but this is a better place, and in some way, we need to feel some pleasure and realize that it's okay. We don't need to feel guilty about it.

Many participants commented on the quick response provided by the school district, and appreciated the district's desire to return to a normal schedule as quickly as possible.

Lindell and Prater (2003) acknowledged that recovery is difficult to define, and therefore, is subject to interpretation. Kates and Pijawka (1977) noted that typical recovery can take between 2 and 8 years. While the Minot community has continued to move forward in the recovery process, the general theme of focus groups and interviews in regard to the Souris River Flood of 2011 indicated, at the time of this report, the

community still had many unmet social, emotional, and financial needs; and therefore, recovery, at the time of this study, was not complete.

Research Question 3

Who are key players in a recovery process of a school community?

The list of key players in Minot's recovery process is nearly as diverse of the residents who were directly affected by the flood. In order to better understand the role of leadership in response to a natural disaster, the definition of disaster must be revisited.

The definition of disaster is also diverse, and subject to interpretation. Kroll-Smith and Gunter (1998) noted that disaster is best defined by those who have experienced it. Others (Britton, 1986; Buckle, 2005; Shaluf, Ahmadum, & Mustapha, 2003) have believed that disaster is best left to federal agencies that are mandated to respond to disasters. The United States Government, through the Robert T. Stafford Disaster Relief and Emergency Assistance Act (2007), refers to a disaster as either an emergency or a major disaster. According to the Stafford Act, a *major disaster* is:

Any natural catastrophe (including any hurricane, tornado, storm, high water, winddriven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or, regardless of cause, any fire, flood, or explosion, in any part of the United States, which in the determination of the President causes damage of sufficient severity and magnitude to warrant major disaster assistance under this Act to supplement the efforts and available resources of States, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby. (FEMA, 2007b, p. 2)

The researcher found that focus group participants and interviewees had a very different view of disaster than the clinical definition provided by the Stafford Act. An individual's interpretation of what constitutes recovery also shaped their view of which key players had a direct effect on Minot's recovery. The data gathered in this study indicated that key players were those individuals or organizations that promoted action and provided a sense of security.

Governor Jack Dalrymple was very engaged in the flood recovery process and appointed a team to work with the city of Minot during the recovery phase. Seymour, a state employee, commented, "The Governor welcomed me into his staff. I could call him at any time, give him any recommendation, and he was totally engaged in the process." Seymour added:

In October, by the third or fourth month, I had recommended to the Governor, in a long email, what I thought should be done to jumpstart the recovery effort, because by then, the water had gone down, and we had gotten an assessment of all of the difficulty.

This email was the basis for the recovery plan that was submitted to the North Dakota State Legislature in a November, 2011, special session.

Mayor Curt Zimbleman and Public Works Director Alan Walter both received many accolades during the flood period and early phase of recovery. Wayne, a school district employee said:

The city, specifically the Mayor, was extremely helpful in finding a place for our Ramstad students. We had over 500 students that need a home, and we didn't have a place for them; they worked closely with us and

allowed us to use the city auditorium to house those students for over 2 years. They were great to work with . . . the Mayor was great to work with . . . the people at the city auditorium were great to work with.

Nick, a local news reporter, commented that Alan Walter's candor was appreciated during the press conferences. He said:

I remember Alan Walter holding up the chart he would get from the NWS/Corp, the report they would get a couple of times a day that would predict what we might get in the near future. He said, "They keep taking this and moving it on us."

Milton, a mental health provider, commented that Alan Walter was:

A trustworthy guy, and about as "salt of the earth" as you can imagine. And when he says that the city is at risk, and he didn't say, "Oh, we are going to be great." He said, "We are going to try to save the city." That startled me. He is not a dramatic fellow, so when he is saying that, there is a risk to the survival of the city, I grasped that, because I know Alan, and I know he doesn't cry wolf. When he says something like that, he means it.

The sincere nature in which information was communicated during the evacuation period was appreciated by valley dwellers, and assisted residents in taking the evacuation order seriously.

Jim Olson, KXMC News Director was also listed as a key player in the flood and recovery process. Jim made many trips to Canada during the pre-flood period, and provided 24 hour coverage of the flood. George, a laborer, discussed his frustration with the short final evacuation notice, but added that, "We had some time, thanks to Jim Olson

. . . if he hadn't gotten up there, no telling when we would have found out.” Milton, a mental health provider, also commented that he [Olson] “helped people to empathize – he went through an incredible tragedy himself, and he accepted the reality, and he became a role model for people.” The personal touch provided by Jim Olson and the KX network proved to be reassuring to many flooded residents.

Many organizations were also considered to be key players during the flood and subsequent recovery period. The Red Cross provided shelter for residents, and assisted residents in dealing with crucial needs during that period. Hunter, a Red Cross employee, commented, “Our goal was to get them shelter and a safe place, and along the way, health and mental health services. We provided counseling services as they were moving into their housing units.” The Salvation Army was a noted presence in the community. The most notable services were meals provided to flooded residents, but the work of the Salvation Army went beyond food service. Mike, an employee of the Salvation Army, commented:

We have some good active volunteers and officers and laypeople that say, “You know what I'm here to work . . . your basement is flooded, let's get it cleaned out. We provide flood kits to help clean up, and we would provide assistance to those who needed physical assistance. We try to assist in every aspect, and try not to pigeonhole into specific tasks or duties.

Flood recovery services provided by the Salvation Army and the Red Cross continued into the summer of 2012.

Many faith-based organizations also came to Minot to provide assistance to residents affected by the flood. The advent of Hope Village brought these faith-based organizations together under one umbrella, and enhanced recovery efforts for many residents. According to Pastor Pat, a Hope Village employee, the primary goal of Hope Village was to provide a “one-stop approach to volunteer disaster response” for the most needy residents. Pastor Pat added this process was not necessarily easy. He said, “What we were doing – we were building an airplane while flying the darned thing.” Hope Village proved to be a valuable resource for vulnerable residents who were still in the area in the spring of 2012.

The Minot Public School District also received positive comments during focus groups and interviews. The district’s goal of a quick return to normalcy was appreciated by many participants. The district, with the assistance of its construction management team, was able to secure and set up 64 portable classrooms in less than 40 days. Wayne, a school district employee, noted, “The thing with our flood, it came in late June, and stayed for 30 days . . . so we didn't get into buildings until late July, and we had to start school in early September . . . there was a narrow time.”

Many parents also appreciated the emotional support provided by school staff. Ellen, a local minister’s wife, noted that her daughter struggled with the loss of their home, and sought support at school. Ellen noted, “The Jim Hill counselors were very good . . . she did open up to them.”

It was also interesting to note which individuals and organizations were not identified as key players. Millions of dollars were expended in the community through FEMA grants, yet FEMA was not identified as a key player in the recovery process. In

fact, many participants expressed anger over inequitable treatment by the federal government, and specifically from FEMA. The Small Business Administration also provided millions of dollars in low-interest loans to assist in the recovery effort, but were not mentioned as crucial to the recovery. The North Dakota State Legislature provided assistance through low-interest loans and tax rebates, but politicians received very few accolades.

A review of data gathered in focus groups and interviews showed that key players were individuals who had boots on the ground, made decisions quickly, spoke with honesty, and showed empathy toward a people in crisis. Federal and state involvement was deemed a responsibility that was expected by local residents.

Emerging Theory on Recovery From a Natural Disaster

Based on a review of current literature and the researcher's personal experiences in dealing with the Souris River Flood of 2011, the researcher felt he had a cursory knowledge of the devastation of the flood and how residents of the Souris River Valley were coping after the disaster. The researcher drew from this experience to develop issue-orientated questions. Stake (1995) found that issue-orientated questions "are not simple and clean, but intricately wired to political, social, historical and especially personal contexts . . . Issues draw us toward observing and even teasing out the problems of the case, the conflictual outpourings, the complex backgrounds of human concern" (p. 17).

Questions posed in focus groups and interviews were open-ended, allowing each participant to expound on his personal feelings, needs, and concerns. Through this

process, participants had the opportunity to share their own story, and to assess their view of community recovery.

Each focus group and interview was recorded and transcribed verbatim. Through a process of open coding, eight themes were developed. A thorough review of thematic findings yielded one common, central phenomenon: Success in recovery is dependent upon a resident's social, emotional, and financial well being before a disaster, and the ability of a resident to access agencies and organizations and receive assistance after a disaster. In Minot, residents affected by the flood in 2011 who were socially, emotionally, and financially stable before the flood responded more quickly to the disaster, and appeared to be more successful in their recovery efforts.

Olshansky and Chang (2009) noted that homeowners and business owners with the fewest resources struggled the most in the recovery process. Whaley (2009) reiterated the findings of Olshansky and Chang, stating that many individuals who experience a natural disaster, and who lack social, emotional, and economic stability are traumatized in the event of a natural disaster. This finding was a common theme noted in the review of disaster recovery literature (Bolin, 1993; Kessler, et al., 2008; Madrid & Grant, 2008). Although the researcher had a hunch that vulnerable populations were especially subject to difficulty in an evacuation and recovery process, the researcher was careful not to rush to a judgment or cast assumptions on perceptions of participants. In short, the researcher wanted the data to tell the story of flood recovery in the Souris River Valley.

The application of a grounded theory model of qualitative research fit well with the research topic for a variety of reasons. First, a grounded theory model allowed the

researcher to develop a theory that emerged through data analysis. This tendency of qualitative research was noted by May (1986) who stated, “In strict terms, the findings are the theory itself, i.e., a set of concepts and propositions which link them” (p. 148). Secondly, a grounded theory model allowed the researcher to compare qualitative data against a review of current literature without developing preconceived notions. This model allowed the researcher to gather data from a purposeful sample of participants who were directly affected by the Souris River Flood of 2011. A comparison of data was used to demonstrate congruency or conflict with current research.

Validity checks were completed throughout the research period. Two analytical strategies were used to test internal validity of data. The first test included a triangulation of personal report data, interview data, and a review of current research. The second test involved member checking through a review of interview transcripts. A comparison of data and current research indicated a high level of compatibility: Residents who struggled socially, emotionally, or economically before the flood had more difficulty during the evacuation and recovery process than residents who did not.

Limitations of Study

Creswell (2009) found that in qualitative research, the researcher attempts to build a “complex, holistic picture” (p. 15) of the topic being studied. This study involved a cross sampling of parents, teachers, and community members who were directly affected by the flood, and who still lived in Minot, North Dakota, 2½ years after the flood. Residents who left the city due to impacts of the flood were not part of this study; and therefore, the researcher relied on second-hand accounts of their stories.

A limitation of this study involved the size of the participant sample. The 68 participants interviewed in this study represented less than one-half of 1% of all individuals who were evacuated during the flood crisis. Although the sample size was relatively small, the researcher believed a point of saturation was reached, with no new information being brought forth in later interviews. Furthermore, the consistent message offered by focus group participants and interviewees provided a unique insight into the social, emotional, and economic effects of a disaster.

The researcher found that focus group participants and interviewees responded freely during interview sessions. In qualitative research, the potential exists for a participant to expound on irrelevant or fabricated information, but very few strands of outlying data were noted during transcription and initial review of data. In order to ensure that all data were given proper consideration, every transcript was coded twice during the open coding process. Outlying strands of data, or strands of data with no relevance to the topic of study, were discounted during axial coding.

Recommendations for Further Study

The purpose of this study was to evaluate the flood recovery process for the Minot Public School community after the devastating Souris River Flood of 2011, and to provide a definitive study of a community and school district following a natural disaster. The researcher identified processes involved with social, emotional, and financial aspects of recovery, and identified key players in the recovery process. Creswell (2009) noted, qualitative research “takes the reader into multiple dimensions of a problem or issue and displays it in all of its complexity” (p. 15). This study involved multiple facets of disaster

and recovery. The stories told were real-life experiences of those who were directly affected by the flood. The recommendations are based on these authentic experiences.

Through analysis of data, six areas were identified that might benefit from further examination and research: (a) critical incident command structure; (b) clear and concise communication; (c) identification of vulnerable populations, (d) federal response to disaster, (e) collaboration, and (f) leadership (see Table 2).

Table 2. Recommendations for Further Action.

RECOMMENDATIONS	MAJOR THEMES
Critical Incident Command Structure	<ul style="list-style-type: none"> • Develop a Plan • Regular Meetings With Key Players • Practice Makes Perfect • A Plan is a Moving Target
Clear and Concise Communication	<ul style="list-style-type: none"> • Communication in a Modern Age • Open Communication in Crisis • Assess Communication
Identification of Vulnerable Populations	<ul style="list-style-type: none"> • Early Identification is Key • Identification of Available Services • Development of a Service Plan • Follow-Up and Continued Support
Federal Response to Disaster	<ul style="list-style-type: none"> • FEMA Individual Assistance Program • FEMA Public Assistance Program • The Chico Effect • Federal Inefficiencies • Working With People in Crisis
Collaboration	<ul style="list-style-type: none"> • Duplication of Services • Coordination of Services • Collaboration With Federal, State, and Local Government • Elimination of Power Struggles
Leadership	<ul style="list-style-type: none"> • Pre-Planning and Organization • Short-Term Recovery • Long-Term Recovery • Mitigation of Future Damage • Continued Monitoring

Recommendation 1: Critical Incident Command Structure

A consistent management structure is crucial in the midst of crisis. Without structure, chaos is likely to ensue. Residents of Minot learned this lesson first hand. A critical incident command center is a direct link between governmental agencies, charitable organizations, faith-based volunteer groups, and citizens directly affected by a disaster. A critical incident command structure was virtually nonexistent in Minot during the flood of 2011 and recovery period.

Develop a plan.

Implementation of a critical incident command structure is dependent on the development of a crisis management plan. This plan must be understandable and easy to implement. Residents should have a cursory knowledge of the plan, and should know specific information about where the critical incident command center will be located and what services will be provided at that location. The plan should also include a hierarchy of power, indicating which individual(s) are responsible for making decisions.

Regular meetings with key players.

Regular communication is crucial for key players. This is especially important in charitable organizations that have a high turnover rate in leadership ranks. Regularly scheduled meetings are an excellent tool for keeping lines of communication open. Meeting topics should be related to pertinent information in regard to disaster and emergency response. Disaster response from other areas of the country should be evaluated and scrutinized, with learned information incorporated into local plans when feasible.

Practice makes perfect.

Practicing disaster scenarios can be an important tool in promoting disaster preparedness. These scenarios should be practiced in schools, businesses, churches, public organizations, and specifically, within city government. While no two disasters are alike, many common elements can be noted. The ability to think and act quickly is crucial during a disaster. Practice can assist city leaders to problem solve in unforeseen circumstances, and can serve as an excellent reminder of how a critical incident command structure is organized and implemented.

Collaborative disaster preparedness activities can be beneficial to a community, and can strengthen bonds between individuals, groups, and organizations. Collaborative methods to promote disaster preparedness may include, but are not limited to: (a) table top exercises at city council meetings; (b) joint crisis scenarios involving key organizations and emergency responders; (c) practice drills in schools, churches, and community organizations, and (d) public service announcements and notifications to residents.

A plan is a moving target.

Plans change on a regular basis. Disaster preparedness plans should be reviewed regularly and adjusted as needed. These plans can become outdated due to changes in laws and procedures, or due to updated research on disaster preparedness. A plan that is not subject to regular review can easily become obsolete. Key players are advised to review plans on a regular basis to ensure current trends in disaster preparedness are implemented.

Recommendation 2: Clear and Concise Communication

Clear and concise communication is crucial in the mist of a disaster. When clear communication is not readily available, residents are left to seek information from outside sources. This can lead to a plethora of misinformation floating through a community that is accepted as truth. During the Souris River Flood of 2011, the city of Minot did not have a communications director. Press conferences were held daily, and provided excellent information to the residents of Minot. However, alternate forms of communication, such as email, social media, and twitter, were accessed by residents and treated as the truth. This created many issues during the evacuation, flood, and subsequent recovery period.

Communication in a modern age.

The city's model of communication during the flood was the standard, *stand and deliver*, press conference model. This communication model provided factual information for residents. However, advancements in technology have changed the way we communicate. Social media has become a mainstay in our society. These social media sites provide users with quick, albeit not necessarily accurate information.

City leaders must recognize the rapid communication that is possible through technology, as well as a citizen's desire to have real-time access to information. City-run social media pages and websites could serve as an excellent communication tool in the midst of a crisis, and could stifle rumor and innuendo that may result from inaccurate information.

City leaders should appoint an individual to be in charge of communication during a period of crisis. The practice of providing specific information through one centralized location can limit confusion among those who are affected by a disaster.

Open communication in crisis.

Truthful and open communication in the midst of a crisis is invaluable. This theme was evident during focus group sessions and interviews. The people of Minot were seeking information during the pre-flood fight, evacuation period, and recovery period. While the truth is not always easy to take, it is generally accepted when presented in a truthful and honest manner. Lack of open communication creates an aura of mistrust in a community, and when continued, can weaken relationships between residents and government officials.

Governmental officials are well advised to take time to communicate. Open communication can break down barriers, and build positive relationships with those who are directly affected by a disaster.

Assess communication.

Communication models should be subject to a variety of assessments. During a crisis, government leaders should assess their communication structure to ensure effectiveness. After a disaster, a complete assessment should be provided to determine areas for potential improvement. Suggestions should be openly discussed at public meetings, and should be addressed by leaders who develop and monitor disaster preparedness plans.

Recommendation 3: Identification of Vulnerable Populations

The research in this study showed that many residents of the Souris River Valley were vulnerable to the effects of the flood. These individuals were not prepared to deal with evacuation or recovery. In many instances, these residents lacked the emotional, social, and/or financial capital to advocate for themselves and begin the recovery process. Many of these vulnerable residents were unable to wait for assistance, and simply left the city of Minot.

Early identification is key.

Early identification of vulnerable residents is a key component in recovery. Residents who are unable to plan and advocate for themselves are often left in the lurch. The federal government, through FEMA, was quick to provide a financial response to disaster-stricken citizens in Minot in 2011. In most instances, though, FEMA grant money did not cover the cost of repairs.

Residents who lack social, emotional, and financial capital to move forward after a disaster are prone to abandon their property and leave a community. Early identification, coupled with support in developing individual recovery plans, can assist vulnerable residents in recovery.

Identification of available services.

Residents affected by a natural disaster must know how to access services, and must know what services are available to them. A critical incident command center can serve as a centralized location for emergency service contacts.

In the midst of a natural disaster, many charitable organizations and faith-based volunteer groups arrive to provide assistance. All too often, the most vulnerable citizens

in a community are not aware of these services. With no centralized operation center, these organizations are left to falter, their assistance not always effectively used. Early identification of vulnerable residents, coupled with a plan to address social, emotional, and economic effects of a disaster, can assist in rapid movement of available services toward those who need it, aiding residents in timely recovery.

Development of a service plan.

Data in this study showed that well-connected residents were able to recover quickly in comparison to vulnerable residents. The ability to self-advocate during recovery was noted as a positive attribute.

Many vulnerable residents did not have the ability to plan for recovery. This was due, in part, to an uncertainty of what programs were available and who was available to provide assistance. The appointment of a case manager to assist in planning for vulnerable residents is a crucial step toward recovery in the early phases of recovery.

Follow-up and continued support.

A case management model is best served if the caseworker or agency assigned to a resident provides follow-up and consistent support. Research shows that many effects of a disaster are noted long after a home is rebuilt. These effects can include emotional and financial issues that are exacerbated by the reality of added expenses and stress related to rebuilding. Follow-up and support should focus on social, emotional, and economic aspects of recovery.

Recommendation 4: Federal Response to Disaster

In 2011, the federal government provided rapid financial assistance to Minot residents through FEMA. For most residents, the amount of grant money from FEMA

covered only a portion of damages to their homes. Residents were given options for low-interest loans through the Small Business Administration. Many found the process of securing funding for recovery to be a messy, bureaucratic quagmire that frustrated residents in crisis.

FEMA Individual Assistance program.

The FEMA Individual Assistance program provided a quick response to needs of residents affected by the flood. The participant's perception regarding FEMA's response was forged by day-to-day experiences they had with this federal organization. The FEMA Housing Program was well received by most participants, who appreciated the temporary housing provided to them as they rebuilt their homes. While financial and housing assistance was appreciated, many residents evaluated the FEMA Individual Assistance program based on the performance of FEMA caseworkers (how they treated residents).

A FEMA caseworker is at the front line within the FEMA response system. Interactions between FEMA workers and flooded residents were not always positive. FEMA Individual Assistance program caseworkers should be trained to recognize the sociological and psychological effects that are manifested in those who are directly affected by a natural disaster.

FEMA Public Assistance program.

The FEMA Public Assistance program was a struggle from the start. The process appeared to be based on a mistrust of local public entities. The fact that consultant services were a reimbursable expense indicated early on that the process would not be easy.

A constant shift in case management, coupled with various interpretations of the Stafford Act, created an environment that delayed decision making and future planning. Intervention from North Dakota's congressional delegation was necessary before progress could be made. The FEMA Public Assistance program would benefit from consistent case management throughout a recovery process. FEMA Public Assistance administrators and employees would also be well advised to learn about the sociological and psychological effects that are manifest in disaster survivors.

The "Chico Effect."

Chico was a FEMA worker who was assigned to the Minot area. He did not have managerial responsibilities, nor did he hold any real power in the FEMA organization. Yet, Chico's name was mentioned during many focus groups. Chico understood how to work with people in crisis. He readily supplied his cell phone number, and was always quick to respond in the event of an emergency. Chico strived to make the flood disaster a little more bearable for residents of the Souris River Valley. He didn't cite the Stafford Act or give excuses why he could not provide assistance. He just delivered.

FEMA employees could learn a little bit about Chico's style of dealing with people in crisis. He provided a positive aura that promoted a sense of security for valley residents in crisis. It is imperative that FEMA caseworkers understand the social and emotional effects of a natural disaster; and furthermore, they need to work to ensure that their actions promote a sense of trust and security.

Federal inefficiencies.

Several inefficiencies were noted in the federal response to the Souris River Flood of 2011. Many residents expressed frustration with the interpretation of federal laws that

appeared to inhibit progress toward recovery. These frustrations were especially noted in dealing with multiple federal organizations that followed a different set of rules and procedures.

Federal rules and procedures are undoubtedly complicated. Increasing the ability of the federal government to provide internal collaboration to ensure equal and understandable access to a variety of programs would make the federal disaster response program stronger. In turn, the federal government should collaborate closely with state agencies to ensure residents have a clear understanding of what programs are available in order to maximum potential benefits of available programs.

Working with people in crisis.

People in crisis experience a plethora of emotions. The stress related to a natural disaster can create many challenges for residents who are directly affected. Research shows this effect can range from irritability to mental illness. FEMA workers who developed a good rapport with flooded residents were able to recognize the importance of working with people in crisis. In the eyes of an individual who is suffering as the result of a natural disaster, the FEMA caseworker is the face of the FEMA organization.

FEMA workers should receive specific training in crisis management, as well as implementation of strategies designed to assist communication efforts with people in crisis.

Recommendation 5: Collaboration

In the midst of a natural disaster, charitable organizations and faith-based volunteer groups that work collaboratively can capitalize assistance within the community and limit duplication of services. Effective collaboration did not appear

present in Minot during the early days of recovery. A lesson can be learned from the unsuccessful early response efforts in Minot.

Duplication of services.

Charitable organizations and faith-based volunteer groups must know their specific role in recovery. In turn, each organization must be aware of the skills brought forth by every group. When role confusion is present, organizations might omit crucial services while providing duplicate services in other areas.

Organizations that collaborate during non-crisis periods operate more efficiently during a crisis. During a disaster, local charitable organizations should meet on a regular basis and collaborate with city and county leaders to develop a plan of action that eliminates duplication of services.

Coordination of services.

Each volunteer group and charitable organization brings a certain skill set to a disaster. Lack of coordination can create chaos, which might result in turf wars between agencies. In order to ensure that all resources are maximized, services must be coordinated.

Individual organizations provide a specific service, but are not uniquely qualified to spearhead recovery efforts in a collaborative manner. Local governmental involvement is a crucial component in this process. City and county officials are advised to provide a coordinator for volunteer and charitable services to avoid conflicts of interests, services, and turf wars. Multi-agency coordination should be a regular agenda item when agencies meet to discuss and review disaster preparedness plans.

Collaboration with federal, state, and local government.

Disaster can create an environment of unruliness. While the intentions of charitable organizations and faith-based volunteer groups are unquestionably authentic, in 2011, compliance with local, state, and federal laws and procedures in Minot was sometimes difficult. Through FEMA's disaster response, each individual affected by the Souris River Flood of 2011 was identified and a caseworker assigned. Pertinent information and damage assessments were passed on to other federal organizations, such as the Small Business Administration. In many instances, vulnerable residents were either hesitant to or unable to plan and move forward with recovery efforts.

The Hope Village concept provided a link between FEMA casework files and assistance through charitable organizations and faith-based volunteer groups. The Hope Village team accessed FEMA records, and worked with vulnerable residents to secure what was needed to jumpstart the recovery process. This intervention was not limited to financial assistance. Interventions were also provided to ensure residents were socially and emotionally able to handle the challenges of recovery. Hope Village was not operational until April of 2012. For many, this intervention came too late.

The Hope Village model was a successful intervention for vulnerable residents. Early intervention and collaboration with local, state, and federal partners can provide a swift response to vulnerable residents, and can ensure that charitable agencies and faith-based volunteer groups are assigned to those who most need assistance.

Elimination of power struggles.

Every charitable organization and faith-based volunteer group that journeyed to Minot came with a mission. This mission varied from organization to organization.

When an organized command structure was virtually non-existent, these organizations were left to flounder. This was evident in the early days of recovery when a power struggle developed between the Red Cross and the Salvation Army.

The absence of structure promoted disorder and caused role confusion. Power struggles are best avoided when organizations work collaboratively before a disaster, and operate under a critical incident command director who facilitates the presentation of services and defines the role each organization will play. In the most simple of terms: A disaster is owned by the people who are most affected. The local municipality must take a leadership role, defining and implementing the scope of service provided by charitable organizations and faith-based volunteer groups.

Recommendation 6: Leadership

In the midst of a natural disaster, residents look toward local leadership for support, encouragement, and answers. Mayor Curt Zimbleman, Public Works Director Alan Walter, and North Dakota National Guard Adjutant Major General David Sprynczynatyk received high praise from flood-stricken residents during the evacuation and flood period. As the community shifted from disaster to recovery, many residents became frustrated with city officials' response to the disaster, expressing their opinion that city officials had forgotten about residents affected by the flood.

Pre-planning and organization.

It is difficult to plan for a natural disaster. The unique attributes of various types of disaster make it unfeasible to plan for every possible event. However, certain common threads are evident in disaster response, and can be planned for accordingly.

The city of Minot spent a great deal of effort fighting the Souris River before the flood. Little emphasis was placed on disaster preparedness and the development of a response plan. When the final evacuation was ordered, there was little ability for the city to provide assistance to vulnerable citizens in need. This effect was exacerbated by the lack of a critical incident command center and absence of a communication director for the city of Minot. When the state offered the services of a communication director, city leaders politely rejected the offer.

Pre-planning is a key component in disaster response. The organization of a critical incident command center is equally important. Failure to plan and centralize authority can result in chaos. In the midst of a natural disaster, a local municipality must take the lead in disaster response, and plan for recovery accordingly. Pre-planning, coupled with effective implementation and organization of available services when a crisis hits, can promote a stronger response to disaster.

Short-term recovery.

Short-term recovery involves restoration of critical services in the period immediately following a disaster. Honest and open communication is an important element of short-term planning. The ability for a city to implement a short-term recovery plan is hampered when official communication is not readily available from community leaders. This situation can become even more convoluted when federal interventions are implemented.

Initial FEMA interaction with residents affected by Minot's flood is a prime example of failed communication. Residents were contacted by a FEMA worker, and were told to meet the worker in a parking lot somewhere in the city. This random phone

contact made many residents uneasy, and created a certain amount of trepidation within the community. An open line of communication provided by city officials could have forewarned residents of this FEMA interaction, long before the call was received.

A primary goal during short-term recovery is to return a community to some sort of normal living. The Minot Public School District was determined to provide a normal educational experience for children early on. Although many families were still struggling with recovery efforts, the school district worked to provide as normal of an experience as was possible. This normal school experience was well received throughout the valley.

People in crisis are desperate for answers. A lack of factual information in the short-term recovery phase of a disaster can add to the frustration of those affected by the disaster. A city in the midst of a natural disaster is best advised to assure a short term recovery plan is in place, and provide accurate, detailed information to citizens in regard to restoration of critical services, and other pertinent recovery information.

Long-term recovery.

Recovery is difficult to define, and even more difficult to assess. A general summation of recovery definitions indicate that recovery is complete when the community is in as good of shape, or better shape, than before the disaster. The recovery period can last for many years.

Long-term recovery involves extensive planning and implementation of interventions. The inability to move quickly toward a long-term recovery plan slows the recovery process, and only adds to frustration of those who have been negatively

impacted by a disaster. This frustration was noted by Minot residents who were continuing to recover from the Souris River Flood of 2011 at the time of this report.

Long-term recovery is designed to be a collaborative process with a high level of community input. Engineers worked diligently to present an enhanced flood protection plan to the city of Minot. A series of public meetings were held in the fall of 2011. But, very little discussion has been held since then, leaving residents to wonder about the future of the valley.

A city planning for long-term recovery must continue to allow open dialogue, and continue to evaluate plans and procedures. Input should be sought, and concepts should be vetted for potential implementation. When fiscal restrictions diminish the practicality of an idea or concept, the public should be informed. Planning for long-term recovery is a long-term process. Open communication is necessary to develop and implement a successful plan.

Mitigation of future damage.

Mitigation of future damage is a critical element of recovery. Many residents were frustrated by Minot officials' slow response in developing an enhanced flood development plan. Some residents delayed rebuilding plans as they waited for a decision. Others have continued to wait in the valley for a potential buy-out of their property.

The fear of future flooding was a common theme throughout focus group sessions and interviews. This fear was exacerbated by social, emotional, and economic strain placed on residents who rebuilt their homes without reassurance of protection from further flooding. Many also felt city leaders have not appeared concerned about implementation of an enhanced flood protection plan.

Not every natural disaster can be avoided, but civic leaders can continue to work toward a prudent and responsible mitigation plan. A city in the midst of recovery should alleviate concerns of future damage while continuing to provide open dialogue in regard to hazard mitigation plans.

Continued monitoring.

The Souris River Flood of 2011 was a devastating event that affected nearly one-fourth of the city's existing population. Many flooded residents received assistance from friends and family outside the valley. In many instances, this assistance was in the form of volunteer labor or a family member or friend providing a place to live during the crisis period.

Many flooded residents noted that, after a period of time, non-affected residents went back to life as usual. A similar phenomenon was noted within the city government. The city of Minot continued to grow after the flood. According to many residents affected by flooding, the city appeared to be more concerned about expanding infrastructure to meet the needs of a growing community than flood recovery. Many participants commented that very little discussion in regard to flood recovery was held during city council meetings. Therefore, it was perceived that the city of Minot had forgotten about its flooded affected residents. This assumption exacerbated the notion that a disconnect had developed between flood affected and non-flood affected residents.

The management of a city is no doubt a difficult task, especially a city that is dealing with a natural disaster while experiencing rapid growth. A city dealing with citizens in crisis should continue to address recovery and hazard mitigation on a regular

basis. Such action can provide an assurance to flooded residents that recovery is the responsibility of an entire community.

Implications for a School District Recovering From a Natural Disaster

The Souris River Flood of 2011 had a very definite impact on the community of Minot. This impact was felt by residents, business owners, and public organizations that are supported by the taxpayers, including the city of Minot, the Minot Park District, and Minot Public Schools.

The Minot Public School District's goal of getting every student into a temporary facility by the start of the school year proved to be a positive step in recovery of the school district. Many parents acknowledged their appreciation for free meals during the 2011-2012 school year, as well as the staff's willingness to empathize with their children during a very stressful time. In general, the district worked to ensure each child would receive as normal of a school experience as was possible.

The school district is only part of an entire community. The researcher, serving as superintendent of Minot Public Schools, recognized that a normal school experience was an important component of community recovery, and furthermore, acknowledged the importance of understanding social, emotional, and financial needs of people in crisis. Minot Public Schools had many struggles with FEMA during their initial recovery. These issues were addressed through collaborative discussions with the school district, FEMA, and the North Dakota Department of Emergency Services, and were not broadcast throughout the school community. The goal of the school district was to reassure families in recovery that Minot Public Schools would maintain educational services and would manage the recovery of the school district in a manner that would not

impede community recovery or cause stress for flood-stricken families in the Souris River Valley.

The Minot Public School District's responses to the Souris River Flood of 2011 and subsequent recovery efforts were generally well received. However, research and data gleaned in this study can have direct implications for school districts in crisis. The study provides specific disaster response recommendations in dealing with:

1. The importance of developing a critical incident command center;
2. A need for clear and concise communication;
3. The expeditious identification of vulnerable populations;
4. Effectively working with federal agencies responding to a disaster;
5. The importance of collaboration; and
6. A need for strong leadership.

Each recommendation should be addressed as a district plans short-term and long-term recovery goals.

While school district leaders have little ability to prevent or control the direct effects of a natural disaster, they can be key players in recovery efforts.

Recommendations outlined in this study will assist school leaders in developing a plan that considers social, emotional, and financial effects that ripple through a school community as a result of a natural disaster.

Final Thoughts

This research study was designed to better understand social, emotional, and economic effects of a natural disaster on a community. This qualitative study examined the thoughts, feelings, and perceptions of several Minot, North Dakota, residents who

were directly affected by the Souris River Flood of 2011. The participants who took part in this study expressed little reluctance in sharing their stories. In fact, they appeared to find solace in speaking with others who had shared their experience.

A natural disaster is a terrible event. Man has tried for centuries to control geographical systems with limited success. Recent man-made attempts to control the Souris River have resulted in the worst flooding event in recorded history. The destruction left in the wake of the Souris River flood of 2011 was devastating.

It is obvious that man cannot control nature and eliminate all fear and risk of natural disasters from occurring. However, man can control how a society will react to disaster. The citizens of Minot had an interesting story to tell. Their firsthand accounts of events surrounding the Souris River Flood of 2011 painted a picture of what disaster and recovery can be like. The participants in this study presented their views of recovery without pretense. The story of Minot, North Dakota, reaffirms the importance of timely identification of vulnerable residents, the application of appropriate interventions, the crucial role of leaders in disaster preparedness, evacuation, and recovery, and the importance of communication and collaboration in the midst of a disaster.

APPENDICES

Appendix A
Flood Crests at Broadway Bridge, Minot, North Dakota

Date River Crested (Year, Month Day)	Cubic Feet Per Second (CFS)	Elevation (Feet)
1904, April 20	12,000	1555.15
1916, May 6	4,260	
1923, April 30	3,450	
1925, April 18	3,450	
1927, April 30	3,700	
1948, May 17	2,700	
1949, April 6	2,250	
1951, May 16	2,280	
1969, April 18	6,010	1555.40
1970, May 12	3,320	
1974, April 25	3,530	
1975, May 13	5,700	
1976, April 17	9,350	1556.08
1979, May 9	5,960	
1996, April 12	2,600	1544.06
1999, April 19	2,680	
2009, April 14	3,370	
2011, June 25	26,900	1561.66

Key:

Action Stage	1548 ft.
Flood Stage	1549 ft.
Moderate Flood Stage	1551 ft.
Major Flood Stage	1555 ft.

**Appendix B
Consent to Participate**

**THE UNIVERSITY OF NORTH DAKOTA
CONSENT TO PARTICIPATE IN RESEARCH**

TITLE: *Down by the Riverside: A Study of the Minot Public School District Recovery Effort After the Flood of 2011*

PROJECT DIRECTOR: *Mark Vollmer*

PHONE # *701-857-4422*

DEPARTMENT: *Department of Educational Leadership*

STATEMENT OF RESEARCH

A person who is to participate in the research must give his or her informed consent to such participation. This consent must be based on an understanding of the nature and risks of the research. This document provides information that is important for this understanding. Research projects include only subjects who choose to take part. Please take your time in making your decision as to whether to participate. If you have questions at any time, please ask.

WHAT IS THE PURPOSE OF THIS STUDY?

You are invited to be in a research study about the recovery of the Minot Public School District after the Flood of 2011 because you were identified as an individual who was directly affected by this natural disaster.

While research in regard to natural disaster abounds; very little research in regard to school district recovery has been completed. The purpose of this research study is to determine what specifically constitutes *recovery* of a natural disaster.

HOW MANY PEOPLE WILL PARTICIPATE?

Approximately 65 people will take part in this. Approximately 55 people will be asked to take part in focus groups that will be held at Longfellow Elementary School, located at 500 16th St. NW in Minot, North Dakota. Approximately 10 individuals will be interviewed at a location selected by the interviewee.

HOW LONG WILL I BE IN THIS STUDY?

Your participation in the study will last for no longer than 120 minutes.

Approval Date:	JAN 16 2014
Expiration Date:	JAN 15 2015
University of North Dakota IRB	

Date: _____
Subject Initials: _____

WHAT WILL HAPPEN DURING THIS STUDY?

Participants will be asked a series of questions related to the Minot Public School District recovery efforts following the Souris Valley Flood of 2011. Participation is voluntary, and participants may elect to opt-out at any time.

All focus group participants will be provided a reasonable assurance of anonymity. Individuals who participate in the formal interview process will be referred to in a manner that will not unveil their position or identity.

WHAT ARE THE RISKS OF THE STUDY?

The research poses no risk to participants. Participants who are uncomfortable with questions, comments, or discussion points may opt out at any time.

WHAT ARE THE BENEFITS OF THIS STUDY?

You will not benefit personally from being in this study. However, we hope that, in the future, other people might benefit from this study, as your experiences in the flood recovery effort may assist others who experience a natural disaster.

ALTERNATIVES TO PARTICIPATING IN THIS STUDY

No alternatives to participation are available.

WILL IT COST ME ANYTHING TO BE IN THIS STUDY?

You will not have any costs for being in this research study.

WILL I BE PAID FOR PARTICIPATING?

You will not be paid for being in this research study.

WHO IS FUNDING THE STUDY?

The University of North Dakota and the research team are receiving no payments from other agencies, organizations, or companies to conduct this research study.

Approval Date:	JAN 16 2014
Expiration Date:	JAN 15 2015
University of North Dakota IRB	

CONFIDENTIALITY

The records of this study will be kept private to the extent permitted by law. In any report about this study that might be published, you will not be identified. Your study record may be reviewed by Government agencies, the UND Research Development and Compliance office, and the University of North Dakota Institutional Review Board.

Any information that is obtained in this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. [You should know, however, that there are some circumstances in which we may have to show your information to other people. For example, the law may require us to show your information to a court or to tell authorities if we believe you have abused a child, or you pose a danger to yourself or someone else.] Confidentiality will be maintained by means of providing a secure location for all digital recordings and transcripts. Participation forms will be kept separate from recordings. No names or other forms of identification will be used during the transcription of the focus group sessions or interviews.

If we write a report or article about this study, we will describe the study results in a summarized manner so that you cannot be identified.

Recordings will be maintained for a period of three years following the completion of research.

IS THIS STUDY VOLUNTARY?

Your participation is voluntary. You may choose not to participate or you may discontinue your participation at any time without penalty or loss of benefits to which you are otherwise entitled. Your decision whether or not to participate will not affect your current or future relations with the University of North Dakota.

CONTACTS AND QUESTIONS?

The researcher conducting this study is Mark Vollmer. You may ask any questions you have now. If you later have questions, concerns, or complaints about the research please contact *Mark Vollmer* at **701-857-4422** during the day and at **701-500-9833** after hours. You may also contact Dr. Pauline Stonehouse at **701-777-4163**.

If you have questions regarding your rights as a research subject, you may contact the University of North Dakota Institutional Review Board at **(701) 777-4279**.

- You may also call this number about any problems, complaints, or concerns you have about this research study.

Approval Date: <u>JAN 16 2014</u>
Expiration Date: <u>JAN 15 2015</u>
University of North Dakota IRB

- You may also call this number if you cannot reach research staff, or you wish to talk with someone who is independent of the research team.
- General information about being a research subject can be found by clicking “Information for Research Participants” on the web site:
<http://und.edu/research/resources/human-subjects/research-participants.cfm>

I give consent to be audio-taped during this study.

Please initial: **Yes** **No**

I give consent for my quotes to be used in the research; however I will not be identified.

Please initial: **Yes** **No**

Your signature indicates that this research study has been explained to you, that your questions have been answered, and that you agree to take part in this study. You will receive a copy of this form.

Subjects Name: _____

Signature of Subject

Date

I have discussed the above points with the subject or, where appropriate, with the subject’s legally authorized representative.

Signature of Person Who Obtained Consent

Date

Approval Date: <u>JAN 16 2014</u>
Expiration Date: <u>JAN 15 2015</u>
University of North Dakota IRB

Appendix C
General Questions for Focus Groups

- Tell me about your personal experience with the Souris River Flood of 2011.
- Where is your home located in Minot?
- Which school did you reside closest to?
- Where is your place of business/employment, and was this location in a flooded area?
- When did you realize the Souris River Valley was going to flood?
- Where were you at when the sirens sounded on June 22, 2011?
- How did the sound of sirens make you feel?
- How did you, your family members, or friends (including children), react to the reality of flooding in Minot?
- How about students in your school?
- What were you able to remove from your residence before the flood?
- How did you make arrangements to remove, haul and store items from your residence?
- How many of your neighbors and friends were directly affected by the flood?
- Many provided and offered assistance during the flood and initial recovery period. Who do you remember as being “significant helpers” during this period?
- Where did you stay during the flood and initial recovery period?
- What emotions did you experience during the evacuation period? Recovery period?
- How did you monitor what was going on in the valley during the flood?

- Did you seek counseling during the immediate crisis, or during the recovery period?
- What do you think caused the Souris River Flood of 2011?
- Tell me a little bit about your experience with FEMA:
- How would you rate the response from FEMA?
- What type of assistance did you receive from FEMA?
- What type of assistance did you receive from the Small Business Administration (SBA)?
- If you lived in a FEMA trailer, please share a little bit about the experience.
- What type of assistance did you receive from the city?
- What type of assistance did you receive from the state?
- What type of financial assistance was the most beneficial to you?
- How long did it take for you to rebuild your residence?
- How were you treated by workers and contractors who assisted in the clean up and repair of your property?
- How did your employer react to your situation?
- Who were the most effective leaders of our community during the crisis and response?
- What made those individuals stand out in your opinion?
- In your opinion, what are the chances of another flood happening in the future?
- Have you experienced any signs of depression or anxiety during or since the flood?
- Did you receive medical attention due to these feelings?

- Was it easy to seek medical attention?
- Do you have friends who experience emotional difficulties since the flood?
- Is there any specific sensory item (touch, sound, smell, sight) that reminds you of the flood?
- If so, how does that make you feel?
- Have you noticed this with friends or children in the community?
- In your opinion, when will the residents of the valley be “recovered”?
- How could recovery been handled differently to ensure a quicker or more efficient recovery?
- We have certainly covered a lot of topics this evening. Is there anything else you would like to cover or share?

Appendix D
Permission to Conduct Study in Minot School District #1



Jim Rostad
Minot Public School Board President
(701) 833-8511
215 2nd St. SE
Minot, North Dakota 58701

July 22, 2012

Mr. Mark Vollmer, Superintendent
Minot Public School District #1
215 2nd St SE
Minot, ND 58701

Mr. Vollmer:

I am writing to give you permission to use data from post-flood surveys and other district information directly related to the Souris Basin Flood of 1969 and 2011. This includes all unpublished documentation relating to both flood events.

I look forward to the opportunity to visit with you about the results of your study upon its completion. There is a real value in ensuring our school district gathers pertinent information in regard to this devastating natural disaster, as well as providing a history of flooding in the city of Minot.

It is my hope that you chronicle the events of 2011 and provide a detailed timeline of events during, and leading up to this horrific flood.

On behalf of the Minot Public School District, I offer our full support of your research project.

Sincerely,

A handwritten signature in black ink that reads "Jim Rostad". The signature is written in a cursive style with a large initial "J".

Jim Rostad, President, Board of Education
Minot Public School District #1

Appendix E
Poster Soliciting Volunteers for the Study

RESEARCH STUDY

Will You Help?

Mark Vollmer, a doctoral candidate in the Educational Leadership Program at the University of North Dakota, is conducting a research study that aims to understand the social, emotional, and economic effects of the **Souris River Flood of 2011.**

Mr. Vollmer will be conducting Focus Groups with individuals who were directly affected by the Souris River Flood of 2011. This includes parents of school-aged children, teachers, and community patrons (who do not have students currently enrolled in schools) who live in a flood affected area.



These Focus Groups are entirely voluntary -participants can stop whenever you want to without any consequence!

While there are no direct benefits from volunteering, it may help school district leaders when responding to the negative effects of a natural disaster.



Do you know a friend, co-worker or acquaintance that might be a good candidate to take part in a focus group?

If so, contact Mark Vollmer by phone at 701-857-4422; by E-mail: Mark.Vollmer.1@sendit.nodak.edu; or by mail at Mark Vollmer, 1519 18th Ave. SW, Minot, North Dakota 58701.

Appendix F
Codes and Descriptive Examples

Code	Definition	N	Example of Participant's Words
Acceptance	Artifacts that describe how flooded residents learn to accept the damage done to property.	20	<i>"We still have a roof over our head. . . . We still have food on our table . . . financially . . . we are going to get through this, but there are some that struggle with that."</i>
ACE: Army Corps of Engineers	Artifacts that describe the role of the Army Corps of Engineers in the flood fight and subsequent recovery.	3	<i>"They deal with this kind of thing all over the country for a number of years, and they come in and start running the show."</i>
All Affected	Artifacts that describe how all individuals in the Minot area were affected, in some way, by the flood.	3	<i>"I think so, and I feel like they do. Because you think of all the people who had their garages full of other people's stuff . . . and I know we had stuff at five different places in town. I think they would have to be pretty dense to not understand."</i>
Assistance: Emergency Shelters	Artifacts that describe the experience of living in Red Cross Emergency Shelters during the flood crisis.	2	<i>"That was evident in the fact that we didn't need a Red Cross Center. . . . How many people actually slept at the dome? Hardly anybody."</i>
Assistance: Faith-Based Groups	Artifacts that describe assistance from faith-based organizations during the recovery process.	19	<i>"I think the ecumenical community really stepped it up."</i>
Assistance: Hope Village	Artifacts that describe the role Hope Village played in flood recovery.	13	<i>"For those families that came through case management, we had a common goal . . . not to victimize the victims anymore."</i>
Assistance: Red Cross	Artifacts that describe the role of the Red Cross during the flood and recovery period.	8	<i>"We had donations come in from everywhere. I saw donations from California, Florida, and many states, as well as donations from around the world – that was pretty neat, to see the outpouring of support from everywhere."</i>

Appendix F. cont.

Code	Definition	N	Example of Participant's Words
Assistance: Salvation Army	Artifacts that describe the role of the Salvation Army during the flood and recovery period.	40	<i>"If you want a cup of hot coffee close to the front, you didn't get it from the Red Cross, you got it from the Salvation Army."</i>
Between Evacuations	Artifacts that describe activity between evacuation periods.	3	<i>"We cleaned our entire house. . . . We even painted our daughter's bedroom."</i>
Bureaucratic Red Tape	Artifacts that describe issues of bureaucratic red tape, primarily in dealing with federal recovery programs.	42	<i>"We would get a call, and they would tell us they needed a piece of paper that didn't really mean anything, but they wanted it. . . . Those types of things were frustrating."</i>
Business – Effects on	Artifacts that describe the effect on business owners in the Souris River Valley.	7	<i>"Some were rental houses that are owned by people, who honestly, are still ticked off at the city or the government, and they say, 'We are going to board them up and leave them until we have to deal with them.'"</i>
Cause of Flood	Artifacts that describe the alleged causes of the Souris River Flood of 2011.	37	<i>"I do think it was human error – We had snow storms in Canada, but this can't be that much different."</i>
Change in Lifestyle: Flood Recovery	Artifacts that describe how victim's lifestyles changed as a result of the flood.	17	<i>"Our home was flooded, our church was flooded, every one of the kids activities were flooded – gymnastics, dance, scouts. . . . The only thing that was not affected was my husband's job."</i>
Changing Community	Artifacts that describe how the community has changed since the flood.	9	<i>"That's the ugly part – it changed the personality of our city to a certain extent."</i>
Children: Significant Helpers During Recovery	Artifacts that describe how children took an active role in the recovery and rebuilding of homes in the Souris River Valley.	2	<i>"And we depended on our kids so much. . . . They learned how to swing a hammer and a crow bar . . . because they had to, because they were a part of it."</i>

Appendix F. cont.

Code	Definition	N	Example of Participant's Words
Children: Privy to Adult Conversations	Artifacts that describe how children were often privy to adult conversations during the flood recovery process.	10	<i>"I was mad for a long time, but it really doesn't matter. . . . When I heard my kids repeat some of my statements, I said, 'Enough of that. '"</i>
City Recovery: Negative	Artifacts that describe negative aspects of the city's recovery efforts.	48	<i>"A lot of discussion about recovery and flood diversion projects . . . but not a lot happening."</i>
City Recovery: Neutral	Artifacts that describe neutral aspects of the city's recovery efforts.	2	<i>"It took time, and it was done on their time – the city had a lot of work done getting the specs and plans done on it, and there was a lot that had to be done, and it took time to put it all together."</i>
City Recovery: Positive	Artifacts that describe positive aspects of the city's recovery efforts.	10	<i>"I have to say . . . The police, the fire fighters, my gosh, they were amazing . . . 24/7 . . . their job was endless . . . the kinds of things they had to monitor."</i>
Communication Issues: Federal, State, and Local Agencies	Artifacts that describe communication issues between federal, state and local governmental agencies before, during, and after the flood.	8	<i>"What we did at the state – the state designated a flood recovery coordinator, and we wanted to have a city/county recovery coordinator. Zimmerman was designated, but was basically ignored by the city. So, we tried to have a more coordinated effort, and that didn't work."</i>
Communication: Flood Period	Artifacts that describe communication to citizens during the flood period.	11	<i>"We wanted somebody on staff from Day 1, to coordinate communications, and it didn't happen."</i>
Communication: Flood Protection	Artifacts that describe communication to citizens on flood protection plans proposed by state and local government agencies.	2	<i>"I think the federal and provincial officials did the best they could with the information they had at the time"</i>

Appendix F. cont.

Code	Definition	N	Example of Participant's Words
Communication: Recovery Period	Artifacts that describe communication to citizens in regard to flood recovery.	5	<i>"I think another cardinal principal of crisis management is providing accurate and consistent information in an understandable fashion, which means in writing, in oral form and community. Consistency is the key – you don't want rumors to start, or people hearing things differently."</i>
Communication: River Management	Artifacts that describe communication to citizens in regard to management of the river system.	19	<i>"I agree that communication between agencies, on both sides of the borders . . . that communication was stressed, and there appeared to be a lot of agencies doing a lot of different things."</i>
Communication: Rumor/Innuendo	Artifacts that describe rumor and innuendo that spread during the pre-flood, flood, and post-flood periods.	31	<i>"Those were built as flood control dams and because they are there . . . they get used for recreation. If you use them for flood control, then empty them."</i>
Communication: Social Media	Artifacts that describe the role of social media as a communication tool by citizens of Minot during the pre-flood, flood, and post-flood period.	8	<i>"There were rumors of looting and things like that going on, and yes, there was some looting going on . . . and I think that is where we really took a bad turn with social media."</i>
Conditions in Valley: Post Flood	Artifacts that describe the effect on the valley after the floodwater receded.	4	<i>"I remember recording something, and I had these big old clod-hopper boots on, and in the house was a 3 or 4 inch layer of mud, and there was smoke alarms going off in the neighborhood, and it was the only sound . . . It was just dead."</i>
Consultants Used in Recovery	Artifacts that describe the role of consultants used in the recovery process.	16	<i>"I would do more research and make sure that I found one that had a good relationship – I'd weigh it out a lot more carefully . . . I'm not sure, I think the state relationship, for us, was more important than the consulting firm."</i>

Appendix F. cont.

Code	Definition	N	Example of Participant's Words
Contractors: Fraud	Artifacts that describe fraudulent activity exemplified by contractors during the recovery period.	10	<i>"I know personally, someone in our neighborhood who lost \$20,000.00 . . . paid them upfront, and they disappeared . . ."</i>
Contractors: Positive Experience	Artifacts that describe positive experiences with contractors during flood recovery	14	<i>"The contractor that fixed up my house ended up renting it from me, and it worked out fine"</i>
Contractors: Price Gouging	Artifacts that describe examples of price gouging by contractors and suppliers during the recovery period.	23	<i>"Even our local people jacked their prices on everything . . . I mean, I couldn't believe like a hot water heater, they were talking \$1,100.00 or \$1,200.00 to install a hot water heater"</i>
Contractors: Shoddy Workmanship	Artifacts that describe examples of shoddy workmanship presented by contractors during the recovery period.	16	<i>"So, I did find someone out of Minnesota . . . they were very nice people, and they worked fast . . . but \$100,000.00 later, I have to put money into it because my pipes freeze . . . they put the pipes against the wall and they freeze . . . and now I have to tear out my kitchen cupboards and replace it"</i>
Contractors: Corrupt Practices	Artifacts that describe examples of corrupt practices exemplified by contractors during the recovery period.	9	<i>"I hired a friend of over 30 years . . . went to elementary school with him . . . he was nothing but trouble. He walked away with about \$23,000.00 of unfinished work . . . haven't talked to him for years."</i>
Contractors: Excessive Billing	Artifacts that describe examples of excessive billings (including multiple billings for a single service) by contractors during the recovery period.	5	<i>"The only guy I can complain about is the guy who did my taping, texturing, and painting . . . who was excellence, but he screwed us out of money. . . . He was too expensive . . . at the time, I wanted it done, and I was at the point that I wasn't doing any more work."</i>

Appendix F. cont.

Code	Definition	N	Example of Participant's Words
Crisis Management During Flood	Artifacts that describe crisis management efforts during the flood period.	10	<i>"During the press conference, the one I listened to was Sprynczynatyk . . . because I knew that what he said was the truth, and he was going to help us the best he could, and for lack of any better words, he was going to take no **** from nobody and tell us exactly the way it was."</i>
Crisis Management During Recovery	Artifacts that describe crisis management efforts during the recovery period.	6	<i>"What we were doing – we were building an airplane while flying the darned thing. But, leaders stepped up to lead, and that was a strong, powerful thing."</i>
Critical Incident Command Structure: Negative	Artifacts that describe negative perceptions of the critical incident command structure.	5	<i>"The critical incident command structure was not able, for whatever reason, to be carefully laid out enough to ensure who was in charge and part of that was that Ward County did not have a disaster response coordinator; they had a person in that title, but there was really nobody there to do it."</i>
Damage Assessment: Critical Nature of	Artifacts that describe the critical nature of damage assessment in regard to flood recovery and qualification for federal funding programs.	6	<i>"It was crucial and it was a mess. They screwed that up right from the beginning, and it took a long time to get that cleaned up and cleared up."</i>
Death: Stress Related	Artifacts that describe the belief that stress was a factor in the death of valley residents following the flood.	8	<i>"We have some other friends who have died, and I know it was stress related to the flood. . . . They lost their house . . . she had just retired from MPS."</i>
Decision Making	Artifacts that describe how citizens of the valley worked to arrive at an agreeable decision in regard to flood recovery.	22	<i>"We were getting our house paid for . . . and we were living with my parents . . . an hour north of here. My dad was . . . even before it actually flooded, he just kept pushing us . . . 'what are you going to do?' . . . and that was the hardest part."</i>

Appendix F. cont.

Code	Definition	N	Example of Participant's Words
Delayed Repair	Artifacts that describe how flooded residents had to, or chose to, delay repair on flooded property.	12	<i>"We waited until November of that year, until they decided they were not going to do anything with the Ramstad loop, then we could fix up our home . . . so we were kind of behind schedule and then had to make a last minute decision if we were going to fix up our house."</i>
Denial: Pre-Flood & Evacuation	Artifacts that describe the denial flood victims exemplified during the pre-flood and evacuation period.	18	<i>"I distinctly remember the dad walking around, drinking gin and tonics, basically laughing at us, because we were moving his stuff . . . and then finally, at about 8:30, it was starting to get dark, and then it hit him – he panicked."</i>
Disconnect with Reality	Artifacts that describe a disconnect with reality for victims during the pre-flood, flood, and post-flood periods.	31	<i>"You probably all thought the same thing I thought . . . that there was no water inside."</i>
Disconnect: Victims v. Non-Victims	Artifacts that describe how flood victims often felt disconnected from friends and family who did not flood.	32	<i>"I don't even feel like Minot was all in it together . . . because not long after the flood, and I work at the mall, and I heard people say . . . aren't you glad the flood is over? It's like, it's not over, for us, the flood is just starting."</i>
Dispute: Information Aimed at Disputing Rumors	Artifacts that describe how civic leaders attempted to end rumors and false statements.	3	<i>"It is important that the storage that we bought and paid for was above and beyond what the Canadians intended in the first place . . . so they were never intended to be dry dams . . . that is a misnomer."</i>
Donor Gifts: Corporate	Artifacts that describe corporate donations during the pre-flood, flood, and post-flood periods.	10	<i>"Well, here at Longfellow, this seems like kind of a silly thing, but people just wanted to help . . . one of the things that just comes to mind is that Happy Joe's sent pizza for our students once a month."</i>
Donor Gifts: Individuals	Artifacts that describe individual donations during the pre-flood, flood, and post-flood periods.	2	<i>"I remember crying because I had a gift card so I could bring chicken out to the house . . . working and crying in my car over chicken . . . really?"</i>

Appendix F. cont.

Code	Definition	N	Example of Participant's Words
Elderly: Effects on	Artifacts that describe how the flood affected elderly citizens of the valley.	44	<i>"Two houses down were elderly, and we were going through houses before we left . . . they made the beds and left everything in the fridge. They took their meds, a suitcase, and went to a nursing home in Bismarck . . . and now have passed away."</i>
Emotional Effect: Adults	Artifacts that describe the emotional effects experienced by adults during the pre-flood, flood, and post-flood periods.	60	<i>"I also had those moments where it was tough to make it. . . . We would get up at 6:30 every morning, have some breakfast at 7:00 . . . get my big cup of coffee, and I would go down and sit on the porch and have my cry . . . a big cry."</i>
Emotional Effect: Preschool	Artifacts that describe the emotional effects experienced by pre-school children during the pre-flood, flood, and post-flood periods.	9	<i>"I had a little boy that kept stacking up reams of paper, and I asked what he was doing. He said he was sheet rocking his house, and then he would tear it down . . . "I'm gutting my house." . . . So there was a lot of role playing."</i>
Emotional Effect: School-Age	Artifacts that describe the emotional effects experienced by school-age (elementary) during the pre-flood, flood, and post-flood periods.	53	<i>When she started swimming, she said, "I always see our house in the bottom of the pool, and she would swim kind of reluctantly. . . . but she always thought that much water reminded her of the flood."</i>
Emotional Effect: Teens	Artifacts that describe the emotional effects experienced by teenagers during the pre-flood, flood, and post-flood periods.	51	<i>"She took it hard. . . . It was so cramped, and she just got to the point where she didn't even want to go to school . . . besides not wanting to be in school, she was fighting with other girls . . . not really physically, but bickering."</i>
Emotional: Anger	Artifacts that describe the emotion of anger resulting from the flood experience.	18	<i>"I'm still very angry . . . very bitter about it. . . . I'm pissed off at our government. . . . I'm pissed off at the Canadian government . . . not really happy with our city council."</i>
Emotional: Short Tempers During Recovery	Artifacts that describe how many flood victims had short tempers during the pre-flood, flood, and post-flood periods.	3	<i>"There were times, after the flood, and I would say something, and to me it wasn't that important, or she would say something, and snap, not meaning it and apologizing right after it . . . and that would have never happened before the flood."</i>

Appendix F. cont.

Code	Definition	N	Example of Participant's Words
Equity: Comparison to Other Disasters	Artifacts that describe the perception that inequity exists in the role of the federal government in the recovery process.	29	<i>"If Katrina could get that much, why couldn't those of us in the middle? . . . Why can't we get treated the same?"</i>
Fear: Future Flooding	Artifacts that describe the fear of flooding in future years.	37	<i>"We've done nothing in the basement, because frankly, Minot has done nothing to prevent this from happening again."</i>
Federal Assistance: Duplication of Benefits	Artifacts that describe how federal assistance programs were concerned that victims may receive duplicated services.	4	<i>"What we ran into – if you got an SBA loan, you don't get help from anybody else . . . because you got an SBA loan, which was supposed to cover everything, but it didn't."</i>
Federal Assistance: Other Forms	Artifacts that describe other forms of federal assistance.	4	<i>"During that time, during the flood, since I was unemployed, I was able to get disaster unemployment for a very short period of time . . . and I got 58.00 per month. It doesn't go that far."</i>
Federal Involvement: Inefficiencies	Artifacts that describe inefficiencies of federal involvement in regard to flood recovery, as perceived by flood victims.	66	<i>"And that's' what is so frustrating with the government . . . I could take that \$20,000.00 and buy a boat, like maybe people did down in Louisiana, but I want to give it right back, and I am told that I can't."</i>
FEMA Experience: Negative	Artifacts that describe negative perceptions of the FEMA experience as noted by flood victims.	20	<i>"Didn't care for that 'meeting a guy' thing . . . so there I am in the Kmart parking lot with this gentlemen, sitting in his vehicle."</i>
FEMA Experience: Neutral	Artifacts that describe neutral perceptions of the FEMA experience as noted by flood victims.	3	<i>"We just used our FEMA money to get on the main level. The girls' bedrooms were upstairs and untouched, so we used the FEMA money just to get into the house."</i>
FEMA Experience: Positive	Artifacts that describe positive perceptions of the FEMA experience as noted by flood victims.	10	<i>"It was big news when one of those trailers came rolling to the area."</i>

Appendix F. cont.

Code	Definition	N	Example of Participant's Words
FEMA Individual Assistance Experience: Negative	Artifacts that describe negative perceptions of the FEMA Individual Assistance program as noted by flood victims.	17	<i>"We had an inspector come to our house, and you know . . . everyone was supposed to wear boots, gloves, and masks. . . . This guy came in tennis shoes. He asked to see our electric box, and my wife told him it was back in the corner of the basement. He could not see it, and I suggested he go outside and look, but he wouldn't."</i>
FEMA Individual Assistance Experience: Positive	Artifacts that describe positive perceptions of the FEMA Individual Assistance program as noted by flood victims.	11	<i>"As far as my work with FEMA on my home, it was pretty easy. . . . They came in, evaluated my house, and they figured how much I was going to get . . . and I got my \$30,000.00."</i>
FEMA Public Assistance Experience: Negative	Artifacts that describe negative perceptions of the FEMA Public Assistance program as noted by leaders of public entities.	60	<i>"We were fighting with people on the ground while still trying to get the mess cleaned up."</i>
FEMA Public Assistance Experience: Neutral	Artifacts that describe neutral perceptions of the FEMA Public Assistance program as noted by leaders of public entities.	11	<i>"Once we got past which building[s] were going to be repaired and which would be replaced, I would actually say that it got better."</i>
FEMA Workers: Negative	Artifacts that describe negative experiences with FEMA workers as perceived by flood victims.	14	<i>"But when they brought the trailer . . . this guy . . . 'Now don't forget, all of this is the property of the United States Government.' And I said . . . 'I'm not going to sell it.' . . . 'If it's damaged you will be liable for it,' and I thought . . . how stupid do these people think we are?"</i>
FEMA Workers: Positive	Artifacts that describe positive experiences with FEMA workers as perceived by flood victims.	22	<i>"I have to say . . . the FEMA people that we met were super."</i>

Appendix F. cont.

Code	Definition	N	Example of Participant's Words
FEMA: Flood Insurance	Artifacts that describe the FEMA Flood Insurance experience.	20	<i>"My friends had enough flood insurance to cover the basement, so they only got a check from FEMA for \$2,000.00. . . . The difference. She told me that they will never pay it off, but she hopes to live long enough to do it, and piss them off."</i>
FEMA: Hazard Mitigation	Artifacts that describe the FEMA policy of Hazard Mitigation, in regard to flood prevention.	4	<i>"We even had to fight with them to upgrade electrical to current code. . . . We pushed that, and they finally agreed and paid."</i>
FEMA: Housing	Artifacts that describe the experience of living in FEMA housing.	59	<i>"We tried to make the best of it, but we learned to live closer as a family in the FEMA trailer, with no cable and one channel on the TV – two teenagers with no cable and no internet. . . . I laugh now."</i>
FEMA: Least Cost Alternatives	Artifacts that describe the FEMA policy of Least Cost Alternative, and the effect on public entities recovering from the flood.	3	<i>"It was a least cost alternative decision, so the district made those decisions with a construction manager who helped to determine how we would move forward."</i>
FEMA: Like for Like	Artifacts that describe the FEMA policy of Like for Like, and the effect on public entities recovering from the flood.	1	<i>"Like for like meant that is if you lost a 10,000 square foot building, that would be what you could build. Like for like meant that whatever you lost, they will replace."</i>
FEMA: Mitigation of Damages	Artifacts that describe the FEMA policy of Mitigation of Damages, and the effect on public entities recovering from the flood.	6	<i>"The Ramstad project . . . we were trying to convince FEMA that since it had flooded twice in 42 years, that yes, it was in the 100 year flood plain, and they had already, from what we could gather, made a determination that they would not relocate it."</i>
Financial Strain: Flood Recovery	Artifacts that describe the financial difficulty experienced as a result of the flood and subsequent recovery.	47	<i>"I hadn't paid for my house the first time, and now I have to pay for it again."</i>

Appendix F. cont.

Code	Definition	N	Example of Participant's Words
Flood Protection: Enhanced	Artifacts that describe the process and challenges of developing an enhanced flood protection plan for the city of Minot.	12	<i>"A lot of people . . . they are waiting because their homes are in the potential diversion area, and maybe a potential buyout area, and many of those people have seen nothing on their homes . . . and they won't for a long time."</i>
Flood Protection: Buy-Outs	Artifacts that describe the social, emotional, and financial effects of property buy-outs for flood protection.	15	<i>"In January, she got a letter for a buyout . . . she's in the mandatory buyout . . . so we aren't done dealing with that yet. . . . It's mandatory, so she has to leave the home, so we are just starting over again with her."</i>
Guilt Associated with Receiving Assistance from Others	Artifacts that describe the guilt flood victims felt when receiving assistance from others.	14	<i>"I felt like I had to be the person who did her housekeeping for her and cook for her . . . any way to pay her back."</i>
History of Flooding: Comparisons	Artifacts that describe the history of flooding in the Souris River Valley, as well as comparisons to other floods.	17	<i>"The person next to us . . . we literally had to go in and talk her into getting out, because she didn't want to leave . . . because she evacuated in 1969 and nothing happened."</i>
Housing Shortage	Artifacts that describe the housing shortage that was evident before the flood, and the subsequent effects noticed by victims of the flood.	20	<i>"Yes, I think the city has grown because of the oil, but I think we have lost many people who were here for many years because they had no choice but to go find some relatives to live with or find other options."</i>
Humor	Artifacts that describe how humor helped to lighten the load for flood survivors.	18	<i>"As the school year was winding down, I had my bible out and I usually make a few goals, and on my list was to clean the house really well . . . and I put it too close to my prayer list, so I just wanted to say it was my fault. . . . I should have been more specific on how God should answer that prayer."</i>

Appendix F. cont.

Code	Definition	N	Example of Participant's Words
Individual Corrupt Practices	Artifacts that describe corrupt practices that were evident during the flood and recovery period.	1	<i>"We had neighbors that rented to some people in California to make money off their FEMA trailer while they were fixing up their house, and they were living in a house that barely had heat so they could rent out their FEMA trailer . . . It is frustrating to see that."</i>
Individual Perseverance	Artifacts that describe the perseverance that was shown by many flood victims.	45	<i>"We were just stubborn old German people . . . that said we are going to do this, and we are going to get it done . . . and that was our life for the first 6 months for sure."</i>
Inter-Agency: Duplication of Services	Artifacts that describe experiences with help agencies that provided duplicated services.	8	<i>"My son was told that you qualify, but the money[BND Loan] goes to SBA and Scott Louser, who was instrumental in getting that passed through the legislature, was incensed by that and said it was the goal for it to be easy money for people to get their hands on."</i>
Inter-Agency: Turf Wars	Artifacts that describe examples of inter-agency struggles and battles over their role in flood assistance and recovery.	22	<i>"So, we had county and city, and non-profit organizations all butting heads. It was difficult to determine who was in charge."</i>
Late Nights During Recovery	Artifacts that describe how victims who did the majority of reconstructive work spent many long hours in addition to regular employment.	4	<i>"Every night we would come home from work and throw something in the crock pot-the rule was that we would work until 9:00, and then we would go in and eat supper, and watch the news, and go to bed."</i>
Lessons Learned: Communication	Artifacts that describe perceived "lessons learned" in regard to communication.	10	<i>"The first thing to do is to tell the truth. What they can't handle is when you tell them something, and then something different, and then something different again."</i>
Lessons Learned: Evacuation	Artifacts that describe perceived "lessons learned" in regard to evacuation.	28	<i>"It was nickels for dollars. . . . I don't know how you write a master manual or master plan of how to evacuate, but I think it is something we could easily do or offer for future."</i>

Appendix F. cont.

Code	Definition	N	Example of Participant's Words
Lessons Learned: Recovery	Artifacts that describe perceived "lessons learned" in regard to flood recovery.	31	<i>"Collaboration . . . we need to collaborate with everyone. . . . It seems like there was a lot of 'hurry up and wait.'"</i>
Life During Evacuation	Artifacts that describe the experience of living during the evacuation period.	4	<i>"We never really moved back in . . . many of our neighbors around us had tons of seepage, and we had the elevated foundation, but we were worried about sewer failure, so we didn't move back in."</i>
Limited Removal: Evacuation	Artifacts that describe how many residents removed very little from their homes prior to the flood.	14	<i>"I know one couple that, they just like packed an overnight bag, and they left . . . they had flood insurance, and they knew things were covered, so they just left . . . that was an odd situation, but they didn't know people."</i>
Mental Health: Availability	Artifacts that describe the availability of mental health services during the Souris River Flood of 2011.	4	<i>"Trinity Riverside was flood[ed], and they relocated. Two providers had their practices flood out, and one, if not both, had their homes destroyed, so they were essentially removed from the list of providers."</i>
Mental Health: Counseling Experience	Artifacts that describe varied experiences with counseling after the flood and subsequent recovery period.	17	<i>"I'm sure she was so depressed. I took her to see somebody . . . that lasted once, and she said, 'I don't want to go back,' and I didn't make her."</i>
Mental Health: Re-establish a Sense of Control	Artifacts that describe the need for flood victims to re-establish a sense of control following the flood.	18	<i>"The flood stoked people's sense of unfairness – the arbitrary nature of it. And one of the things that we do, in fact, the cardinal rule in working with people following a disaster, you need to do everything you can to re-establish a sense of control."</i>
Mental Health: Recommendation	Artifacts that describe various recommendations made by mental health providers in regard to appropriate dealing with emotional issues caused by the flood.	3	<i>"From shock to anger to bargaining, and that these were linear things, and that once you go through these stages, you don't go back, and that is clearly a fantasy."</i>

Appendix F. cont.

Code	Definition	N	Example of Participant's Words
National Guard Presence	Artifacts that describe the National Guard presence in the valley during the Souris River flood of 2011.	8	<i>"When we went in with the boat, we got caught by the national guard . . . and he asked what we were doing, and then he said, . . . I know what you are doing . . . just be careful."</i>
National Media Attention	Artifacts that describe the presence of national media in the city during the flood and subsequent recovery period.	3	<i>"We had the third largest deployment of FEMA housing, and yet that missed all the press, so I think that part of this issue was by that time, disaster had gotten kind of old."</i>
Neglect: Rebuilding	Artifacts that describe how some victims felt neglected during the recovery period.	5	<i>"Wife, new-born child, and the emotion that he had was a sense of utter abandonment."</i>
Neighborhood Effect	Artifacts that describe how neighborhoods reacted to the flood and subsequent recovery.	22	<i>"I used to know my neighbors, but not anymore, it is all rental property I don't know anybody anymore, except for my neighbors across the street."</i>
Personal Loss	Artifacts that describe how specific, personal items caused much sadness among flood victims and their families.	31	<i>"I miss our friends that moved away. . . . They lost their house, and had no reason . . . lost that connection."</i>
Pet Displacement	Artifacts that describe how pet owners and pets were displaced and often separated during the flood and subsequent recovery period.	13	<i>"Our pets couldn't be with us, and they were sheltered . . . our little dog went with my mother-in-law in Bismarck for over a year, and our two big dogs were out at a kennel at our friend's farm, so every day, we drove out there."</i>

Appendix F. cont.

Code	Definition	N	Example of Participant's Words
Political Leaders: Involvement	Artifacts that describe the involvement in political leaders during the flood period and subsequent recovery period.	10	<i>"And realizing that we did have alderman that were flood victims themselves, and asking them to play dual roles, was probably a bit much, but for the rest of them . . . I truly expected more."</i>
Political Leaders: Perceived Effectiveness	Artifacts that describe the perceived effectiveness of political leaders during the evacuation, flood, and subsequent recovery period.	21	<i>"I felt like they were too afraid to make a decision, even if it was the wrong decision."</i>
Poor: Effects on	Artifacts that describe how individuals in poverty were affected by the flood of 2011.	11	<i>"And those who didn't have transportation, or had faulty transportation . . . what then? If they didn't have the networking that we all had . . . what then?"</i>
Pre-Flood Fight	Artifacts that describe the efforts of the community in holding back the Souris River for three months prior to the actual flood.	19	<i>"It was interesting as we watched that whole situation go down . . . not feeling very good when we saw that 12 foot dike go up around that building . . . we knew it was going to be interesting."</i>
Press Coverage: Local 24 Hour	Artifacts that describe the experience of viewing live, 24-hour coverage during the crest of the flood.	45	<i>"The uncertainty of what was going on . . . and watching the news, and seeing that first airboat going down the streets it was all real . . . we were flooded."</i>
Re-Entry: Before Ban Lifted	Artifacts that describe the desire to enter into restricted areas before the evacuation ban was lifted.	13	<i>"I was in my neighborhood two days before everyone else . . . secretly."</i>
Reality Check: Evacuation	Artifacts that describe the point in which an individual accepted the flood forecast and determined the urgency and necessity of evacuation.	11	<i>"That press conference . . . I thought we were going to fight it, and I thought we were going to win. . . . I thought we were going to get it, and that morning, they met with the staff that morning before the press conference, and you could have heard a pin."</i>

Appendix F. cont.

Code	Definition	N	Example of Participant's Words
Regional Effects of Flooding	Artifacts that describe the effects of flooding throughout the Souris River Valley.	3	<i>"The new normal for a place like Towner, you know . . . where it used to just flood those meadows in the Spring . . . the new normal is dealing with grasses that were impacted with poisonous and toxic materials for their cattle."</i>
River Management	Artifacts that describe the perceptions of river management in the Souris River Valley.	32	<i>"They are doing a study, and they are figuring out which aspects they would like to change. I think things will happen there, and we will get better management."</i>
SBA Experience: Negative	Artifacts that describe negative aspects of the SBA experience, as noted by flood victims.	22	<i>"As far as qualifying for loans . . . and we have never dealt with the same person twice in dealing with SBA, and we battled for month . . . and that's when we finally kicked them to the curb . . . because it was chaos."</i>
SBA Experience: Neutral	Artifacts that describe neutral aspects of the SBA experience, as noted by flood victims.	4	<i>"As far as SBA, I was told that I did not qualify."</i>
SBA Experience: Positive	Artifacts that describe positive aspects of the SBA experience, as noted by flood victims.	3	<i>"And then we worked with another gentleman . . . he was a lawyer . . . he ended up coming back to assist because SBA was so far behind. Everything went smoothly from there on."</i>
Shock Association: Evacuation	Artifacts that describe the shock associated with evacuation.	13	<i>"The toughest part of my job for the last 13 years, was the time before the flood, and being in the circle of our engineers and public works directors, because I could see and hear the fear . . . and I would have other friends and family asking what I was hearing."</i>
School Experience: Post Flood	Artifacts that describe the post-flood experience in the Minot Public School District.	8	<i>"I'm special education . . . a speech therapist, and there was like six of us sharing this space . . . they had to put a curtain up . . . we made it work . . . I mean it wasn't wonderful, but I still think we provided decent services for our kids."</i>

Appendix F. cont.

Code	Definition	N	Example of Participant's Words
School Experience: Evacuation	Artifacts that describe the evacuation of school buildings in the valley.	1	<i>"We were just in a scramble, and it was a madhouse . . . be honest with you, I wish there were things I would have done, but we were in the middle of a mess."</i>
School Experience: Temporary Facilities	Artifacts that describe the educational experience in temporary facilities following the flood.	23	<i>"Things went pretty well when we moved into the new Lincoln . . . because we had familiar faces, we gave them a different environment."</i>
School Response	Artifacts that describe how the school responded to the flood and subsequent recovery, as perceived by flood victims.	24	<i>"The school was amazing . . . the year she was in the portables at Longfellow, they were so good to those kids . . . and they couldn't have had better teachers."</i>
Self Help: Rebuilding.	Artifacts that describe the experience of completing most of the recovery work without seeking contracted or hired assistance.	27	<i>"We, too, started early, and we determined . . . well, my husband determined, that he would do as much as he could on his own."</i>
Self-Medication	Artifacts that describe how some flood victims would "self medicate" in order to deal with stress during the flood and subsequent recovery period.	7	<i>"I was pretty much self-medicated with alcohol and Lorazepam. . . . I didn't have to drive, thank goodness."</i>
Sensory Issues: Reminders of the Flood	Artifacts that describe various sensory reminders that emotionally takes a victim "back" to the flood crisis.	47	<i>"When you smell it again, it just stops you in your tracks. When I walked into Arrowhead Mall after it opened, and when I opened the door, that smell was right there."</i>

Appendix F. cont.

Code	Definition	N	Example of Participant's Words
Shock Association: Flooding	Artifacts that describe the shock associated with the reality of flooding and subsequent evacuation from the valley.	37	<i>"My house . . . I was in an island until one night on the TV . . . the boat went down Eastwood Park, and went all the way around my house. They were on the street and went around the corner, and I saw everything. Even standing on the bridge with binoculars, I thought maybe it's not on the main floor, but seeing my front door in water . . . that's when it hit."</i>
Shock Association: Damage	Artifacts that describe the shock associated with the reality of damage caused by the flood.	41	<i>"But nothing was really breathing or living down there . . . we rebuilt around us."</i>
Shock Association: Recovery	Artifacts that describe the shock associated with all aspects of recovery.	7	<i>"It became too much for my sister, so she walked out on me, and my brother in law did too."</i>
Shock: First Time Assessment of Damage	Artifacts that describe the shock associated with the first assessment of damage in the victim's home, business or school.	25	<i>"My husband had actually bought those face masks with the filters on them . . . and he was like . . . trust me . . . you [are] going to need these. It was the end of July when we finally went in, and I remember trying to take the mask off to wipe the tears away, and he wouldn't let me . . . we stood on top of the dike, and that was all we saw . . . was water."</i>
Sirens: Remember Your Location	Artifacts that indicate where an individual was when the sirens sounded, to indicate that water was topping the city's levy system.	22	<i>"I had just locked up the adult learning center . . . and had driven away . . . and had gotten in line by the water treatment plant. I could see the water coming, and knew we had to get across that bridge . . . And they were lined up probably a mile or so behind me."</i>
State Involvement: BND	Artifacts that describe personal experiences with the Bank of North Dakota's loan program.	13	<i>"And we got the North Dakota loan . . . that was simple."</i>

Appendix F. cont.

Code	Definition	N	Example of Participant's Words
State Involvement: Procurement Regulations Lifted	Artifacts that describe the effects, negative and positive, of the state's decision of lift procurement restrictions, which allowed many contractors to work in our state without proper vetting.	2	<i>"It allowed us to respond in a much quicker fashion, and allowed us to mitigate potential losses."</i>
State Involvement: Sales Tax Rebate	Artifacts that describe the perspectives of flood victims in regard to the sales tax rebate legislation.	9	<i>"We took the time to do all that, and we sent it all in, and then we got a letter back a month later, saying, 'How about those seven people who did your plumbing, heating, and roof?' . . . Had to go get an affidavit from them."</i>
State Involvement: NDDDES	Artifacts that describe the working experience between the North Dakota Department of Emergency Services and flood affected public entities.	9	<i>"And the people from NDDDES . . . when we got to that point, they were helpful. Our senators were involved. . . . It was kind of sad that we had to get other government officials involved to get to the point where we are, but it's what we had to do."</i>
Stress of Evacuation	Artifacts that describe how flood victims experienced stress during the evacuation period.	21	<i>"One of the problems you have in any flood, and you experienced it too, is that people get exhausted. When you are working 24/7, week after week, and you are only one deep, people start getting exhausted, and then they start getting cranky, and little things become big things, and there is no time to take any time off."</i>
Stress of Recovery	Artifacts that describe how flood victims experienced stress during the recovery period.	19	<i>"It took two trips to the local bank to get somebody in Minneapolis to say . . . 'Your mortgage is paid, and here is the rest of your money,' but after that, maybe it is today's standards, but when you are in that crisis mode, you just don't know how much longer you can wait."</i>

Appendix F. cont.

Code	Definition	N	Example of Participant's Words
Stress on Family	Artifacts that describe how flood victims experienced stress among family members during the evacuation and recovery process.	34	<i>"Well, living with our daughter was interesting . . . we were only there for a couple of weeks, and it was a tough situation, mainly because our daughter has rules . . . uhhh, with us and our three dogs, and some of those rules were not easy to follow. She has a small apartment, and it was very cramped."</i>
Stress on Marriage	Artifacts that describe how flood victims experienced marital stress during the evacuation and recovery process.	15	<i>"It was terrible to say, but it was a long time to live with your in-laws . . . like my husband said . . . it won't be that bad, and I said . . . they're your parents, and you lived with them your whole life."</i>
Stress Related Illness	Artifacts that describe how flood victims experienced illness that they related to stress.	13	<i>"There has been a lot of illness . . . we hear a lot about people who have respiratory problems."</i>
Stress Relievers During Crisis & Recovery	Artifacts that describe how flood victims relieved stress during the crisis and recovery period.	22	<i>"And another thing that seemed to help was social systems . . . church night, soccer practice, and those normal, day-to-day practices that took their minds off things and helped hold people together."</i>
Survivor Guilt	Artifacts that describe how citizens who were not affected by the flood experienced feelings of guilt.	5	<i>"We had a lot of survivor guilty . . . we ended up helping a lot of families whose houses were flooded and those we thought who were flooded, because a lot of people were gutting their homes."</i>
The North Dakota Way	Artifacts that describe how flood victims showed a high degree of tenacity in dealing with crisis.	9	<i>"We are very lucky . . . we are Midwesterners. Until recently, we haven't been too transient, and people have been able to build relationships, so I guess anything that helps the community be strong and healthy, instead of having a huge police force . . . we watch out for people and each other."</i>

Appendix F. cont.

Code	Definition	N	Example of Participant's Words
Transitional Living Experience: Positive	Artifacts that describe positive aspects of the transitional living experience.	29	<i>"People were so generous . . . to this day, we joke that we need a sleepover. It was a good experience . . . we have good friends."</i>
Transitional Living Experience: Struggles	Artifacts that describe struggles with the transitional living experience.	82	<i>"We put our daughter in the house - she laid on a mattress on the living room floor. . . . My mom slept on the couch, my nephew slept on the floor, so we slept outside in that little makeshift camper until September. . . . It got to the point, on different occasions . . . I woke up with ants crawling on me."</i>
Transitional Living: Added Expense	Artifacts that describe added expenses incurred during the transitional living period.	5	<i>"My cell phone bill showed it that summer. I spent hours on the phone, trying to line up electricians and workers, and then when I got my bill, I was like . . . Oh, my gosh."</i>
Transitional Living: Neutral	Artifacts that describe the neutral experience associated with transitional living.	17	<i>"We lived with my mom off and on for a few months."</i>
Transportation During Flood	Artifacts that describe transportation issues that were evident during the flood, which affected all citizens of the community.	25	<i>"Yep - you had to have your tank full of gas when you got on the bypass . . . you didn't know how long you were going to be there."</i>
Volunteerism: Evacuation	Artifacts that describe volunteerism during the evacuation period.	38	<i>". . . got a lot of friends through Scouts and family that brought a trailer down, and we were lucky enough to get most of the important stuff out or at least up to the second floor . . . so it didn't get affected. That was . . . and then just the outcropping of friends and family that helped us out along the way."</i>

Appendix F. cont.

Code	Definition	N	Example of Participant's Words
Volunteerism: Flood Period	Artifacts that describe volunteerism during the flood period.	9	<i>"I called . . . the Red Cross wanted people to answer phones, and I called and said I could . . . We were flooded, and my husband was like . . . what are you doing?"</i>
Volunteerism: Recovery	Artifacts that describe volunteerism during the recovery period.	51	<i>"We would have family that would come and help us on the weekends, and we would use every bit of that time."</i>
Volunteerism: Co-Workers	Artifacts that describe volunteerism provided by co-workers during the evacuation and recovery period.	9	<i>"The first time I met my husband's boss, he was picking my underwear off of the floor and throwing it in a bag. . . . "Nice to meet you . . . so we got everything out but the light bulbs - we took everything."</i>
Water Level	Artifacts that describe the water level in each home - something that seemed very important to flood victims.	27	<i>"We lived in our home for about 23 years. . . . It was right behind Oak Park, and we had it up to the countertop."</i>
Weird Findings	Artifacts that describe the strange things that were found after the flood.	17	<i>"I remember walking into my room, and my piano was over here when I left. . . . When I went back in, it was over here on its side . . . and again . . . you just don't pick up a piano."</i>
Women: Effects on	Artifacts that describe how women, especially single women, dealt with evacuation and recovery.	12	<i>"It was just I and the three kids, so we didn't have a vehicle."</i>
Zombie Homes	Artifacts that describe the social, emotional, and financial effects of homes in the valley that are not repaired, and are thus referred to as Zombie Homes.	12	<i>"We still have a Zombie House . . . and we used to look and see a beautiful yard, but now, all we see is a Zombie House."</i>

REFERENCES

- Alesch, D. J. (2005). *Complex urban systems and extreme events: Toward a theory of disaster recovery*. Arlington, VA: Public Entity Risk Institute. Retrieved from http://www.riskinstitute.org/peri/images/file/Alesch_Complex_Urban_Systems_and_Extreme_Events.pdf
- Alesch, D. J., Arendt, L. A., & Holly, J. N. (2009). *Managing for long term community recovery in the aftermath of disaster*. Fairfax, VA: P.E.R.I. Press.
- Alegria, M., Nakash, O., Lapatin, S., Oddo, V., Gao, S., Lin, J., Normand, S.-L. (2008, November). How missing information in diagnosis can lead to disparities in the clinical encounter [Supplemental material]. *Journal of Public Health Management and Practice*, 14, S26-S35. doi: 10.1097/01.PHH.0000338384.82436.0d
- Alexander, J. C. (2004). Toward a theory of cultural trauma. In J. C. Alexander, R. Eyerman, B. Giesen, N. J. Smelser, & P. Sztowpka (Eds.), *Cultural trauma and collective identity* (pp. 1-30). Berkley, CA: University of California Press.
- Alterman, E. (2005). Found in the flood. *The Nation*, 281(9), 33.
- Anderson, W. A. (2008). *Recovery from disaster: A summary of the October 17, 2007, workshop of the disasters roundtable*. Washington, DC: The National Academies Press.

- Ary, D., Jacobs, L. C., Razavieh, A., & Sorensen, C. (2005). *Introduction to research in education* (7th ed.). Belmont, CA: Wadsworth.
- Baird, M. E. (2010). The recovery phase of emergency management. Unpublished Paper. Retrieved on April 11, 2013, from http://www.memphis.edu/cait/complete_research.php
- Barrett, J., & Nicas, J. (2011, June 24). River inundates North Dakota city. *Wall Street Journal*, 254(146), p. A6.
- Becker, G. S. (1976). *The Economic Approach to Human Behavior*. Chicago, IL: University of Chicago Press.
- Berke, P., & Campanella, T. (2006). Planning for post-disaster resiliency. *The Annals of the American Academy of Social and Political Sciences*, 604(5), 192, 208.
- Berke, P. R., Song, Y., & Stevens, M. (2009). Integrating hazard mitigation into new urban and conventional developments. *Journal of Planning Education and Research*, 28(4), 441-455.
- Blanco, H., & Alberti, M. (2009). Shaken, shrinking, hot, impoverished and informal: Emerging research agendas in planning. *Progress in Planning*, 72, 200-209.
- Blunt, A., & Dowling, R. (2006). *Home*. New York, NY: Routledge Press.
- Bolin, R. C. (1982). *Long-term family recovery from disaster*. Boulder, CO: Institute of Behavioral Science.

- Bolin, R. C. (1993). Post-earthquake shelter and housing: Research findings and policy implications. In K. J. Tierney and J. M. Nigg (Eds.), *Monograph 5: Socioeconomic Impacts* (pp. 107-131). Prepared for the 1993 National Earthquake Conference. Memphis, TN: Central United States Earthquake Consortium.
- Bolin, R. C., & Stanford, L. (1998). The Northridge earthquake: Community based approaches to unmet recovery needs. *Disasters*, 22(1), 21-28.
- Bradley, R. H. (2007). Parenting in the breach: How parents help children cope with developmentally challenging circumstances. *Parenting: Science and Practice*, 7(2), 99-148.
- Bradshaw, S. (2001, November). Reconstructing roles and relations: Women's participation in reconstruction in post-Mitch Nicaragua. *Gender and Development*, 9(3), 79-87.
- Brennan, M., Cantrell, R., Spranger, M., & Kumaran, M. (2006, July). *Effective community response to Disaster: A community approach to disaster preparedness and response* (Publication #FCS9254). Gainesville, FL: University of Florida, Institute of Food and Agricultural Sciences (IFAS) Extension, Family Youth and Community Sciences Department. Retrieved Feb 15, 2013, from the University of Florida, Every Day Information Source (EDIS) website: <http://edis.ifas.ufl.edu/pdffiles/FY/FY84000.pdf>
- Breslau, N., & Alvarado, G. F. (2007). The clinical significance criterion in DSM-IV post-traumatic stress disorder. *Psychological Medicine*, 37(10), 1437-1444.

- Brinkley, D. (2006). *The great deluge: Hurricane Katrina, New Orleans, and the Mississippi Gulf Coast*. New York, NY: HarperCollins Publishers.
- Britton, N. R. (1986). Developing an understanding of disaster. *Australian and New Zealand Journal of Sociology*, 22, 254-272.
- Brody, S. D., Zahran, S., Highfield, W. E., Grover, H., & Vedlitz, A. (2008, March). Identifying the impact of the built environment on flood damage in Texas. *Disasters*, 32(1), 1-18. doi: 10.1111/j.1467-7717.2007.01024.x
- Brown, B. B., & Perkins, D. D. (1992). Chapter 13: Disruptions in place attachment. In I. Altman & S. M. Low (Eds.), *Place Attachment* (pp. 279-304). New York, NY: Plenum Press.
- Brown, B., Perkins, D. D., and Brown, G. (2003). Place attachment in a revitalizing neighborhood: Individual and block levels of analysis. *Journal of Environmental Psychology*, 23(3), 259-271.
- Buckle, P. (2005). Mandated definitions, local knowledge and complexity. In R. W. Perry & E. L. Quarantelli (Eds.), *What is a disaster: New answers to old questions*. Philadelphia, PA: Xlibris.
- Bunge, M. (1998). *Social science under debate: A philosophical perspective*. Toronto: University of Toronto Press.
- Burby, R. J. (2006). Hurricane Katrina and the paradoxes of government disaster policy: Bringing about wise governmental decisions for hazardous areas. *The Annals of the American Academy of Political and Social Science*, 604(1), 171-191.

- Cannon, T. (1994). Vulnerability analysis and the explanation of 'natural' disasters. In A. Varley, (Ed.), *Disasters, development and environment* (pp. 13-20). London: Wiley.
- Carr, L. J. (1932). Disaster and the sequence-pattern concept of social change. *American Journal of Sociology*, 38, 207-218.
- Carver, C., & Scheier, M. (1994). Situational coping and coping dispositions in a stressful transaction. *Journal of Personality and Social Psychology*, 66(1), 184-189.
- Chang, S. E., & Falit-Baiamonte, A. (2002). Disaster vulnerability of businesses in the 2001 Nisqually earthquake. *Environmental Hazards*, 4(2-3), 59-71.
- Chawla, L. (1992). Childhood place attachments. In I. Altman and S. M. Low (Eds.), *Place Attachments* (pp. 63-86). New York, NY: Plenum Press.
- City of Minot. (2012, June 22). *2011 Mouse River flood: Response and recovery*. Minot, ND: Author.
- Comerio, M. C. (1998). *Disaster hits home: New policy for urban housing recovery*. Berkley and Los Angeles, CA: University of California Press.
- Congleton, R. D. (2006, January 6). The story of Katrina: New Orleans and the political economy of catastrophe. *Public Choice*, 127, 5-30.
- Congressional Digest. (2012a, December). National flood insurance program reform: GAO recommendations for congressional action on flood insurance. *Congressional Digest*, 91(10), 295-298, 320.

- Congressional Digest. (2012b, December). The high cost of Floods: Mitigating the impact of floods on communities and the federal budget. *Congressional Digest*, 91(10), 289.
- Corbin, J., & Strauss, A. (2008). *Basics of qualitative research* (3rd ed.). Thousand Oaks, CA: Sage Publications, Inc.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative and mixed methods approaches* (3rd ed.). Thousand Oaks, CA: Sage Publications, Inc.
- Creswell, J. W. (2013). *Qualitative inquiry & research design: Choosing among five approaches*. Thousand Oaks, CA: Sage Publications, Inc.
- Culver, L. M., McKinney, B. L., & Paradise, L. V. (2011). Mental health professionals' experiences of vicarious traumatization in post-Hurricane Katrina New Orleans. *Journal of Loss and Trauma*, 16(1), 33-42.
- Cutter, S. (2003). The vulnerability of science and the science of vulnerability. *Annals of the Association of American Geographers*, 93(1), 1-12.
- Davis, K. & Ender, M. (1999). The 1997 Red River Valley Flood: Impact on marital relationships. *Applied Behavioral Science Review*, 7(2), 181-189.
- Davis, M. R., & Richard, A. (2005). Schools welcome FEMA aid, but not without frustration. *Education Week*, 24(7), 11-15.
- Department of Homeland Security. (2003, February). *The national strategy for the physical protection of critical infrastructures and key assets*. Retrieved from http://www.dhs.gov/xlibrary/assets/Physical_Strategy.pdf

- Denzin, N. K., & Lincoln, Y. S. (2011). Introduction: The discipline and practice of qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *The sage handbook of qualitative research* (pp. 1-20). Thousand Oaks, CA: Sage Publications, Inc.
- Disaster. (2007). In *The American Heritage College Dictionary* (4th ed.). Boston, MA: Houghton-Mifflin Company.
- Disaster Mitigation Act, 42 U.S.C. § 5121 *et seq.* (2000).
- Donner, W. (2008). Decision making as community adaptation: A case study of emergency managers in Oklahoma. *Disasters*, 32(2), 292-302.
- Drescher, K., & Foy, D. (2010). When horror and loss intersect: Traumatic experiences and traumatic bereavement. *Pastoral Psychology*, 59, 147-158.
- Elliot, R., Fischer, C.T., & Rennie, D.L. (1999). Evolving guidelines for publication of qualitative research studies in psychology and related fields. *British Journal of Clinical Psychology*, 38, 215-229.
- Enarson, E., & Fordham, M. (2001, Summer). Lines that divide, ties that bind: Race, class, and gender in women's flood recovery in the U.S. and U.K. *Australian Journal of Emergency Management*, 15(4), 43-52.
- FEMA. (2002, June). *The natural & beneficial functions of floodplains: Reducing flood losses by protecting and restoring the floodplain environment* (FEMA Report No. 409). Washington, DC: FEMA. Retrieved from http://portal.hud.gov/hudportal/documents/huddoc?id=DOC_14217.pdf
- FEMA. (2003). *Repetitive loss property action plan discussion and planning session*. Washington, DC: FEMA.

- FEMA. (2007a, June). *FEMA public assistance guide* (FEMA 322). Washington, DC: Federal Emergency Management Agency. Retrieved from <http://www.fema.gov/pdf/government/grant/pa/paguide07.pdf>
- FEMA. (2007b, June). *Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended, and related authorities* (FEMA 592). Washington, DC: Federal Emergency Management Agency. Retrieved from http://www.fema.gov/pdf/about/stafford_act.pdf
- FEMA. (2008, January). *FEMA strategic plan: Fiscal years 2008-2013* (FEMA P-422). Washington, DC: FEMA.
- FEMA. (2009, March). *Developing and maintaining state, territorial, tribal, and local government emergency plan* (Comprehensive Preparedness Guide, (CPG) 101). Washington, DC: Federal Emergency Management Agency.
- FEMA. (2011, December 2). *Lessons in community recovery: Seven years of Emergency Support Function #14 long-term community recovery from 2004 to 2011*. Washington, DC: Federal Emergency Management Agency.
- Feske, U. (2008, August). Treating low-income and minority women with posttraumatic stress disorder: A pilot study comparing prolonged exposure and treatment as usual conducted by community therapists. *Journal of Interpersonal Violence*, 23(8), 1027-1040. doi: 10.1177/0886260507313967
- Flood Disaster Protection Act, 42 U.S.C. § 4001 *et seq.* (1973).

- Fordham, M., & Ketteridge, A.-M. (1998). "Men must work and women must weep": Examining gender stereotypes in disasters. In E. Enarson, & B. H. Morrow (Eds.), *The gendered terrain of disaster: Through women's eyes* (pp. 81-94). Westport, CT: Praeger.
- Fothergill, A. (2004). *Heads above water: Gender, class, and family in the Grand Forks flood*. Albany, NY: State University of New York Press.
- French, S. P., Lee, D., & Anderson, K. (2010). Estimating the social and economic consequences of natural disasters: Fiscal impact example. *Natural Hazards Review, 11*(20), 49-57.
- Fullerton, C. S., Ursano, R. J., Kao, T. C., & Bharitya, V. R. (1999). Disaster-related bereavement: Acute symptoms and subsequent depression. *Aviation, Space and Environmental Medicine, 70*, 902-909.
- Garbarino, J. (2001). An ecological perspective on the effects of violence on children. *Journal of Community Psychology, 29*(3), 361-378.
- Ghaffari-Nejad, A., Ahmadi-Mousavi, M., Gandomkar, M., & Reihani-Kermani, H. (2007, October). The prevalence of complicated grief among Bam earthquake survivors in Iran. *Archives of Iranian Medicine, 10*(4), 525-528.
- Gill, D. A. (2007, November). Secondary trauma or secondary disaster? Insights from Hurricane Katrina. *Sociological Spectrum, 27*(6), 613-632.
- Ginzburg, H. M. (2008, February). Long-term psychiatric consequences of Hurricane Katrina. *Psychiatric Annals, 38*(2), 81-91.

- Godschalk, D. R., Rose, A., Mittler, E., Porter, K., & Taylor West, C. (2009). Estimating the value of foresight: Aggregate analysis of natural hazard mitigation benefit and costs. *Journal of Environmental Planning and Management*, 52(6), 739-756.
- Gordon, P., Richardson, H. W., & Davis, B. (1998, May). Transport-related impacts of the Northridge earthquake. *Journal of Transportation and Statistics*, 1(2), 21-36.
- Grunwald, M. & Glasser, S. B. (2005, October 9). The slow drowning of New Orleans. *The Washington Post*. Retrieved from <http://www.washingtonpost.com/wp-dyn/content/article/2005/10/08/AR2005100801458.html>
- Gunderson, L. (2010). Ecological and human community resilience in response to natural disasters. *Ecology and Society*, 15(2), 17-35.
- Hagar, C. (2009). Information in isolation: Gossip and rumour during the UK 2001 foot and mouth crisis – lessons learned. *Libri: International Journal of Libraries and Information Services*, 59(4), 228-237.
- Hatch, J. A. (2002). *Doing qualitative research in education settings*. Albany: State University of New York Press.
- Hintz, K. (2013). It takes a village to start the school year: A community rallies after a natural disaster. *Delta Kappa Gamma Bulletin*, 79(3), 6-12.
- Hoffman, S. M. (1998). Eve and Adam among the embers: Gender patterns after the Oakland Berkeley firestorm. In E. Enarson & B. H. Morrow (Eds.), *The gendered terrain of disaster: Through women's eyes* (pp. 55-61). Westport, CT: Praeger.
- Horlick-Jones, T. (1995). Modern disasters as outrage and betrayal. *International Journal of Mass Emergencies and Disasters*, 13(3), 305-316.

- Hunter, S. (2012). Walking in sacred spaces in the therapeutic bond: Therapists' experiences of compassion satisfaction coupled with the potential for vicarious traumatization. *Family Process, 51*(2), 179-191.
- International Souris River Board of the International Joint Commission. (2009). *Mandate* (No. ISRB-2009A). Retrieved on February 13, 2014, from http://ijc.org/files/tiny_mce/uploaded/documents/mandate.pdf
- Jennison, V. (2008). Networking to improve community resiliency in disaster planning and response. *International Journal of Public Policy, 3*(56), 328-352.
- Johannesson, K. B., Lundin, T., Fröjd, T., Hultman, C. M., & Michel, P.O. (2011). Tsunami-exposed tourist survivors: Signs of recovery in a 3-year perspective. *Journal of Nervous and Mental Disease, 199*(12), 162-169. doi: 10.1097/NMD.0b013e31820c73d1
- Johnson, S. (2012, November 29). FEMA defends Sandy response efforts. *Amsterdam News, 103*(48), 1-34.
- Jones, R. T., Immel, C. S., Moore, R. M., & Hadder, J. M. (2008). Hurricane Katrina: Experiences of psychologists and implications for future disaster response. *Professional Psychology: Research and Practice, 79*, 100-106.
- Kapucu, N. (2008). Planning for disasters and responding to catastrophes: Error of the third type in disaster policy and planning. *International Journal of Public Policy, 3*(5/6), 313-327. doi: 10.1504/IJPP.2008.020985

- Kasperson, R. E., Kasperson, J. X., & Dow, K. (2001). Vulnerability, equity, and global environmental change. In J. X. Kasperson & R. E. Kasperson (Eds.), *Global environmental risk* (pp. 247-272). New York, NY: United Nations University Press.
- Kates, R. W., & Pijawka, D. (1977). From rubble to monument: The pace of reconstruction. In J. E. Hass, R. W. Kates, & M. J. Bowden (Eds.), *Reconstruction following disaster* (pp. 1-23). Cambridge, MA: MIT Press.
- Kessler, R. C., Galea, S., Gruber, M. J., Sampson, N. A., Ursano, R. J., & Wessely, S. (2008). Trends in mental illness and suicidality after Hurricane Katrina. *Molecular Psychiatry, 13*, 374-384.
- Kick, E. L., Fraser, J. C., Fulkerson, G. M., McKinney, L. A., & DeVries, D. H. (2011, July). Repetitive flood victims and acceptance of FEMA mitigation offers: An analysis with community-system policy implications. *Disasters, 35*(3), 510-539.
- Kim, S. C., Plumb, R., Gredig, Q.-N., Rankin, L., & Taylor, B. (2008, September). Medium-term post-Katrina health sequelae among New Orleans residents: Predictors of poor mental and physical health. *Journal of Clinical Nursing, 17*(17), 2335-2342. doi: 10.1111/j.1365-2702.2008.02317.x
- Kreps, G. A., & Drabek, T. E. (1996, August). Disasters are non-routine social problems. *International Journal of Mass Emergencies and Disasters, 14*(2), 129-153.

- Kristensen, P., Weisaeth, L., & Heir, T. (2009). Psychiatric disorders among disaster bereaved: An interview study of individuals directly or not directly exposed to the 2004 tsunami. *Depression and Anxiety, 26*(12), 1127-1133. doi: 10.1002/da.20625
- Kroll-Smith, S., & Gunter, V. (1998). Legislators, interpreters and disasters. In E. L. Quarantelli (Ed.), *What is a disaster: Perspectives on the question* (pp. 160-176). London: Routledge.
- Kunreuther, H. (2006, March). Disaster mitigation and insurance: Learning from Katrina. *Annals of the American Academy of Political and Social Science, 604*(1), 208-227.
- Lewis, M. D., & Junyk, N. (1997). The self-organization of psychological defenses. In F. Masterpasqua & P. A. Perna (Eds.), *The psychological meaning of chaos: Translating theory into chaos* (pp. 41-74). Washington, DC: American Psychological Association.
- Lindell, M. K., & Prater, C. S. (2003). Assessing community impacts of natural disasters. *Natural Hazards Review, 4*(4), 176-185.
- Lindell, M. K., Prater, C. S., & Perry, R. W. (with Nicholson, W. C.). (2006, July 15). *Fundamentals of emergency management* [Electronic textbook, Federal Emergency Management Agency]. Retrieved at <http://training.fema.gov/EMIWeb/edu/fem.asp>
- Madrid, P. A., & Schacher, S. J. (2006, May). A critical concern: Pediatrician self-care after disasters. *Pediatrics, 117*(5), 454-457.

- Madrid, P. A., & Grant, R. (2008). Meeting mental health needs following a natural disaster: Lessons from Hurricane Katrina. *Professional Psychology: Research and Practice*, 39, 85-92.
- Maguen, S., Neria, Y., Conoscenti, L. M., & Litz, B. T. (2009). Depression and prolonged grief in the wake of disasters. In Y. Neria, S. Galea, & F. H. Norris (Eds.), *Mental health and disasters* (pp. 116-130). Cambridge: Cambridge University Press.
- Manzo, L. C., & Perkins, D. D. (2006). Finding common ground: The importance of place attachment to community participation and planning. *Journal of Planning Literature*, 20(4), 165-186.
- Maskrey, A. (1994). Disaster mitigation as a crisis of paradigms: Reconstruction after the Alto Mayo earthquake, Peru. In A. Varley (Ed.), *Disaster, development and environment* (pp. 109-123). Chichester, UK: Wiley.
- May, K.A. (1986). Writing and evaluating the grounded theory research in report. In W.C. Chenitz & J.M. Swanson (Eds.), *From practice to grounded theory* (pp. 126-154). Menlo Park, CA: Addison-Wesley.
- McDaniels, T., Chang, S., Peterson, K., Mikawoz, J., & Reed, D. (2007). Empirical framework for characterizing infrastructure failure interdependencies. *Journal of Infrastructure Systems*, 13(3), 175-184.
- Meyer, S., Henry, E., Wright, R. E., & Palmer, C. A. (2010). Post-disaster redevelopment planning: Local capacity building through pre-event planning. *Journal of Disaster Research*, 5(5), 552-564.

- Mileti, D. (1999). *Disasters by design: Contributions of sociology to disaster research*. Washington, DC: John Henry Press.
- Minot Public School District. (1969). *Narrative – Ramstad Junior High* [Unpublished report]. Minot, ND: Author.
- Morse, J. J., & Richards, L. (2002). *README FIRST for a user's guide to qualitative methods* (2nd ed.). Los Angeles, CA: Sage Publishing.
- Murphy, B. L. (2007, May). Locating social capital in resilient community-level emergency management. *Natural Hazards, 41*(2), 297-315.
- Najarian, L. M., Goenjian, A. K., Pelcovitz, D., Mandel, F., & Najarian, B. (2001). The effect of relocation after a natural disaster. *Journal of Traumatic Stress, 14*, 511-526.
- National Flood Insurance Act, 42 U.S.C. § 4001 *et seq.* (1968).
- National Lenders Insurance Council. (1997). Great minds meet in Grand Forks flood summit. *NLIC Newsletter, 2*(4), 2.
- National Research Council. (2006). *Facing hazards and disasters: Understanding human dimensions*. Washington, DC: The National Academies Press.
- National weather service. (2014). In *ENCYCLO.CO.UK English Encyclopedia* [Online encyclopedia]. Retrieved from <http://www.encyclo.co.uk/define/National%20Weather%20Service>
- National Weather Service. (n.d.). *About NOAA's National Weather Service*. Retrieved from <http://www.weather.gov/about>

- Neria, Y., Olfson, M., Gameroff, M. J., Wickramaratne, P., Gross, R., Pilowsky, D. J., . . . Weissman, M. M. (2008). The mental health consequences of disaster-related loss: Findings from primary care one year after the 9/11 terrorist attacks. *Psychiatry, 71*(4), 329-348. doi: 10.1521/psyc.2008.71.4.339
- Norris, F. H., Friedman, M. J., Watson, P. J., Byrne, C. M., Diaz, E., & Kaniasty, K. (2002). 60,000 disaster victims speak: Part I. An empirical review of the empirical literature, 1981-2001. *Psychiatry, 65*(3), 207-239.
- North, C. S., King, R. V., Fowler, R. L., Polatin, P., Smith, R. P., LaGrone, H. A., . . . Pepe, P. E. (2008, February). Psychiatric disorders among transported hurricane evacuees: Acute-phase findings in a large receiving shelter site. *Psychiatric Annals, 38*, 104-113. doi: 10.3928/00485713-20080201-06
- ND Department of Emergency Services. (2011, November). *2011 flood report: Response and recovery*. Bismarck, ND: Author.
- Obenchain, B. (2011, August 7). Timeline of Minot's 2011 flood. *Minot Daily News*, pp. 1B, 2B.
- Oliver-Smith, A. (1998). Global challenges and the definition of disaster. In E. L. Quarantelli (Ed.), *What is a disaster: Perspectives on the question* (pp. 174-179). London: Routledge.
- Olshansky, R. B. (2006, Spring). Planning after Hurricane Katrina. *Journal of the American Planning Association, 72*(2), 147-153.
- Olshansky, R. B., & Chang, S. E. (2009). Planning for disaster recovery: Emerging research needs and challenges. *Progress in Planning, 72*, 195-250.

- Olshansky, R. B., & Johnson, L. A. (2010). *Clear as mud: Planning for the rebuilding of New Orleans*. Chicago, IL: APA Press.
- Olshansky, R. B., Johnson, L. A., & Topping, K. C. (2006, December 29). Rebuilding communities following disaster: Lessons from Kobe and Los Angeles. *Built Environment*, 32(4), 354-374.
- Parkes, C. M. (1996). *Bereavement: Studies of grief in adult life* (3rd ed.). New York, NY: Routledge.
- Patton, M. Q. (2002). *Qualitative research and evaluation methods*. Thousand Oaks, CA: Sage Publishing.
- Peacock, W. G., & Girard, C. (1997). Ethnic and racial inequalities in hurricane damage and insurance settlements. In W. G. Peacock, B. H. Morrow, & H. Gladwin (Eds.), *Hurricane Andrew: Ethnicity, gender and the sociology of disaster*. New York, NY: Routledge.
- Pennings, J. M. E., & Grossman, D. B. (2008, September). Responding to crises and disasters: The role of risk attitudes and risk perceptions. *Disasters*, 32(3), 434-448.
- Pfefferbaum, B., Houston, J. B., North, C. S., & Regens, J. L. (2008, September). Youth's reactions to disasters and the factors that influence their response. *The Prevention Researcher*, 15(3), 3-6.
- Pielke, R. A., Jr. (1999). Who decides? Forecasts and responsibilities in the 1997 Red River flood. *Applied Behavioral Science Review*, 7(2), 83-101.
- Platt, R. (1999). *Disasters and democracy: The politics of natural events*. Washington, DC: Island Press.

- Pynoos, R. S., Frederick, C., Nader, K., Arroyo, W., Steinberg, A., Eth, S., . . . Fairbanks, L. (1987, December). Life threat and posttraumatic stress in school-age children. *Archives of General Psychiatry*, *44*(12), 1057-1063. doi: 10.1001/archpsyc.1987.01800240031005
- Quarantelli, E. L. (1988). Assessing disaster preparedness planning. *Regional Development Dialogue*, *9*(1), p. 48-69.
- Quarantelli, E. L. (1990, June). *Disaster prevention and mitigation in Lada: Problems and options in planning and implementing in a composite country*. Paper presented at Colloquium on the Environment and Natural Disaster Management. Washington, DC: World Bank.
- Quarantelli, E. L. (1999). *The disaster recovery process: What we do and do not know from research*. Newark: University of Delaware Research Center.
- Quarantelli, E. L. (2005). A social science research agenda for the disasters of the 21st century. In R. W. Perry & E. L. Quarantelli (Eds.), *What is a disaster? New answers to old questions* (pp. 325-396). Philadelphia: Xlibris.
- Redekop, B. (2011, July 26). Minot flood victims will get little help. *Winnipeg Free Press*, p. A7. Retrieved from <http://www.winnipegfreepress.com/local/minot-flood-victims-will-get-little-help-126159858.html>
- Regehr, C., & Sussman, T. (2004). Intersections between grief and trauma: Toward an empirically based model for treating traumatic grief. *Brief Treatment and Crisis Intervention*, *4*(3), 289-309.
- Richards, R. J. (2008, April). The National Flood Insurance Program: A “flood” of controversy. *The Florida Bar Journal*, *82*(4), 8-18.

- Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. § 5121-5207 (2007).
- Roberts, P. (2006, June 1). FEMA after Katrina. *Policy Review*, 137, 15-33.
- Rosenthal, U. (1998). Future disasters, future definitions. In E. L. Quarantelli (Ed.), *What is a disaster: Perspectives on the question* (pp. 146-159). London: Routledge.
- Rubin, C. B., & Barbee, D. G. (1985, January). Disaster recovery and hazard mitigation: Bridging the intergovernmental gap [Special issue]. *Public Administration Review*, 45, 57-63.
- Rutter, M. (2000). Resilience reconsidered: Conceptual considerations, empirical findings, and policy implications. In J. P. Shonkoff & S. J. Meisels (Eds.), *Handbook of childhood intervention* (pp. 651-682). Cambridge, UK: Cambridge University Press.
- Saskatchewan Watershed Authority. (2010, December 7). *Fall and winter flow advisory for eastern Saskatchewan*. Retrieved from <http://www.saskatchewanbeach.ca/docs/SWA%20-%20Fall%20&%20Winter%20Advisory.pdf>
- Schwab, J. C. (Ed.). (2010, May). *Hazard mitigation: Integrating best practices into planning* (Planning Advisory Service Report No. 560). Chicago: American Planning Association. Retrieved from http://www.fema.gov/media-library-data/20130726-1739-25045-4373/pas_560_final.pdf.
- Shaluf, I., Ahmadun, F., & Mustapha, S. (2003). Technological disaster's criteria and models. *Disaster Prevention and Management*, 12(1), 305-311.

- Shear, K. (2006). Adapting imaginal exposure to the treatment of complicated grief. In B. O. Rothbaum (Ed.), *Pathological anxiety: Emotional processing in etiology and treatment* (pp. 215-226). New York, NY: Guilford Press.
- Shear, K., Frank, E., Houck, P. R., & Reynolds, C. F. (2005). Treatment of complicated grief: A randomized controlled trial. *Journal of the American Medical Association, 293*(21), 2601-2608.
- Smith, G. (2011). *Planning for post-disaster recovery: A review of the United States disaster assistance framework*. Fairfax, VA: P.E.R.I Press.
- Stake, R. E. (1995). *The art of case study research*. Thousand Oaks, CA: Sage Publications, Inc.
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Thousand Oaks, CA: Sage Publications, Inc.
- Sulzberger, A. G. (2011a, June 24). They dropped their flood insurance, then the 'Mouse' roared. *New York Times*, p. 13.
- Sulzberger, A. G. (2011b, June 27). In Minot, N.D., flood waters stop rising. *New York Times*, p. 1.
- Terre Blanche, M., & Kelly, K. (1999). Interpretive methods. In H. Terre Blanche & K. Durrheim (Eds.), *Research in practice: Applied methods for the social sciences* (pp. 123-146). Cape Town: University of Cape Town Press.
- Thomas, C. R., & Holzer, C. E., III. (2006, September). The continuing shortage of child and adolescent psychiatrists. *Journal of the American Academy of Child and Adolescent Psychiatry, 45*, 1-9.

- Topping, K. C., Hayashi, H., Siembieda, W., & Boswell, M. (2010, April). Special issue on “Building local capacity for long-term disaster resilience” toward disaster resilient communities. *Journal of Disaster Research*, 5(2), 127-129.
- Townsend, F. F. (2006, February). *The federal response to Hurricane Katrina: Lessons learned*. Washington, DC: The White House.
- US Army Corps of Engineers. (n.d.a). *About us*. Retrieved from <http://www.usace.army.mil/About.aspx>
- US Army Corps of Engineers. (n.d.b). *Mission overview*. Retrieved from <http://www.usace.army.mil/Missions.aspx>
- U. S. Department of Education. (2006). Creating emergency management plans. *ERCM Express*, 2(8), 1-12. Retrieved from Readiness and Emergency Management for Schools Technical Assistance Center website: <http://rems.ed.gov/docs/CreatingPlans.pdf>
- United States Department of Homeland Security. (2007). *Federal emergency management agency: Public assistance guide*. Washington, DC: Government Printing Office.
- U. S. Geological Survey. (2004, December 26). *Magnitude 9.1 off the west coast of northern Sumatra* [News release]. Retrieved from http://neic.usgs.gov/neis/eq_depot/2004/eq_041226/neic_slav_nr.html

- United States Government Accountability Office. (2007, June). *Report to Congressional requestors. Emergency management: Most school districts have developed emergency management plans, but would benefit from additional federal guidance planning, overview* (GAO-07-609). Washington, DC: Author.
- Retrieved from U. S. Government Accountability Office website:
<http://www.gao.gov/assets/270/261878.pdf>
- van der Kolk, B. A., & McFarlane, A. C. (1996). The black hole of trauma. In B. A. van der Kolk, A. C. McFarlane, & L. Weisaeth (Eds.), *Traumatic stress* (pp. 3-23). New York, NY: The Guilford Press.
- van Horen, B. (2002). Planning for institutional capacity building in war-torn areas: The case of Jaffna, Sri Lanka. *Habitat International*, 26(4), 113-128.
- Viscusi, W. K. (2009, June). Valuing risks of death from terrorism and natural disasters. *Journal of Risk and Uncertainty*, 38(3), 191-213.
- Vollmer, M. (2011). *Relocation of Erik Ramstad Middle School: Why the decision to relocate Erik Ramstad Middle School is the reasonable, prudent and least-cost alternative to rebuilding at the current site*. Paper presented to Robin Finegan, Region 8 FEMA administrator, on December 7, 2011, in Washington, DC.
- Waugh, W. L., Jr. (2000). *Living with hazards, dealing with hazards: An introduction to emergency management*. Armonk, NY: M. E. Sharpe.
- Webb, G. R., Tierney, K. J., & Dahlhamer, J. M. (2000). Businesses and disasters: Empirical patterns and unanswered questions. *National Hazards Review*, 1(2), 83-90.

- Webb, G. R., Tierney, K. J., & Dahlhamer, J. M. (2002). Predicting long-term business recovery from disaster: A comparison of the Loma Prieta earthquake and Hurricane Andrew. *Environmental Hazards*, 4(2-3), 45-58.
- Weissbecker, I. (2009). Mental health as a human right in the context of recovery after disaster and conflict. *Counseling Psychology Quarterly*, 22(1), 77-84.
- Westley, C., Murphy, R. P., & Anderson, W. L. (2008). Institutions, incentives, and disaster relief: The case of the Federal Emergency Management Agency following Hurricane Katrina. *International Journal of Social Economics*, 35(7), 501-511. doi: 10.1108/03068290810886902
- Whaley, A. (2009). Trauma among survivors of Hurricane Katrina: Considerations and recommendations for mental health care. *Journal of Loss and Trauma*, 14, 459-476.
- Wilson, J. (2005, August 12). Ethnic minorities to form majority by 2050. *The Guardian*. Retrieved March 1, 2013, from <http://www.theguardian.com/world/2005/aug/13/usa.population>
- Wilson, R. (2005, March). Three quarters of a century: 75 years of the Game and Fish as we know it today. *North Dakota Outdoors*, 67, 4-15.
- Wisner, B., Blaikie, P., Cannon, T., & Davis, I. (2004). *At risk: National hazards, people's vulnerability and disaster* (2nd ed.). London: Routledge.
- Wisner, B., & Walker, P. (2005). The world conference on disaster viewed through the lens of political ecology: A dozen big questions for Kobe and beyond. *Capitalism, Nature, Socialism*, 16(2), 89-95.

- Wolk, M. (2005, September 13). How Hurricane Katrina's costs are adding up. *MSNBC News*. Retrieved March 22, 2013, from <http://www.msnbc.com/id/9329293>
- Woodworth, B. (2006). *IBM crisis response team: Disaster response collaboration* [Powerpoint presentation]. IBM Business Continuity and Recovery Services, IBM Corporation. Retrieved from https://www14.software.ibm.com/webapp/iwm/web/signup.do?source=ind-enurture_short_form&S_TACT=103GY40W&S_PKG=ov22763&cmp=103GY&ct=103GY40W&cr=google&cm=k&csr=21st+Century+Emergency+Management-Branded-
- Wright, R. P., & Rossi, P. H. (1981). *Social sciences and natural hazards*. Cambridge, MA: Abt Books.
- Yarwood, J. (1999). *Rebuilding Mostar: Reconstruction in a war zone*. Liverpool, UK: Liverpool University Press.
- Zappert, L. N., & Westrup, D. (2008, September). Cognitive processing therapy for posttraumatic stress disorder in a residential treatment setting. *Psychotherapy: Theory, Research, Practice, Training*, 45(3), 361-376. doi: 10.1037/0033-3204.45.3.361
- Zehr, M. A. (2005, October 19). Private schools feel slighted by disaster-relief rules. *Education Week*, 25(8), 3, 12.
- Zeman, N. (2012, February). Flooding in Dakota oil patch prompts \$1-billion rebuild. *Engineering News-Record*, 268(5), 17.

Zevenbergen, C., Veerbeek, W., Gersonies, B., & Van Herk, S. (2008). Challenges in urban flood management: Traveling across spatial and temporal scales. *Journal of Floodplain Management*, 1(2), 81-88.