

4-23-2014

# Federal Disaster Declarations and Denials: Analyzing Spatial Equity in the Implementation of the Stafford Act

Richard Salkowe

*University of South Florida*, [rsalkowe@mail.usf.edu](mailto:rsalkowe@mail.usf.edu)

Follow this and additional works at: <https://scholarcommons.usf.edu/etd>

 Part of the [Environmental Law Commons](#), [Epidemiology Commons](#), and the [Geography Commons](#)

---

## Scholar Commons Citation

Salkowe, Richard, "Federal Disaster Declarations and Denials: Analyzing Spatial Equity in the Implementation of the Stafford Act" (2014). *Graduate Theses and Dissertations*.  
<https://scholarcommons.usf.edu/etd/5301>

This Dissertation is brought to you for free and open access by the Graduate School at Scholar Commons. It has been accepted for inclusion in Graduate Theses and Dissertations by an authorized administrator of Scholar Commons. For more information, please contact [scholarcommons@usf.edu](mailto:scholarcommons@usf.edu).

Federal Disaster Declarations and Denials:  
Analyzing Spatial Equity in the Implementation of the Stafford Act

by

Richard Salkowe

A dissertation submitted in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy  
in Geography and Environmental Science and Policy  
School of Geosciences  
College of Arts and Sciences  
University of South Florida

Major Professor: Jayajit Chakraborty, Ph.D.  
Pratyusha Basu, Ph.D.  
M. Martin Bosman, Ph.D.  
Lisa Brown, Ph.D.  
Elizabeth Strom, Ph.D.

Date of Approval:  
April 23, 2014

Keywords: disaster policy, flood, health, recovery, rural

Copyright © 2014, Richard Salkowe

## TABLE OF CONTENTS

List of Tables .....	iv
List of Figures .....	vi
Abstract .....	vii
Chapter 1: General Introduction .....	1
1.1 Introduction .....	1
1.2 Purpose of the Investigation and Summary of Methodology .....	3
1.3 Background .....	4
1.4 Broader Impacts and Significance of the Investigation .....	14
1.4.1 Consilience .....	15
1.5 Research Questions/Hypotheses .....	19
1.5.1 Political Partisanship/Biased Vote Seeking .....	20
1.5.2 Overwhelming Need .....	20
1.5.3 Geographic Inequity .....	21
1.5.4 Disaster Recovery and Individual/Community Health and Well-Being .....	21
Chapter 2: Literature Review .....	23
2.1 Introduction .....	24
2.2 Theoretical Framework .....	25
2.3 Past Disaster Experiences and Behavioral Health Outcomes .....	31
2.3.1 Background: The Eruption of Mt. Vesuvius and the Destruction of Pompeii .....	33
2.3.2 Risk Perception and Behavior in Disasters: A Historical Perspective .....	37
2.3.3 Individual Behavior .....	43
2.3.4 Government and Community Support: A Historical Perspective .....	46
2.3.5 Cultural Competence: A Historical Perspective .....	49
2.3.6 Conclusion: Past Disaster Experiences and Behavioral Health Outcomes .....	56
2.4 Disaster Policy in the United States: A Historical Perspective .....	56
2.4.1 U.S. Disaster Policy Pre-1950 .....	56
2.4.2 U.S. Disaster Policy 1950-2013 .....	60
2.5 The Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 .....	74
2.5.1 Disaster Declaration Process .....	80
2.5.1.1 Preliminary Damage Assessment (PDA) .....	82

2.5.1.2 Criteria Utilized for Public Assistance Disaster Declarations .....	85
2.5.1.3 Criteria Utilized for Individual Assistance Declarations .....	89
2.5.1.4 Stafford Act Funding Mechanisms: Public Assistance (PA) .....	92
2.5.1.5 Stafford Act Funding Mechanisms: Individual Assistance (IA) .....	96
2.5.2 Supplemental Programs .....	103
2.5.2.1 Supplemental Programs: Federal .....	106
2.5.2.1.1 Supplemental Disaster Programs Authorized by a PDD.....	106
2.5.2.1.2 Supplemental Disaster Programs Independent of a PDD .....	116
2.5.2.1.3 Supplemental Programs: Not Disaster Specific .....	118
2.5.2.2 Supplemental Programs: State .....	122
2.6 Prior Research.....	124
2.6.1 The Politics of Disaster Declarations.....	124
2.6.2 Recovery from Disasters.....	130
2.7 Health, Well-being, and the Mechanism for Post Disaster Stress- Related Illness .....	132
 Chapter 3: Case Study: 2008 Illinois Storm/Flood Disasters .....	138
3.1 Introduction.....	138
3.2 Rural Disasters in Illinois-2008 .....	140
3.3 Southern Illinois: A Historical Perspective.....	146
 Chapter 4: Research Design and Methodology .....	152
4.1 Introduction.....	152
4.2 Phase I (National Level) .....	153
4.2.1 Phase I Study Area.....	153
4.2.2 Phase I Archival Data Collection.....	154
4.2.3 Phase I Quantitative Methodology.....	156
4.3 Phase II (State/County Level).....	164
4.3.1 Phase II Study Area .....	165
4.3.2 Phase II Archival Data Collection .....	166
4.3.3 Phase II Quantitative Methodology .....	172
4.3.4 Phase II Qualitative Methodology .....	180
 Chapter 5: Results of Spatial Equity Analysis .....	182
5.1 Results Research Question 1, 2, 3.....	182
5.1.1 All Disaster Declaration Requests .....	182
5.1.2 Marginal Disaster Declaration Requests .....	187
5.2 Results: Research Question 4.....	191
5.3 Discussion .....	197
5.4 Summary.....	205

Chapter 6: Conclusions .....	206
6.1 An Assessment of the Research Findings .....	206
6.2 Limitations of the Study.....	213
6.3 Significance of the Investigation .....	215
References.....	218
Appendices.....	259
Appendix 1: 2008 Illinois Disaster Declaration Request Correspondence.....	259
Appendix 1.1 Southern Illinois Gubernatorial Request	
April 8, 2008 .....	259
Appendix 1.2 Southern Illinois Gubernatorial Appeal of Denial	
May 23, 2008.....	266
Appendix 1.3 Southern Illinois Presidential Denial of Appeal	
August 20, 2008.....	269
Appendix 1.4 Southern Illinois SBA Declaration	
September 2, 2008 .....	272
Appendix 1.5 Gubernatorial Request (DR-1747)	
January 18, 2008 .....	273
Appendix 1.6 Gubernatorial Appeal of Denial (DR-1747)	
February 21, 2008 .....	285
Appendix 1.7 Presidential Disaster Declaration (DR-1747)	
March 7, 2008 .....	289
Appendix 1.8 Gubernatorial Request (DR-1771)	
June 13, 2008 .....	290
Appendix 1.8.1 Gubernatorial Request (DR-1771) Addendum	
June 20, 2008 .....	293
Appendix 1.9 Presidential Disaster Declaration (DR-1771)	
June 24, 2008 .....	296
Appendix 2: IRB Approval.....	297
Appendix 3: Publication Permission Documents .....	301

## LIST OF TABLES

Table 1: Mechanisms for Small Business Administration (SBA) disaster loan eligibility .....	64
Table 2: Federal disaster legislation overview: 1950-2013 .....	73
Table 3: Average amount of assistance per disaster: July 1994 to July 1999.....	92
Table 4: Disaster financial status report-Crisis Counseling Program 1989-2012.....	103
Table 5: Little Egypt American Red Cross services 2008 Southern Illinois .....	105
Table 6: Illinois 2008 supplemental CDBG distribution for eligible PDD counties .....	109
Table 7: 2002-2008 DRA related funding in Illinois.....	120
Table 8: ARRA stimulus funding in PDD denied Southern Illinois counties 2009-2012.....	121
Table 9: Socio-demographic profile - 2008 Southern Illinois PDD denied counties .....	143
Table 10: FEMA oversight committees.....	155
Table 11: Variable names and definitions- federal disaster declaration requests.....	157
Table 12: 2008 Illinois case study counties .....	167
Table 13: Stress-related disorders and control indicators by grouping variable.....	170
Table 14: ICD-9-CM Diagnosis Codes and Frequency of Visits in Study Area (N=12,000).....	175
Table 15: Variable names and definitions- 2008 Illinois stress-related disease .....	178
Table 16: Descriptive statistics for variables analyzed: all disaster declaration requests (N 1775).....	184
Table 17: Logit coefficients and odds ratios: multivariate analysis of “all” disaster declaration requests (1989-2012) .....	185
Table 18: Descriptive statistics for variables analyzed: marginal model (N 1356).....	188

Table 19: Logit coefficients & odds ratios: multivariate analysis of “marginal” disaster declaration requests .....	189
Table 20: Descriptive statistics- stress related disease .....	193
Table 21: Negative binomial random coefficient model: pre-disaster comparison 2007-2009.....	195

## **LIST OF FIGURES**

Figure 1: Overview of disaster declaration process.....	85
Figure 2: Case study area-2008 Illinois storm/flood disasters.....	139
Figure 3: Research design overview .....	153
Figure 4: Study area graphs: mean number of visits for stress-related illness.....	194
Figure 5: Phases of disaster recovery.....	201



## **ABSTRACT**

Federal disaster declarations are authorized by the president under the provisions of the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988. Prior studies have found varying levels of political influence associated with the declaration process. Factors including electoral votes, reelection years, congressional committee appointments, geographic location, and party favoritism have been implicated in claims of inequity associated with the distribution of federal disaster assistance. Compounding these concerns is evidence of recurring problems associated with disparities in the long-term recovery from disasters based on social and economic factors. This dissertation is a response to the call for further research into the political dynamics of disaster declarations. Multivariate hierarchical analytical techniques and key stakeholder interviews were utilized to systematically investigate perceived inequities in the implementation of federal disaster policy and the consequences of those inequities with respect to health-related recovery in communities that had differential access to federal resources. The research findings counter broad claims of political motive in the distribution of federal resources after disasters. However, the observation of a disproportionate post disaster stress-related disease burden in portions of the study area is indicative of a procedural inequity that must be addressed. The recently enacted Sandy Recovery Improvement Act of 2013 calls for a review of eligibility criteria for disaster declarations. The findings of this research are intended to contribute to the review process and assist in the reformulation of public policy in order to address the unique needs of previously unconsidered at-risk populations.

## **CHAPTER 1:**

### **GENERAL INTRODUCTION**

#### **1.1 Introduction**

Spatial equity refers to the consideration of need, justice, and fairness in the distribution of resources and services across different places as well as different socioeconomic and political groups (Hay 1995, Talen and Anselin 1998; Omer 2006). Disasters provide fertile ground for the investigation of spatial equity as the severity of these events is defined by the destruction and reconstruction of our physical and social attachments and the manner in which they are "woven together through space by ..... ties that produce places as changing constellations of human commitments, capacities, and strategies" (Agnew 2009, 37). Fritz (1961) informs us that disasters are events in which a community "incurs such losses to its members and physical appurtenances that the social structure is disrupted and the fulfillment of all or some of the essential functions of the society is prevented." In this context, it is clearly evident that disasters represent much more than a quantifiable compromise to the economic value of the natural and built environment. The post-disaster fragmentation of a community's social structure is represented by the "loss of our places of work and worship; the places of safety, sanctuary, and solace; and ultimately, the places of contentment and emotional well-being that are the markers of a healthy society" (Salkowe 2012).

These are the "humanized spaces" (Tuan 1978) that differentiate hope from despair in the aftermath of disasters. We frame our sense of place around the "decay and renewal of social

relations” (Massey 1994) that define our existence in the midst of catastrophe. We mark our sense of recovery from disaster by the salvation and restoration of our material and emotional resources. Yi-Fu Tuan (1980) reminds us that, "our fragile sense of self needs support, and this we get by having and possessing things because, to a large degree, we are what we have and possess.” Hobfoll, in developing a “conservation of resources” integrative stress theory (1989, 513) suggests that, “people strive to retain, protect, and build resources and that what is threatening to them is the potential or actual loss of these valued resources.” When these resources are lacking or lost in the aftermath of a natural or technological disaster, “people become vulnerable to psychological and physical disorder and debilitated functioning” (Hobfoll and Jackson 1991, 111).

Disaster policy in the U.S. has been formulated with the intent to equitably address the “overwhelming” needs of people and places with indifference to political acts of favoritism, bias, and preference. The Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (P.L. 100-707) (the Stafford Act), was specifically enacted by the U.S. Congress to ameliorate the negative consequences of individual and community resource loss by means of direct and indirect assistance; ranging from psychological and medical services to temporary housing and property repair. Flint (2000, 145) tells us that “There is a recursive and mutually constituting relationship between political acts and the social construction of space that has become axiomatic in geography.” The relationship between the equitable implementation of the provisions of the Stafford Act, designed to preserve and restore our material and social resources in the midst of disaster, and the potential post-disaster incidence of psychological and physical disorders in communities that had differential access to federal government support becomes apparent when the, aforementioned, “conservation of resources” theory is considered.

## **1.2 Purpose of the Investigation and Summary of Methodology**

This dissertation systematically investigates perceived inequities in the implementation and effectiveness of federal disaster policy in the U.S. under the provisions of the Stafford Act, and the consequences of these inequities with respect to health-related recovery in communities that had differential access to the array of federal resources that are available after a disaster. The resultant in-depth study of every disaster declaration and denial issued by the President of the U.S., since the approval of the Stafford Act in 1988 through 2012, provides additional clarity with respect to the local, state, and federal decision-making processes that surround these unfortunate events. Supplementing these findings is a quantitative hierarchical retrospective analysis of stress-related disease recovery outcomes with respect to individual and community physiological, psychological, and social health and well-being in presidential disaster declared and denied counties of the U.S., based on a case analysis conducted in the state of Illinois. This state provided a pertinent study area for the examination of long-term recovery outcomes in disaster affected areas of the U.S. due to the extent of flood exposure that occurred in 2008, the combination of related disaster declarations, denials, and appeals and the political dynamics of presidential discretion in an election year when an Illinois U.S. Senator, from an opposing party, ran as a presidential candidate. The use of triangulated key stakeholder interviews and longitudinal (2007-2009) pre- and post-event encrypted identifier level empirical data from 12,000 Medicare eligible patients, obtained from the Centers for Medicare and Medicaid Services, provided a unique insight into the post-disaster health status of the rural elderly in the study area. The rural elderly were selected for the case study due to documented evidence of disproportionate levels of stress-related illness in certain subsets of this population, a relative lack of access to health services, and less satisfactory outcomes associated with psychological

disorders and comorbid chronic illnesses. (Lawrence and McCulloch 2001; Letvak 2002; Rost et al. 2002; Inder, Lewin and Kelly 2012; Mechakra-Tahiri et al. 2013).

The National Research Council's Committee on Population Panel (2009) has concluded that an "emphasis on the elderly in disaster research is needed precisely so that the special circumstances of older adults are not overlooked, appropriate strategies of mitigation and response can be introduced, and the epidemiologic consequences of disaster for older populations can be better characterized." The panel participants "underscored the importance of surveillance data pre-disaster (sic) and longitudinal data post-disaster to make sense of events and their sequelae." The following retrospective longitudinal analysis is consistent with this directive. The findings of this dissertation provide further perspective into individual and community vulnerabilities and capacities and the tactics that are utilized in the attempt to protect and restore the resources that are essential to health and well-being in the aftermath of disasters.

### **1.3 Background**

Federal disaster declarations and denials (turndowns) are authorized by the president under the provisions of the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (P.L. 100-707) (the Stafford Act). This act created a mechanism for the distribution of various forms of relief aid after disasters including debris removal, temporary housing, individual and family financial assistance, infrastructure repair, emergency communications, and military support for the preservation of life and property (Bea 2006). Disaster declaration requests are considered when a state or local government indicates that it has been "overwhelmed" by the effects of a disaster event and the governor of the affected state has executed the state's emergency plan and requested consideration for federal disaster relief from

the President of the United States (Sylves and Waugh 1996; Bazan 2005). The Stafford Act grants the president permanent and final authority to direct federal aid to affected states (Bea 2005).

The President of the U.S. is not bound to follow the disaster declaration criteria utilized by the Federal Emergency Management Agency and is not obligated to abide by FEMA's recommendation for a declaration or denial of Stafford Act assistance (Sylves 2008). The decision-making processes surrounding a federal disaster relief declaration or denial (turndown) are protected by executive privilege and unavailable for public scrutiny (FEMA 2008; FEMA 2011; McCarthy 2011). This has contributed to the skepticism and confusion associated with perceived inequities in the distribution of federal relief under the provisions of the Stafford Act. This is pervasive in rural communities that have been denied requests for federal disaster relief and was recently highlighted by the mayor of 2012 tornado-stricken Ridgway, Illinois who stated, "I feel like we are the little one at the end and we aren't getting our piece of the cookie" (DeNeal 2012). This sentiment was reinforced by Illinois Governor Pat Quinn, after a 2013 denial for tornado damages in rural central Illinois; "I really feel the federal law that FEMA follows is fundamentally unfair and needs reform...It's not a fair formula for large states that have a big city and rural areas. Those rural areas can get ignored" (Berg 2014). Often plagued by disproportionately higher levels of unemployment, poverty, chronic illness, and unmet medical service needs in an increasingly elder demographic, some rural communities have developed a sense of deprivation and disenfranchisement that they attribute to "political elites" in urban areas and in Washington (Walsh 2012; National Rural Health Association 2013).

Disaster relief to individuals and households under the provisions of the Stafford Act extends well beyond temporary housing provisions. Disaster declarations for Individual

Assistance (IA) may include benefits for immediate and long-term psychological crisis counseling, medical and dental services, consumer aid, legal needs, funeral expenses, tax relief, unemployment compensation, food coupons, relocation assistance, child care cost reimbursement, and loans or grants for repairs or replacement of personal property (FEMA 2008a). Additionally, presidential disaster declarations (PDD) provide an opportunity for affected states and counties to access a variety of supplementary prioritized disaster-related recovery services including the U.S. Department of Housing and Urban Development's post-disaster Community Development Block Grants, the U.S. Department of Agriculture's Rural Development Disaster Assistance loans and grants, and the Department of Health and Human Services – Disaster Assistance for Older Americans program (FEMA 2005; Brown 2012, USDA 2014a).

Attention has been drawn to political motives such as partisanship and vote-seeking behaviors that may influence the decision-making process due to the sole discretion granted to the president with respect to disaster declarations and denials (turndowns) and the observation of a significant increase in both the frequency of disaster declarations and the financial allotment associated with federal aid since the approval of the Stafford Act (Sylves 1998; Downton and Pielke 2001; Garrett and Sobel 2003). In reference to the significant increase in post-Stafford Act requests for disaster declarations, Rubin (2007, 121) indicates that “Seeking presidential disaster and emergency declarations has become a ‘growth industry’ for the U.S.” Sylves (2008, 101) informs us that, “The broader authority to judge what is or is not a disaster under the Stafford Act has provided presidents since 1988 with more latitude to approve unusual or ‘marginal’ events as disasters or emergencies.” The success rate in acquiring a presidential emergency or major disaster declaration increased from 62.5 percent during the pre-Stafford Act

time period of 1953-1988 to 82.7 percent in the 1989-2012 post-Stafford Act time frame (FEMA 2013a). Requests for disaster declarations are 20.2 percent more likely to be granted since the Stafford Act was legislated in November of 1988. Claims of “disaster gerrymandering” (Platt 1999), inefficiency, and inconsistency in the determination and aid distribution process for disaster declarations have been highlighted in prior research and media reports (Sylves and Waugh 1996; Gaul, Morgan, and Cohen 2006). The lack of established specific fixed criteria for the determination of a state’s capacity to be “overwhelmed” by a disaster event has led to scrutiny regarding evidence of the designation of presidential disaster declarations (PDD) that are not associated with major hazard events (Schmidlein, Finch, and Cutter 2008). The ability for the president to modify cost share requirements for major disaster declarations (Bea 2006) and exceed monetary relief thresholds for emergency disaster declarations (Bea 2005) compounds the concern pertaining to subjectivity in decision making protocols. Additionally, federal intervention after disasters has become an expected role of government and the failure to offer assistance could create a loss of confidence during a time of crisis (Sugerman, 2007).

These considerations extend the debate pertaining to the presidential disaster declaration process. Political influences including electoral votes, reelection year, “battleground” state status, affiliations between affected states and key congressional committee appointees, and party favoritism have all been implicated in criticism of the selective approval capacity that is solely designated to the president under the congressional legislative mandate of the Stafford Act (May 1985; Downton and Pielke 2001; Garrett and Sobel 2003; Cutter and Emrich 2005; Krueger 2005; Reeves 2006; Sylves and Buzas 2007; Schmidlein, Finch and Cutter 2008; Reeves 2011, Gasper 2013). The conclusions of these researchers suggest that inequities exist in the implementation of the provisions of the Stafford Act and that relief aid is preferentially



distributed to politically important actors, states, and regions to the disadvantage of areas without equivalent political power and voice.

A burgeoning national budget deficit has led to a renewed focus on the debate regarding the role of the federal government in the response to natural disasters (Hulse 2011; Korte 2011; CNBC 2013). The President of the U.S. has issued 1,199 major disaster declarations and 252 emergency declarations from the initiation of Stafford Act legislation in 1988 through 2012 (FEMA 2013) resulting in a federal outlay of approximately \$344.5 billion for federal disaster assistance from 1989-2009 (adjusted to 2012 dollars) (Lindsay and Murray 2011; FEMA 2013a). The recently enacted Disaster Relief Appropriations Act, 2013 (P.L.113-2), authorized an additional \$50.7 billion in disaster assistance in response to the damages from Hurricane Sandy in 2012 (Painter and Brown 2013). Compounding these fiscal concerns is evidence of recurring problems associated with inequities in the long-term recovery from disasters based on a variety of social and economic factors (Elliott and Pais 2006; Cutter 2006; Brown, Rothman and Norris 2007; Moss, Schellhamer and Berman 2009; Rubin 2009; Adams et al. 2011; Weber and Hilfinger Messias 2012).

The adverse consequences of disasters take an insidious toll on the most vulnerable members of our society. Behind the tragic visage of damaged homes and lost possessions is the realization that subsets of individuals who are disenfranchised by poverty, age, infirmity, race, lower education levels, and lack of social support are at the greatest risk of suffering from the burden of stress-related diseases that may surface in the wake of disasters and these same members of our community may be the least able and least likely to accept help from government (Klinenberg 2002, 47; Barr 2008). Although prior research has established that most people are able to withstand exposure to disasters without long-term adverse health

consequences (Marks and Fritz 1954; Bonanno 2004), the persistence of stress-related behaviors and physiological disorders after disaster events has been well-documented in vulnerable population subsets (Boman 1979; Norris, Friedman, and Watson 2002; Burton et al. 2009; Holman and Silver 2011). The consideration of post-disaster physiological, psychological, and social well-being is critical to the development of effective federal disaster policy with respect to individual and community recovery.

The need to recognize mental and physical health as essential components of individual and community well-being after disasters has been recognized by the U.S. Department of Homeland Security and the U.S. Department of Health and Human Services in the National Preparedness Goal, the National Response Framework, Homeland Security Presidential Directive-21, the National Health Security Strategy, the National Disaster Recovery Framework, and in the Federal Emergency Management Agency's (FEMA) long-term community recovery initiatives (Homeland Security Presidential Directive/HSPD-21 2007; Department of Homeland Security 2008; 2011a; 2011b; FEMA 2009a; U.S. Department of Health and Human Services 2009). The Disaster Mental Health Subcommittee of the National Biodefense Science Board, established to provide expert advice and guidance to the Secretary of the U.S. Department of Health and Human Services (HHS), concluded that "...the most pressing and significant problem that hinders integration of disaster mental and behavioral health is the lack of appropriate policy at the highest Federal level. Compounding that problem is the lack of any clear statement as to where the authority to devise, formulate, and implement such policy should reside" (Disaster Mental Health Subcommittee 2010). The U.S. Department of Health and Human Services (HHS) has placed a "new focus on the societal determinants of health" in its "Healthy People 2020" initiative (2010 U.S. Department of Health and Human Services). The

HHS Secretary's Advisory Committee recognizes that "at a societal level, policies made in governmental, corporate, and non-governmental sectors can impact health and health behaviors in whole populations both positively and negatively" and that the elimination of health disparities will "occur by changing our thinking about health, examining root causes and societal determinants." The broader impacts of the following dissertation are designed to assist in addressing these issues by the systematic investigation of potential inequities in extant federal disaster policy under the provisions of the Stafford Act and the outcomes associated with policy implementation pertaining to the mental and physical health and well-being of disaster-affected individuals and communities.

The concerns pertaining to federal intervention in the response to and recovery from disasters have been heightened over the past several years. Since 1980, the frequency and severity of hydro-meteorological events has been increasing with a concurrent rise in financial losses from these events (Steinberg 2006, 202; Munich Reinsurance Company 2013). The ubiquitous sense of public angst associated with the increased risk of exposure to disasters has been augmented in the past decade by the well-documented limitations in the federal response to Hurricane Katrina and the perceived lack of effective federal oversight associated with the 2010 Deepwater Horizon Oil Spill in the Gulf of Mexico (U.S. House 2006; Birkland and Waterman 2008, Hagerty and Ramseur 2010; Salkowe 2010). In the midst of these unsettling occurrences, there is a growing sense of collective despair regarding the inability of our elected officials to reach consensus on a myriad of public policy concerns. Pulitzer Prize winner, David Rohde (2012), summarized the growing lack of congressional open-mindedness, tolerance, and empathy in categorizing 2012 as "the year that government failed us."

Former Cabinet Secretary John Gardner addressed the growing concerns associated with political partisanship and public cynicism by stating “We must not despair of the Republic” (Gardner 1998). However, public perception of failures in federal policy and practice have contributed to a growing sense of despair with a “Republic” that in the wake of disasters has, too often, become suspect of abandoning the “social contract” that defines the “spatial distribution of rights and responsibilities between citizens and the state” (Pelling and Dill 2010) and “the duties of care that public officials owe to the people of a democratic society” (Ignatieff 2005). Gardner’s (1998) prescient warning, “We must not despair of the Republic”, has found an early roost in the 21st century American political dynamic. “By many accounts, the Congress has been more partisan since the turn of the new century than it had been for a hundred years” (Smith, Roberts, and Vander Wielen 2006). The percentage of Americans indicating confidence in Congress as an institution is at a 40 year nadir, in 2013, with only 10% of those surveyed supporting the actions of our federal legislature (Mendes and Wilke 2013). Wolf, Strachan, and Shea (2012) suggest that congressional incivility has contributed ‘to conditions that make future consensus even less possible, as the emphasis on partisan divisions, political incivility, and unwillingness to compromise demobilizes those voters who prefer civil deliberative politics and mobilizes those who favor the balkanized party positions.’ Senators including Evan Bayh (D-IN), Olympia Snowe (R-ME), and Saxby Chambliss (R-GA) have decided to not seek re-election due to the systemic intransigence that permeates Congress; Bayh in 2010, Snowe in 2012, and Chambliss in 2014 (Smith 2012, Chambliss 2014). Senator Bayh explained his rationale for retirement by stating, “I want to be engaged in an honorable line of work” (Klein 2011). Senator Snowe (2012), in a more hopeful tone, indicates that “Government can work again, but only when Americans support and vote for individuals who will follow the principles of consensus-

building.” Senator Chambliss stated, “This is about frustration, both at a lack of leadership from the White House and at the dearth of meaningful action from Congress” (Chambliss 2013).

Faced with a growing awareness of dysfunctional governance and a stratified electorate, polarized by partisan redistricting and disparate political ideologies (Perlstein 2001; Forgette 2005), there is a substantive concern regarding the effectiveness of our experiment in deliberative democracy (Apperson 2006).

Embedded in the realization of Gardner’s despair (1998) and emblematic of its cause are the aforementioned reports of inequities associated with preferential and partisan politics in the federal response to natural and technological disasters in the U.S., as evidenced in internet blogs, media reports, and the academic literature (Downton and Pielke 2001; Garrett and Sobel 2003; Cutter and Emrich 2005; Krueger 2005; Klein 2007; Schmidlein, Finch and Cutter 2008; Sylves and Buzas 2007; Reeves 2011; ABC News 2012, Vogel 2012). The recent politicization of disaster relief after Hurricane Sandy in 2012 highlights the dismay related to the perception of partisanship and ineffective leadership from our elected representatives with respect to disaster response and recovery. Governor Chris Christie of New Jersey, in a plea for assistance on behalf of his storm-ravaged constituency stated, “National disasters happen in red states and blue states. We respond to innocent victims of natural disasters, not as Republicans or Democrats but as Americans – or at least we did until last night” (CNBC 2013). Congressman Mick Mulvaney (R-SC5) in reference to the contentious deliberations over Sandy aid commented, “Indeed, if we cannot come together under these tragic circumstances to find a way to pay for this relief, do we seriously believe we will have the political will to ever balance the budget”(Faile 2013)?

We have reached a collective “tipping point” (Pelling and Dill 2010); a critical juncture where opportunities for positive change in policy must be manifested and supported by a willing

government. There is no other recourse. Systemic intransigence is not a remedy for political ill-will. In contrast to the well-publicized rancor that is evident amongst our elected officials, bipartisan congressional legislation has been enacted to address concerns pertaining to inequities and inadequacies in the response to disasters in the U.S. The recently authorized Sandy Recovery Improvement Act of 2013 exemplifies the attempts of a functional and deliberative Congress to implement positive change in response to disasters by legislating supplements and revisions to the Stafford Act that are intended to improve local and federal response and recovery initiatives (Brown, McCarthy and Liu 2013).

The subsequent multivariate analysis of every disaster declaration and denial since the Stafford Act was signed into law, through 2012, counters several of the prior claims of academic researchers pertaining to political partisanship and preference in the distribution of disaster relief under the provisions of this policy. The in-depth findings of this dissertation respond to the call for further research into the political dynamics of disaster declarations (Sylves and Buzas 2007; Sobel, Coyne, and Leeson 2007; Schmidlein, Finch, and Cutter 2008). The consideration of confounding variables that were absent in prior studies reveals that the mandate of presidential privilege in disaster-decision making is not synonymous with presidential impropriety in the implementation of the provisions of the Stafford Act. Political patronage and the spoils of financial aid are not “the remorseless working of things” (Whitehead 1948, 17) in the federal response to natural disasters. These important observations allow us to move past an assumed notion of immutable political bias in presidential disaster declaration decision-making and focus on the recovery outcomes of disaster affected communities with the intent to support effective Stafford Act policy reformulation.

## 1.4 Broader Impacts and Significance of the Investigation

Robert Sack (1997) has challenged human geographers with a task, as *Homo Geographici*, to pursue investigations that increase our moral awareness of the differences that exist between and within our socially created spaces. Consistent with this mission, Sack (1997, 248) tells us that, “The local can be understood and accorded respect only if people attain a more objective perspective, enabling them to see beyond their own partiality and to be held responsible for this larger domain.” This is a critical observation at a time when the partiality of political sentiment has called to question the ability of elected officials to govern effectively (Muirhead 2010). Faced with a growing frustration in the seemingly irreconcilable differences that are the antithesis of a deliberative democracy, we have collectively lapsed into a state of bitter and weary discontent. The resultant sense of ennui permeates the electorate (Walsh 2012) and challenges our ability to enable effective change in disaster practices on a local, state, and federal level. David Rothkopf (2013), alarmed by the lack of public protest and outcry in the face of the 2013 partial federal government shutdown, suggests that, most disturbingly, what the citizenry is saying is, “We don't believe you any more and we are starting not to care.”

Joe Scanlon (2013), in referencing Scott Knowles (2012, 306), informs us that, “Research into disasters matters, it has real human and economic repercussions and when the research is productive but cannot influence disaster policy, cannot help shape the risks, then we have failed to live up to our obligations as social scientists, ..... as those privileged enough to understand what's at stake.” McGuirk (2011, 236) builds upon this sentiment in calling for “an orientation to policy research with (as opposed to for) the state in critical praxis: an engaged and politicized process of collaborative, situated knowledge production aimed at advancing critical ethical and normative agenda. This relies on a recognition of states, first, as complex social

terrains with intense institutional capacities and, second, as porous to intersections with critical researchers aiming to advance progressive policy interventions.”

This dissertation attempts to adhere to the challenge of the aforementioned scholars by advancing the knowledge and understanding of the factors that are associated with effective governance in times of disaster and the consequences of those actions with respect to the resources and recovery of individuals and communities affected by these untoward events. The first deliverable from this investigation, *Federal Disaster Relief in the U.S.: The Role of Political Partisanship and Preference in Presidential Disaster Declarations and Turndowns* (Salkowe and Chakraborty 2009), has been quoted and cited by the Library of Congress-Congressional Research Service in 2 independent reports to the U.S. Congress (McCarthy 2010; Lindsay and McCarthy 2012). In this regard, it is hoped that the initial and subsequent findings of this research will contribute to the critical examination and reformulation of disaster policy in the U.S. The previously referenced Sandy Recovery Improvement Act of 2013 (P.L. 113-2) (Brown, McCarthy and Liu 2013) specifically mandates that the Federal Emergency Management Agency (FEMA) review the subjective components of the Individual Assistance provisions of the Stafford Act in order to provide a better understanding of eligibility criteria for disaster affected communities. The following analysis is intended to respond to the call for public input and contribute to the federal review process by providing empirical evidence of stress-related disease recovery outcomes in disaster declared and denied counties of the U.S.

#### **1.4.1 Consilience**

Anthony Oliver-Smith (1999, 29-30) informs us that, "a political ecology perspective on disasters focuses on the dynamic relationships between a human population, its socially



generated and politically enforced productive and allocatable patterns, and its physical environment, all in the formation of patterns of vulnerability and response to disaster.” This dissertation undertakes a syncretic approach to an investigation of the dynamic relationships that exist between federal policy, community practice, and individual outcomes in disaster affected areas of the U.S. It embraces Oliver-Smith’s political ecological perspective (1999, 29-30) by contextualizing patterns of health vulnerability within a framework of political response to the extreme environmental disturbances that result in requests for Stafford Act disaster declarations from the President of the U.S. It expands upon the role of geographic inquiry with respect to human-environment interactions by systematically examining the political ecology of stress-related disease (Mayer and Meade 1994; Mayer 1996) in flood damaged areas of Illinois.

Specifically, this study investigates the implementation of federal disaster policy based on political decision-making and how differential access to federal disaster related resources may be associated with the development and persistence of stress-related illness in the aftermath of natural and environmental disasters. This integrative pursuit provides transformational evidence-based outcome methodologies that are applicable to a variety of geographic investigations of the human condition and the myriad of social, cultural, and political factors that influence health and well-being. The resultant multiscalar inquiry connects the universal to the particular (Agnew 1996) by considering macro-level federal policies that provide support to disaster affected communities and the micro-level biological effects of those policies as exhibited by the incidence of stress-related disease in individuals who had differential access to post-disaster resources.

At its core, the following dissertation is an effort at consilience (Whewell 1840; Wilson 1998); an attempt to unify the knowledge that encompasses policy and practice; implementation

and outcome; action and consequence, in the arena of U.S. disaster policy and disaster recovery. This necessitates a rigorous analysis of, both, the factors that are associated with disaster declarations and denials under the provisions of the Stafford Act and the resultant recovery outcomes in communities that had differential access to Stafford Act related resources. A fragmented investigation of policy implementation will not suffice, nor will a stand-alone inquiry of health-related disaster recovery. As geographers, committed to the study of human-environment relations, we are well-served by adhering to the Kantian concept that “the revival of the science of geography . . . should create that unity of knowledge without which all learning remains only piece-work” (Harvey 2000). Nearly a century ago, Harlan Barrows called for a geographic emphasis on the relationships that exist between the natural environment and the distribution and activities of man in his 1922 presidential address before the Association of American Geographers. Barrows (1922, 10) informed us that the “solution of the geographic problem requires the use of psychological, economic, and political facts”. Consistent with these observations, Mayer and Meade (1994, 103) reveal that the study of disease ecology:

*.....considers the numerous social, economic, behavioral, cultural, environmental, and biological factors which create disease in specific places at specific times (Meade 1977). As such, disease ecology is inherently concerned with integrating the social and physical aspects of human existence. This is one of the claims that geographers frequently make in defending and defining their discipline, and disease ecology is the embodiment of this claim.*

The Stafford Act is not an arcane mandate situated on the periphery of the human condition. It is the “centerpiece” of federal disaster policy in the U.S. (Moss, Schellhamer and

Berman 2009). This legislation enables multiple scales of horizontal and vertical governance to be simultaneously operationalized in response to the ravages of flood, fire, wind, and earthquake. It authorizes the distribution of a vast array of direct and indirect disaster support services that are designed to protect and restore the material and emotional resources that are the hallmarks of our sense of well-being. We must retain a framework of understanding, throughout the following discourse, which defines disasters as events that disrupt the social structure of a society (Fritz 1961). In this regard, it is evident that disasters represent the most severe moments of our individual existence and the capricious manner of these events often exposes the least capable and most vulnerable members of our society to disproportionately devastating outcomes (Cutter, Boruff, and Shirley 2003; Fothergill and Peek 2004; Cutter and Finch 2007).

While John Gardner justifiably forewarned of the dangers of “despair of the republic”, it is evident that within our private, parochial, and public spheres there are individuals who, on a daily basis, despair of their own existence. The higher incidence of hopelessness, sadness, and a sense of worthlessness amongst the rural poor, elderly, and culturally marginalized is empirically established (Hauenstein 2003; Pleis, Lucas and Ward 2009; Plonczynski et al 2012). These individuals are inordinately burdened with a molecular despondency that is manifested by the biochemical markers of stress and pain that are associated with anxiety, depression, and the myriad of comorbid physiological maladies that may be prevalent after disaster exposure. There is an essential cogent connection that exists between an examination of the politics of federal disaster policy and the potential persistence of post-disaster stress-related disease amongst the disadvantaged rural elderly. A meticulous dissection of the sinew of spatial relations that connect disaster policy to disaster recovery is critical to an understanding of the situational pathology that afflicts these individuals. A toxic level of concurrent psychological and physiological stress

often exists amongst those who are disproportionately burdened by chronic levels of poverty, poor health, and lack of social support (Kristenson et al. 2004; Barr 2008; Shonkoff, Boyce and McEwen 2009; McEwen and Gianaros 2011).

Exposure to disasters and the resultant loss of material and emotional resources may serve as a tipping point towards a downward spiral of progressive illness in people who are already compromised by advancing age and lower socioeconomic status. The following dissertation rests the question of spatial equity and federal disaster policy in the weathered hands of these individuals. If we count upon their fingers, the noted concerns of political partisanship; patronage; privilege; and preference and the concerns of post-disaster health outcomes related to age; access; gender; culture; and poverty, we will garner a greater appreciation for the insidious nature of previously unrealized inequities and for the unity of knowledge that embodies a geographic approach to disaster research.

### **1.5 Research Questions/Hypotheses**

Although prior research has used various methodologies to examine inequities associated with responses to presidential disaster declaration requests, there is a substantive need to address remaining gaps in the literature that pertain to a more thorough consideration of variables associated with political favoritism, “overwhelming” need, geographic preference, and disaster recovery. Ultimately, it is necessary to ascertain if the implementation of federal disaster policy adheres to a public choice model that focuses on the individual political needs of legislators or a redistributive process that is based on the “overwhelming” needs of disaster stricken communities. A multi-level and multi-method research approach was employed to investigate

the equitable implementation of the provisions of the Stafford Act based on the questions that are summarized below.

### **1.5.1 Political Partisanship/Biased Vote Seeking**

Is there significant evidence of political partisanship or biased vote-seeking behavior in the distribution of presidential disaster declarations and denials under the provisions of the Stafford Act? Do the findings support prior claims of political favoritism in the decision making process? These questions will be addressed by empirical analysis of all presidential disaster declarations and denials in the U.S. from 1989-2012.

*Hypothesis:* Presidential Stafford Act disaster declarations and denials in the U.S. are not influenced by political partisanship or biased vote seeking behavior.

### **1.5.2 Overwhelming Need**

Is there significant evidence that the distribution of presidential disaster declarations in the U.S. is based on the "overwhelming" need of states/counties since the initiation of the Stafford Act in 1989? Do the findings support prior claims of inequity in the distribution of disaster declarations in the U.S. for marginal, small-scale disaster events that are not associated with "overwhelming" need? These questions will be addressed by empirical investigation of all presidential disaster declarations in the U.S. from 1989-2012.

*Hypothesis:* Presidential Stafford Act disaster declarations and denials in the U.S. are influenced by the "overwhelming" need of a state/county.

### **1.5.3 Geographic Inequity**

Is there significant evidence of geographic inequities in the distribution of presidential disaster declarations and denials under the provisions of the Stafford Act, after controlling for economic losses and the severity of major disaster events? Do the findings support prior claims that geographic inequalities in the receipt of presidential disaster declarations are not solely based on the pattern of major hazard events? These questions will be addressed by empirical investigation of all presidential disaster declarations and denials in the United States from 1989-2012.

*Hypothesis:* There is no evidence of geographic inequities in the distribution of presidential disaster declarations and denials under the provisions of the Stafford Act in the U.S. Geographic disparities in the distribution of presidential disaster declarations and denials under the provisions of the Stafford Act are based on the differential prevalence of natural hazards in certain regions of the U.S.

### **1.5.4 Disaster Recovery and Individual/Community Health and Well-Being**

Is there a significant difference between presidential disaster declared and presidential disaster denied places that experienced similar types of natural disasters, with respect to post event disaster recovery, as measured by changes in indicators of individual and community health well-being? This question will be addressed by a longitudinal comparison of indicators of stress-related psychological and physiological disorders in presidential disaster declared and denied counties of a single state (Illinois) that were recipients of gubernatorial declared storm/flood disasters in 2008.

*Hypothesis:* The recovery from similar types and scales of disaster events is the same in presidential declared and presidential denied counties of Illinois in 2008 under the provisions of the Stafford Act.

## CHAPTER 2: LITERATURE REVIEW

### **Note to Reader**

Portions of this chapter have been previously published in the *Journal of Homeland Security and Emergency Management* (2009) and have been reproduced with the permission of Walter de Gruyter Inc. for institutional repositories from: Salkowe, R. and J. Chakraborty, Federal Disaster Relief in the U.S.: The Role of Political Partisanship and Preference in Presidential Disaster Declarations and Turndowns, DOI: 10.2202/1547-7355.1562 (See Appendix 3). The final publication is available at [www.degruyter.com](http://www.degruyter.com) <<http://www.degruyter.com/view/j/jhsem.2009.6.1/jhsem.2009.6.1.1562/jhsem.2009.6.1.1562.xml>>

Additional portions of this chapter have been previously published in *Behavioral Health Response to Disasters*. 2012. Teasley, M. and J. Framingham, eds. and have been reproduced with the permission of CRC Press-Taylor and Francis Group from: Salkowe, R., Past Disaster Experiences and Behavioral Health Outcomes, DOI: 10.1201/b11954-3 and Salkowe, R. and J. L. Framingham, Government Roles and Responsibilities in Disaster Behavioral Health Response and Recovery, DOI: 10.1201/b11954-6 (See Appendix 3). The final publication is available at [www.crcnetbase.com](http://www.crcnetbase.com). <http://www.crcnetbase.com/doi/book/10.1201/b11954>.



## **2.1 Introduction**

The following literature review provides a purposive historical analysis of the psychological consequences of disasters. It is introduced to establish the importance of a culturally sensitive behavioral health perspective as a component of disaster recovery. This portion of the chapter provides the reader with contextual background vis-à-vis the documented narratives of disaster survivors since the 79 A.D. eruption of Mt Vesuvius in Pompeii and, in so doing, provides a foundation for the consideration of persistent stress-related psychological and co-morbid physiological disorders as a measure of disaster recovery.

A detailed summary of disaster policies and practices in the U.S. that are pertinent to the dissertation is provided in conjunction with a review of prior research findings associated with perceived inequities in the distribution of federal disaster declarations under the provisions of the Stafford Act. This portion of the chapter is relevant to the research questions addressing political partisanship/biased vote seeking, overwhelming need, and geographic inequity and it provides a mechanism for understanding the “patchwork quilt” (Thomas and Bowen 2008) of various governmental programs, policies, and resources that are available to address the needs of disaster affected individuals and communities in the U.S. Portions of the policy review that are pertinent to the 2008 Illinois case study are highlighted where specific provisions and requirements of the Stafford Act interfaced with community practices in a manner that influenced the presidential decision making process and/or contributed to perceptions of inequitable access to federal assistance. This will provide critical insight into the mechanisms that may have contributed to the disaster declarations and denial that were issued in Illinois after the flood events of 2008.

An overview of post-disaster stress-related disease and the biological, psychological, and social mechanisms associated with psychological stress in disaster survivors is included to serve

as a basis for addressing the research question pertaining to individual and community health and well-being.

## **2.2 Theoretical Framework**

Stevan Hobfoll (1989), in a “Conservation of Resources” (COR) theoretical framework, describes “psychological stress” as a major factor affecting people’s health and well-being and the avoidance of stress as an essential motivating influence in human behavior. Hobfoll defines psychological stress as a reaction to the environment in which there is the threat of a net loss of resources, the net loss of resources, or a lack of resource gain following the investment of resources (Hobfoll 1989, 516). COR theory places primacy on our desire to avoid material and social resource loss and considers the attainment and retainment of four classes of resources as predictors of stress or eustress (i.e. well-being): “Object resources” such as cars, houses, and material goods which represent shelter and socioeconomic status; “Conditions” which serve as resources that are often valued and sought after such as power, prestige, tenure and seniority; “Personal Characteristics” which act as resources to resist stress such as self-efficacy and self-esteem; and “Energies” which represent resources such as time, money, knowledge, and social networks.

The following analysis of the political and health geographies of disasters in the U.S. utilizes a pluralistic theoretical construct (Bohman 1997) that is framed by Hobfoll’s COR perspective regarding the primacy of resource preservation amongst the respective agents in, both, the disaster declaration decision-making process and in the disaster recovery process. In regard to the preservation of resources associated with prior claims of inequities in the distribution of Stafford Act disaster declarations, the reference is to the resources of power,

prestige, influence, and the retainment of status for the president, governors, congressional representatives, and FEMA operatives involved in the disaster declaration decision-making process. In regard to the loss of resources associated with the individuals and communities who have been exposed to the consequences of disaster declarations and denials, the reference is to the full extent of social and material “Object” resources that are at risk of loss in the midst of devastation from disasters. As disparate as these perspectives may appear, they are concomitantly adherent to the fundamental premise of COR theory. The central tenet of Hobfoll’s COR model is that individuals maximize the obtainment, retainment, and protection of those things that they value in order to avoid psychological stress and establish a sense of well-being. (Hobfoll 1988; Hobfoll, 2001, 341). It is Hobfoll’s assertion (1989, 517), that individuals maximally “strive to develop resource surpluses in order to offset the possibility of future loss” and that the primacy of avoiding the loss of resources supersedes the desire to acquire gains. This theoretical construct has been applied in a variety of contexts from “political messaging” (Farinella 2012) to “burnout and stress in organizational settings” (Lee and Ashforth 1996) and has been utilized in prior research as a framework for understanding the vulnerabilities and resiliencies that are associated with psychological distress and resource loss in disaster scenarios (Freedy et al. 1992; Benight et al. 1999; Arata et al. 2001). This dissertation employs the COR theoretical framework to examine the “Condition” and “Energy” resource considerations of disaster declaration decision makers, which may lead to the inequitable distribution of federal relief, and the “Object” and “Personal Characteristic” resources of disaster affected individuals who have differential access to post-disaster federal resources.

If we acknowledge Hobfoll’s assertion that our resource preservation tactics are undertaken with the prime intent of avoiding psychological stress and preserving a sense of well-

being (eustress), it becomes evident that in some cases, “rational choice” agents may choose an inequitable partisan path to assure the self-preservation of the acquired resources of power, prestige, and elected office. This is the conclusion of the previously cited researchers who have determined that there are improprieties in the actions of the president, congressional representatives, and administrative appointees with respect to the selective appropriation of disaster declarations and denials under the provisions of the Stafford Act. Barnes (1987, 84) informs us that, in a world of scarce means but unlimited desires, individuals must make choices and he refers to a rational actor, known as Homo economicus, who makes choices that maximize his/her personal gain (resources) given the limited means that are available. Homo economicus is the offspring of “rational choice” theory, a concept that has historical roots in the invisible hand of Adam Smith’s free market ideology (Barnes and Sheppard 1992) and Bentham’s Utilitarianism; a belief in the individual maximization of the resource of happiness (Hurtado 2008). Alexander Hamilton (1775) appears to have been an early adherent to the principles of rational choice theory in stating that "every man ought to be supposed a knave and to have no other end in all his actions but private interest". Homo economicus is a person who will settle for nothing less than the best (Simon 1978). In the most radical form, he/she plays the role of a self-serving egoistic unfettered capitalistic decision maker. This is a creature who acts upon an assumed essentialist instinct of personal gain and accumulation without complete awareness of the long term societal consequences of his/her actions.

Homo economicus exists as a stakeholder in the field of political science under the constructs of “public choice” theory which proposes that politicians react to issues they face based on personal gain, as manifested through the attainment and preservation of power and prestige, and independent of motivation that is focused on public benefit and need (Buchanan

and Tullock 1962; Garrett and Sobel 2003). Garrett and Sobel (2003) utilize the “public choice model” to explain presidential motive in disaster declaration decision making. Similarly, Frisch (2006, 18) references the “distributive model” of congressional organization in stating that members of Congress seek membership in committees that will best serve their interest in reelection. Peterson’s (1995) “legislative theory” suggests that the president is primarily motivated by political incentive and that congressional influence will prevail in bargaining between the president and Congress. Individual political gain supplants altruistic motive under the premise of a public choice model, a distributive model, or legislative theory. This concept is readily applied to political motivations regarding disaster request declarations and turndowns and the intergovernmental relationships that exist amongst a variety of bureaucratic, legislative, and executive stakeholders.

However, the complexities of decision making under the premise of public choice, distributive, and legislative theory have been criticized by several authors (Barnes 1987; Barnes and Sheppard 1992; Miller 1992; Peterson 2005; Frisch 2006). John Rawls (1993) was a strong advocate of both rational and reasonable moral powers that coexist and are central to political decision making. Favoritism in the form of partisan behavior towards members of congress or governors who represent the same political party as the president is indicative of an entrenched method of preserving power amongst like-minded elected representatives. Rawls viewed partisanship as a manifestation of injustice (Muirhead 2003) and this perspective is exemplified in findings that suggest federal disaster relief is disproportionately distributed based on political partisanship that is independent of actual community need or by biased vote-seeking via the selective distribution of a greater frequency of disaster declarations to areas with a higher number of electoral votes and/or during reelection cycles.

The Stafford Act mandates that presidential decision-making in times of disaster will be predicated on the "overwhelming" need of a state. The intent of this policy is the antithesis of the notion of a self-serving legislative bureaucracy ruled by Homo *economici* under the pretext of rational choice or public choice theory. The redistribution of federal revenues under the provisions of the Stafford Act is, in fact, an applied manifestation of the Marxist sentiment, "from each according to his ability, to each according to his need" (Marx 1875). Additionally, it is worth noting that Adam Smith (1776), whose notions of "laissez faire" capitalism contributed to the conceptualization of Homo *economicus*, was also the author of *The Theory of Moral Sentiments* (1761, 5), in which, he notes that, "humans have a natural tendency to care about the well-being of others" particularly when "we see firsthand the fortune or misfortune of another person". It is evident that conflicting tendencies associated with rational and reasonable decision-making processes provide for complexities in the analysis of the equitable implementation of presidential disaster declarations under the provisions of the Stafford Act.

Rational choice and public choice theories provide the framework for several of the previously mentioned studies that address political partisanship in the implementation of the Stafford Act. However, rational choice is based on a construct of "methodological individualism" which has been critiqued as incompatible with the processes of collective action and the norms of trust, justice, and social obligation that are essential to the effective governance and functioning of a civilized society (Scott 2000). The influence of various social structures on the decision making actions of individuals during disasters suggests that an essentialist notion of the unfettered independent capacity of human agents is inherently flawed. Giddens (1986), in the development of his theory of structuration, informs us that human agents and social structures are not independent entities. The structuring of social actions and social relationships over time

and space is dependent on a recursive interactive process that exists between individuals and their respective social systems and social places (Thrift 1985; Sack 1997). Homo sapiens are evidently capable of making decisions based on the influence of private, public, and parochial realms and Giddens offers an alternative to the rigid framework that binds Homo economicus.

Although structuration theory provides a valid foundation for understanding the reciprocal relationship between social structures and individual behavior, concerns have been raised regarding the failure for this theory to adequately address differences that exist between individuals with respect to behavior and decision making (Gove 1994; Pickel 2005). Pickel (2005, 456) informs us that "the individual actor or individual member of a social system is at the same time a complex system itself, i.e. a biopsychosocial system. This implies that in addition to social mechanisms, individuals are subject to biological and psychological mechanisms shaping personal development and personality change". Engel (1977) emphasizes the interdependency between physical and mental health and the social environment in his biopsychosocial model. Borrell-Carrio et al. (2004, 576) explain that the biopsychosocial model, "is a way of understanding how suffering, disease, and illness are affected by multiple levels of organization, from the societal to the molecular". These concepts have been further developed by McEwen and Gianaros (2011) and Barr (2008) in defining the role of chronic social and environmental stressors in the development of illness secondary to maladaptive behavioral and physiological processes.

The relationship between the social and environmental stressors that are inherent in disaster scenarios and varied aspects of physical and emotional well-being has been well established (Madakasira and O'Brien 1987; Lutgendorf et al. 1995; Reacher et al. 2004; Bland et al. 2005; Burton et al. 2009). The role of biopsychosocial influence is particularly relevant to this

investigation as individual random effect biological and psychological determinants of well-being were utilized in the assessment of disaster recovery associated with the equitable distribution of disaster relief under the provisions of the Stafford Act. Hobfoll's "conservation of resources" framework provides a valid link between the theoretical "public choice" actions of politicians and FEMA operatives who place primacy on the retention of power and prestige resources and the psychological and physiological consequences of uncompensated resource loss in individuals who were potentially disavowed from the presidential disaster declaration process due to a relative lack of political importance.

### **2.3 Past Disaster Experiences and Behavioral Health Outcomes**

In 1954, the National Opinion Research Center at the University of Chicago produced a seminal report regarding the behavior of individuals in disasters titled, *Human Reactions in Disaster Situations* (Marks and Fritz 1954; Quarantelli 1988). This study revealed that while the majority of disaster survivors suffer from negative psychological effects, there is a low incidence of "incapacitating or behaviorally dysfunctional consequences" (Quarantelli 1988, 305). The report also indicated that widespread looting is an infrequent finding in most disasters in the United States, post-disaster community volunteerism is common, and that social capital is a major factor in determining individual behavior. This research provided some of the earliest insight into post-disaster behavioral outcomes and most of the NORC findings remain consistent with more recent disaster analyses. There are multiple aspects of individual and community capacity that may affect the recovery from the adversities of disasters. Tierney (2007, 512) informs us that, "disasters are occasions that can intensify both social solidarity and social conflict" and prior research has emphasized the importance of cultural competency in disaster



response to address the varied needs of a diverse group of survivors (SRA International, Inc. 2008). The risk of adverse behavioral health outcomes after disasters is influenced by the social, cultural, economic, and political dynamic of afflicted populations and the concomitant interplay between these factors and the type, severity and frequency of the disaster event. The psychosocial consequences of disasters may take an insidious toll on individuals and communities and the relationship between the social stressors that are inherent to disaster scenarios and varied aspects of physical and behavioral well-being have been well established in several prior studies of post-disaster health outcomes (Madakasira and O'Brien 1987; Norris and Murrell 1988; Lutgendorf et al. 1995; Norris, Phifer and Kaniasty 2001; Norris, Friedman, and Watson 2002; Reacher et al. 2004; Bland et al. 2005; Burton et al. 2009).

This portion of the literature review utilizes a purposive sample of historical texts and journals to examine narrative accounts of disaster events ranging from the eruption of Mt. Vesuvius and the destruction of Pompeii in A.D. 79 to the Buffalo Creek flood of 1972. Many of these events precede the time frame of formal structured disaster research and, as such, they are not intended to provide a quantitative measure of behavioral well-being after disasters. Instead, the perspectives of the survivors of these unfortunate occurrences are considered with the intent to provide additional foundation for an understanding of the importance of behavioral health intervention with particular attention to the support structures, or lack thereof, that were historically available to assist in the psychosocial recovery from disasters. The use of temporal context serves an integral role in disaster research as it provides a perspective to frame and substantiate the more recent analyses of behavioral health outcomes after disasters. This summary review attempts to clarify the similarities and differences in our perceptions of disaster

scenarios over varied periods of time and, in so doing, provides us with an opportunity to reassess our progress regarding the response to and recovery from disastrous events.

### **2.3.1 Background: The Eruption of Mt. Vesuvius and the Destruction of Pompeii**

*Nothing, then, was to be heard but the shrieks of women, the screams of children, and the cries of men; some calling for their children, others for their parents, others for their husbands, and only distinguishing each other by their voices; one lamenting his own fate; another that of his family; some wishing to die, from the very fear of dying . ... Among these were some who augmented the real terrors by imaginary ones; and made the frightened multitude falsely believe that Misenum was actually in flames-* Pliny the Younger (Melmoth 1809, 307).

These words, retrieved from a letter written to Tacitus, the Roman senator and historian, several years after the eruption of Mt. Vesuvius in A.D. 79, represent Pliny the Younger's recollection of the scene during the Pompeii disaster which resulted in the estimated death of more than 10,000 people. Pliny the Younger, who later achieved acclaim as an author, lawyer, and magistrate in ancient Rome, was 17 years of age at the time of the eruption of Pompeii and he had witnessed the devastation and ensuing chaos, first hand, from the town of Misenum on the Bay of Naples. His uncle, Pliny the Elder, the Roman naturalist and philosopher, had succumbed to respiratory complications from the inhalation of volcanic ash fall during an attempt to provide support to the citizens of Pompeii. Similar vivid accounts of disasters have been retold in varied forms throughout history after events ranging from the Antioch earthquake

in A.D. 526 to the Indian Ocean tsunami of 2004. Although there are unique aspects associated with each disaster occurrence, there is some degree of consistency with respect to the range of human emotions and behaviors that are evident during the response and recovery phases of disasters. Pliny the Elder died in a heroic attempt to provide aid to the people of Pompeii. Pliny the Younger maintained an extensive set of letters that provided details of Roman life during the 1st century A.D. and he had sufficiently recovered from the mental duress associated with his exposure to the devastation of Mt. Vesuvius to pursue a career as an attorney in A.D. 80, the year after the Pompeii disaster. The citizens who had lost family, friends and neighbors exhibited an array of stress-related responses and the role of emotional comfort and community support after the disaster inevitably played a substantial role in the recovery process. This is represented in a correspondence to Pliny the Younger from a friend of his uncle:

*At this point, my uncle's friend from Spain spoke up still more urgently; if your brother, if your uncle is still alive, he will want you both to be saved; if he is dead, he would want you to survive him- why put off your escape? We replied that we would not think of considering our own safety as long as were uncertain of his* (Sigurdsson and Carey 2002, 40).

These sentiments are indicative of the mutual concerns that are shared by survivors of disasters and the potential to ameliorate the adverse effects of disaster events by support mechanisms ranging from individual aid to government intervention. Community support was not limited to individual outreach after the eruption of Vesuvius in A.D. 79. The news of the disaster traveled rapidly to Rome and the Emperor Titus Flavius acted rapidly to provide relief to

disaster survivors. Titus Flavius had become emperor two months before the eruption of Vesuvius and upon learning of the disaster he immediately left Rome for the region of Campania where he organized aid and reconstruction efforts (Sigurdsson and Carey 2002; Suetonius 2007). The emperor used the funds obtained from the value of estates belonging to deceased disaster victims without heirs to assist in the reconstruction efforts and he supplemented the necessary disaster relief with his own personal accounts. Suetonius (2007, 326), the Roman historian, informs us that, “with regard to the public buildings destroyed by fire in the City, he (the Emperor Titus) declared that nobody should be a loser but himself.” Survivors from the devastated areas of Pompeii and surrounding communities fled the area and sought refuge in other cities. Titus Flavius provided special privileges to the cities that were willing to accommodate the survivors of the disaster (Sigurdsson and Carey 2002). Titus Flavius returned the following year to evaluate the reconstruction efforts in Campania and during his travels, there was a devastating fire and a resultant plague in Rome. Once again, the emperor provided relief to the afflicted citizenry and “for the relief of people during the plague, he employed in the way of sacrifice and medicine, all means both human and divine” (Suetonius 2007, 326). These extensive measures of government support were undoubtedly integral to the well-being of the populace that was affected by the event and the actions undertaken by Titus Flavius in response to the Pompeii disaster are consistent, in many aspects, with present day federal disaster policies and protocols in the United States.

It is worth noting that the Roman Empire in A.D. 79 had a social structure that was based on several classes of citizenry with slaves residing at the lowest end of the social ladder. Approximately 40 percent of the population of Pompeii was estimated to be slaves. Many of the slaves were unable to leave the city during the disaster as they did not own horses or carriages

and some were found chained to wheat grinders along with mules in the archaeological excavation of the ruins of Pompeii (Dyson 2006). The benefits of government intervention and community support were not as easily accessed by the slave class. Pliny the Younger unintentionally attests to the differential status of slaves in describing the death of his uncle, Pliny the Elder:

*Upon this, an outbreak of flame and smell of sulphur, premonitory of further flames, put some to flight and roused him. With the help of two slave-boys he rose from the ground, and immediately fell back, owing (as I gather) to the dense vapour obstructing his breath and stopping up the access to his gullet, which with him was weak and narrow and frequently subject to wind. When day returned... his body was found whole and uninjured, in the dress he wore; its appearance was that of one asleep rather than dead* Pliny the Younger (Lewis 1890)

The unanswered question is what became of the slave-boys? While it is understandable that Pliny the Younger's recollection of the tragic events of the day were focused on his uncle's suffering and heroic efforts, the reality of the situation reveals the fact that the slave-boys who attended to Pliny the Elder were exposed to the same risk and their story remains untold. These selective and abridged recounts of disaster scenarios are common in historical writings with respect to the misfortune of the "underclass", as will be seen in narratives from disasters in the United States during the late 19th and early 20th centuries. The concept of culturally competent intervention after disasters is antithetical to the plight of those groups that were disenfranchised

from the equitable consideration of suffering and, in some cases blamed, for the social unrest that ensued after the crisis.

Nearly two millennia removed from the Pompeii disaster, we are able to see the similarities between this historically tragic event and present day disaster interventions that are designed to improve psychosocial well-being. The past can serve as a prologue to the future with respect to behavioral health outcomes after disasters. The letters of Pliny the Younger and the findings of the excavation of Pompeii reveal a story of emotional comfort, community support, and government intervention, albeit selective, to assist in post-disaster recovery. The following analysis of historical events provides additional insight into the perceptions and behaviors of individual actors, the role of government and community support, and the necessity for cultural competence in disaster response and recovery.

### **2.3.2 Risk Perception and Behavior in Disasters: A Historical Perspective**

Disasters are inherently full of uncertainty and the processes of decision making under the dynamics of uncertainty demand a broad consideration of various factors that influence human behavior. Those of us who are not directly exposed to the disaster scene often wonder why the victims and survivors of these events did not pursue more purposeful actions to protect themselves and their families. The behaviors that are prevalent in disaster environments are often associated with limits on human cognition that constrain the capacity to consider all relevant choice options in a given scenario. This concept of limitations in rational thought with respect to decision making (Simon 1957) during disasters may be associated with stress-related physiological compromise and/or the constraints that exist with respect to insufficient time, knowledge, and resources to make optimal decisions (Gigerenzer 1997). Evacuating from a

disaster scenario may not be practical if there are limitations in available transportation or if the perception of risk to family and personal possessions compromises the willingness to leave the area. Additionally, the role of disaster-related emotional arousal has been acknowledged as a source of bounded rationality (Kaufman 1999).

Historical accounts of disasters provide valuable information regarding the vulnerabilities of populations that settle in hazard-prone areas. The tendency for human habitation in areas that are associated with a high risk of hazard exposure and subsequent disaster is often a result of the land use and transportation amenities that exist in these same places. The dissertation case study area of rural Southern Illinois has an extensive history of changing land use and transportation demands that have compromised the economic productivity of the region. Places that are prone to flooding and volcanic eruption are also associated with fertile plains and hillsides that yield bountiful food crops. Regions that are prone to hurricanes, typhoons, and tsunamis are also places of commerce, trade, and transportation where population density became centralized during historical periods of settlement. The benefits of the land and waterways far exceeded the risk of infrequent disaster and we have constructed a world of high risk places, rural and urban, seemingly unaware of the inevitable outcome.

Smith (1992) describes three forms of risk perception that people exhibit in order to cope with the potential danger associated with natural hazards: determinate perception, dissonant perception, and probabilistic perception. Determinate perception involves the assumption of pre-determined regularity or repetition of disaster events and is often utilized by individuals who assume that structural mitigation and technological advancements have removed the hazard risk. Dissonant perception encompasses the denial of risk and danger associated with hazardous events. Probabilistic perception acknowledges the random nature of natural disasters but may be

associated with a loss of the sense of responsibility to prepare for disasters as they are attributable to the forces of nature. Risk perception in the late 19th and early 20th centuries was affected, in part, by limited prior experience with the hazards that existed in particular geographic locales and the nascency of valid geophysical and meteorological warning systems. Recent settlement and high rates of immigration often resulted in lack of familiarity with potential local hazards. This is a problem that persists in regions of the world where migration has exposed socially marginalized people to high risk from natural hazards. Violent conflict and the demise of rural agrarian lifestyles led to an exodus of immigrants to the coastline of Thailand prior to the 2004 tsunami. The individual lack of familiarity with the type of natural hazard risk in this area played a significant role in the ultimate death toll (Wisner 2006).

The attachment to places ranging from the Mississippi flood plain to Port-au-Prince, Haiti is often created out of necessity and the acceptance or denial of risk becomes a valid coping mechanism. The industrial mill towns of Pennsylvania and West Virginia, during the mid-20th century, were representative of areas where known hazards were considered to be an acceptable risk in return for the benefit of stable employment. In 1948, a temperature inversion trapped poisonous fumes from the local zinc smelter over Donora, Pennsylvania resulting in the death of 25 people and illness in an estimated 43 percent of the 13,600 residents (Townsend 1950). Quarantelli (1988) notes that personnel from the Army Chemical Center who were evaluating the community after the event noticed that some citizens who were not exposed to the poisonous fumes were exhibiting physical symptoms similar to those individuals who suffered direct exposure. This was considered to be an early indicator of psychosocial factors affecting behavioral health after a disaster. Although there was limited crisis intervention



capacity at this point in the response to disasters, the Donora event did lead to the passage of the federal Air Pollution Control Act in 1955.

While some risk related decision-making processes are based on the necessities of livelihood, other choices are made out of dissonant disregard for potential danger due to the perceived advantage of the particular amenities of land and sea (Salkowe, Tobin and Bird 2006). Garesche (1902, 97), describes the prevailing attitude in Martinique prior to the eruption of Mt. Pelee in 1902:

*That a disaster such as this would at some time occur in this volcanic region had frequently been predicted. The group of islands to which Martinique belongs is wholly of volcanic origin, and there has never been lacking proof of the thinness of the earth's crust or evidence that nature's great fires had not been wholly extinguished. Geologists who had made a careful study of the region had time and again declared that Mt. Pelee was liable to burst forth in eruption at any time. ... Men had no fear of it. They even dared to toy with it and on its sides, nearly half-way to its dangerous mouth, built a pleasure resort, and there many of the wealthy people had erected handsome homes, where they resided nearly all the year.*

Willis Fletcher Johnson (1889), quotes an inhabitant of Johnstown after the flood of 1889,

*We were afraid of that lake seven years ago. ...People wondered, and asked why the dam was not strengthened, as it certainly had become weak; but nothing was*

*done, and by and by they talked less and less about it, as nothing happened, though now and then some would shake their heads as if conscious the fearful day would come some time when their worst fears would be transcended by the horror of the actual occurrence (p. 34-35).*

Lake Pontchartrain's levees evoked similar concern from citizens, hazard experts, and government officials for years prior to their failure during Hurricane Katrina in 2005. Many of the inhabitants of St Pierre, Martinique, San Francisco, and Johnstown were obviously aware of the dangers associated with their chosen location and ignored the known risk based on the infrequency of its occurrence and the preferential aspects of living in these areas.

Supernatural and deistic powers were often associated with disaster causality in the historical literature (Salkowe, Tobin and Bird 2006). The Lisbon earthquake of 1755 has been referred to as the first modern disaster due to the extensive emergency management measures that were put into place by the government in response to this event. This earthquake was also unique in European disaster history as it was the one of the earliest recorded events where "natural" rather than "supernatural" causality was offered as an explanation for the disaster (Dynes 1997; Alexander 2002). After the 1902 Mt. Pelee eruption on Martinique, Reverend G. Scholl of Chicago stated,

*The scientists of Martinique, on the day before the horrible catastrophe, according to official and press reports, met and declared that all was well and safe at St. Pierre. The next day the hand of God was upon the place and their lips are now silenced as to their explanation. We firmly believe the trembling of the*

*earth, the volcanic eruptions and misfortunes which are still growing, are sure signs of the coming end and are just what the Bible sets forth with reference to the approaching end of the world and the second coming of Christ. The Galveston disaster was likewise considered by us as a punishment meted out by God and as a warning (Garesche 1902, 222).*

The attribution of natural disasters to a higher authority remains present in today's society and the recent 2010 earthquake in Haiti has been associated with a "pact with the devil" (ABC News 2010). Drinker (1918, intro), in review of the 1913 Dayton flood, makes a salient point that transcends the time frame from the secular interpretations of the Lisbon earthquake of 1755 to the present day by stating,

*In the presence of such a fearful disaster there are few persons who will say, but there are some who will think, that this is in some manner a visitation decreed upon the communities which suffer. The very magnitude and superhuman force of it will suggest to many minds the thought of an ordered punishment and warning for offenses against a higher power. Such a concept, happily more rarely held now than in earlier times, is, of course, revolting to sober judgment and to the instincts of religious reverence. For it would imply that multitudes of the innocent should suffer indescribable cruelty; it would attempt the impossible feat of justifying the smiting of Dayton, where all the inhabitants lived lives of peaceful, helpful industry, and the sparing of communities where men serve the gods of*

*dishonest wealth and vicious idleness. This was no vengeance decreed for human shortcomings. It was superhuman, but not supernatural. It was but a manifestation of the unchangeable, irresistible forces of nature, governed by physical laws which are inexorable.*

### **2.3.3 Individual Behavior**

Individual behaviors after disasters range from selfless acts of heroism to dysfunctional panic. Prior research has noted differences in post-disaster measures of stress, well-being, and resiliency based on factors including age, race, marital status, and prior disaster experience (Kilijanek and Drabek 1979; Norris and Murrell 1988; Ferraro 2003). The work of the National Opinion Research Center (Mark and Fritz 1954) and subsequent studies have revealed that the great majority of disaster affected individuals exhibit highly adaptive behavioral characteristics and are able to recover from the event without incapacitating consequences. Historical accounts of prior disasters address these findings.

*For two days after the great catastrophe the people of the city of Galveston were stunned. They seemed to be dazed. It is a remarkable thing that there were no signs of outward grief in the way of tears and groans to mark the misery that raged in the breasts of the people. Only when some person who was thought to have been dead appeared to a relative living, who had mourned for him or her, were there any tears. There was a callousness about all this that attracted the attention of those who had just come to the unfortunate place. There was a stoicism in it, but it was unexplainable. It indicated no lack of appreciation of*

*what had occurred. It demonstrated no lack of affection for those who had gone. Nature, generous in this instance, came to their relief in a way and made them dull to the seriousness of what had occurred to an extent which prevented them from becoming maniacs, for if the grief which comes to a mortal when he loses a dead one had come to his whole community the island would have been filled with raving maniacs. In case of individual losses there is always someone near to give consolation. Had the grief come to the whole island there could have been no consolation, for every soul on it had lost in some way that which was dear to it (Green 1900, 102-103).*

Similar descriptions of the emotions of disaster-stricken individuals were described in recounts of the aftermath of the 1972 Buffalo Creek dam collapse and flood disaster in West Virginia. Persistent traumatic neurotic reactions affected 80 percent of the population, 2 years after the event (Tichener and Kapp 1976). Erikson (1976, 157) provides a telling recollection of the emotions of a disaster survivor:

*I think we will have to leave Buffalo Creek before we can get any peace. I have been a resident of this place for forty-five years and now I am unhappy, dissatisfied, and disturbed. The disaster has left me very nervous. When something like that happens and all the friends you had down the years-some are living and some are dead and some you don't know where they're at- you don't forget something like that. As we stood in the rain and snow and saw what we saw coming down the hollowhouses washing down Buffalo Creek, people crying*

*and getting out of the creek naked and almost frozen to death, people begging for help which we could not give, I had about twenty or more of my kin killed in the disaster, and if these things won't crack a person up they sure are strong people.*

The findings of posttraumatic stress in the Buffalo Creek flood survivors highlight the need for crisis intervention and behavioral first aid after disaster events. Emotion-focused and problem-focused coping mechanisms (Brown, Shiang and Bongar 2003) were exhibited in reports of personal reconciliation with the consequences of the Johnstown Flood and in the heroic acts of individuals after the San Francisco earthquake.

*Just below Johnstown, on the Conemaugh, three women were working on the ruins of what had been their home. An old arm-chair was taken from the ruins by the men. When one of the women saw the chair, it brought back a wealth of memory, probably the first since the flood had occurred, and throwing herself on her knees on the wreck she gave way to a flood of tears. 'Where in the name of God,' she sobbed, 'did you get that chair? It was mine- no, I don't want it. Keep it and find for me, if you can, my album. In it are the faces of my husband and little girl (Johnson 1889, 112).*

*To stand clear headed and observant while the world seems on the edge of utter ruin, one must be either a very great or a very depraved soul. Nero fiddled while Rome was burning. It was the crowning act of the world's supreme pessimist. But the San Francisco earthquake discovered men and women actuated by the most*

*sublime motives, who not only looked with cool judgment upon 'the wreck of matter and the crash of worlds' but went down into the seething furnace and remained on duty there in order that the world might know something of what was taking place in that ruined and burning city (Banks and Read 1906, 115).*

### **2.3.4 Government and Community Support: A Historical Perspective**

Lofland (1998) describes three realms of social interaction; private, parochial, and public, that are particularly relevant to the consideration of support mechanisms after disasters. The private realm is represented by family and kinship networks, the parochial realm is represented by neighbors and acquaintances, and the public realm is the “world of strangers” (Kusenbach 2006). Each of these spheres defines a portion of our social capital. Historically, the recovery from disasters was primarily dependent on the support of the private and parochial realms. In the United States, there was no well-defined structured intervention from the “world of strangers” until the formation of the American Red Cross in 1881. Federal disaster relief was not structurally mandated until 1950 in the U.S. and government assistance was distributed on a case-by-case basis without any assurance of support on a national level. However, prior accounts of governmental and non-governmental intervention after disasters substantiate the importance of the public realm in post-disaster behavioral health and community well-being.

Several nongovernmental organizations were involved in disaster response during the late 19th through early 20th centuries. Communities damaged by the Florida hurricane of 1926 benefited from the efforts of the American Red Cross, the Masonic Service Association, citizen’s committees, and various clubs and fraternities (Sturges, 1931). Medical care was surprisingly efficient as numerous references to sanitation protocols and disease spread warnings are

referenced in the literature including recommendations for boiling water, malaria prevention, and receiving typhoid immunizations (Marshall, 1913, Johnson, 1927, Russell, 1913, Simpich, 1928). A rapid return to some semblance of normal routine was encouraged. During the New England floods of 1927, the public sector intervened to make certain that mail was delivered by rowboat and horse when washed out roads prevented delivery by truck or automobile (Pease, 1928).

Clara Barton, president of the American Red Cross, departed for Galveston in 1900 to assist in the support of disaster survivors, at the age of 79. She issued the following appeal (Green 1900, 186):

*The American National Red Cross at Washington, D.C., is appealed to on all side for help and for the privilege to help in the terrible disaster which has befallen Southern and Central Texas. It remembers the floods of the Ohio and Mississippi, of Johnstown and Port Royal, with their thousands of dead, and months of suffering and needed relief, and turns confidently to the people of the United States, whose sympathy has never failed to help provide the relief that is asked of it now. Nineteen years of experience on nearly as many fields render the obligations of the Red Cross all the greater. The people have long learned its work, and it must again open its accustomed revenues for their charities. It does not beseech them to give, for their sympathies are as deep and their humanity as great as its own, but it pledges to them faithful old-time Red Cross relief work among the stricken victims of these terrible fields of suffering and death.*



Although no formal federal disaster relief policy existed during the late 19<sup>th</sup> through early 20th centuries, the United States government and nongovernmental organizations were responsive to major disasters. Over \$1.5 million dollars (\$38 million 2009 inflation adjusted) (Lerner 1975; U.S. Census Bureau 2009) in relief aid was provided by cities and states throughout the U.S. after the Galveston hurricane in 1900. Twenty-five million (\$589 million 2009 inflation adjusted) (Lerner 1975; U.S. Census Bureau 2009) was raised by relief agencies within seven days of the 1906 San Francisco earthquake (Tyler, 1906) and temporary shelter was provided for 300,000 homeless people (Banks and Read 2006). The United States Congress authorized \$200,000 (\$4.9 million 2009 inflation adjusted) (Lerner 1975; U.S. Census Bureau 2009) for the relief of the citizens of Martinique within four days of the Mt. Pelee eruption in 1902 and adopted the following resolution (Garesche, 1902, 119):

*To enable the President of the United States to procure and distribute among the suffering people of the islands of the French West Indies such provisions, clothing, medicines, and other necessary articles and to take such other steps as he shall deem advisable for the purpose of rescuing and succoring the people who are in peril and threatened with starvation...*

Federal government intervention after the San Francisco earthquake has been critiqued due to the inordinate authority that was granted to the military. However, the presence of federal troops provided the mayor with the power to order the disbandment of self-constituted citizen vigilante committees. Mayor Schmitz of San Francisco stated, “Causes of friction thus being removed and

tangles straightened out, the mighty task of bringing order out of chaos went forward smoothly and rapidly” (Banks and Read 1906, 88).

### **2.3.5 Cultural Competence: A Historical Perspective**

The differential implementation of governmental policy regarding the distribution of relief aid to groups based on race, ethnicity, disability, and socioeconomic status was pervasive during the late 19<sup>th</sup> through early 20th centuries in the United States. The concept of the importance of cultural competence in disaster behavioral health has a foundation that is built on the observations of centuries of inequitable outcomes and compromise to the well-being of marginalized populations. Banks and Read (1906, 84) inform us that, “The care of the Chinese colony received special attention. President Roosevelt asked that the Chinese be given relief, as well as other nationalities, and a separate camp was established for the Orientals, where their peculiar needs were given attention, under the direction of their leading representatives.”

At the time of the disaster event, this action was interpreted as culturally enlightened intervention. Decades later, research has revealed that the treatment of the Chinese after the San Francisco earthquake was associated with a derisive policy of culturally insensitive segregation that undermined the representation of an egalitarian approach to governmental support after disasters (Bancroft Library 2006). The Chinese evacuees settled at a compound near the Presidio, but local residents complained that “they did not want to live downwind of the odors of the encampment” and the Chinese were forced to move at least four additional times by city and military officials (Bancroft Library 2006). Approximately 45,000 Chinese lived in the Chinese quarter in 1906 (Banks and Read, 1906, 157). After the evacuation of Chinatown, there were reports of National Guard troops looting the area (National Park Service 2007) and city officials

recommended against resettling the local population in the Chinatown area due to the presumed commercial development value of the real estate. Tyler (1906, 311-312) indicated that during the 1906 San Francisco earthquake and subsequent fire, “Chinamen of the lower class... sat behind barred windows and guarded their poultry and smoked fish until they themselves were smoked to death,” Morris (1906, Ch V), in referencing the same disaster, notes the slums of Chinatown, the ruin of the Italian tenements, and the flight and panic that ensued during the earthquake and subsequent fires; “Here on one side dwelt 10,000 Chinese, and on the other thousands of Italians, Spaniards and Mexicans, while close at hand lived the riff-raff of the ‘Barbary Coast.’” Seemingly the whole of these rushed for that one square of open ground, the two streams meeting at the centre of the square and heaping up on its edges. There they squabbled and fought.”

These conceptualizations of “foreigners” as more prone to violence and less capable of rational action provided false justification for aggressive action and supported further misrepresentations of blame with respect to looting and social unrest. Criminal acts were disproportionately attributed to “foreigners” and “negroes” in review of the historical disaster literature (Salkowe, Tobin, and Bird 2006). There was evidence of looting, but it was sparse and the media coverage aggrandized the events based on race and ethnicity. Green (1900, 164-165), reporting on the 1900 Galveston hurricane quotes from the Galveston News,

*One soldier at guard reported that he had been forced to shoot five negroes. They were in the act of taking jewelry from a dead woman’s body. The soldier ordered them to desist and placed them under arrest. One of the number whipped out a*

*revolver and the soldier shot him. The others made for the soldier and he laid them out with four shots.*

Halstead (1900, 176-177) quotes observers of criminal activity during the aftermath of the Galveston hurricane of 1900; “I saw a negro woman carrying a large basket of silver that was not hers. ... Upon all hands this horrible work is going on. The offenders are usually negroes. As soon as the storm subsided the negroes stole all the liquor they could get, and, beastly drunk, proceeded with their campaign of vandalism.” Marshall (1913, 90) reveals that after the 1913 Dayton flood, “Nine colored men and one white man were added to the seven suspected looters shot and killed since martial law was proclaimed.” Garesche (1902, 414) reports on the Galveston hurricane of 1900, “Tuesday night ninety negro looters were shot in their tracks by citizen guards. One of them was searched and \$700 found, together with four diamond rings and two water soaked gold watches. The finger of a white woman with a gold band around it was clutched in his hands.” Johnson (1889, 239), in review of the Johnstown flood of 1889, quotes a correspondent who said, “Last night a party of thirteen Hungarians were noticed stealthily picking their way along the banks of the Conemaugh toward Sang Hollow. Suspicious of their purpose, several farmers armed themselves and started in pursuit. Soon their most horrible fears were realized. The Hungarians were out for plunder.”

The vulnerability of the poor, the ethnically disenfranchised, and racial minorities was evident in late 19th – early 20th century disaster reports. Everett (1913, 85) informs the reader that, “Governor Cox stated, ‘The crowded north side of the river, where there may be thousands of foreigners dead and dying, lay far beyond reach. No one speaks of it, the immediate needs of

the known survivors calling for every attention.” Regarding the Mississippi flood of 1927, Sturges (1931, 180) informs us that,

*Thousands of refugees, white and colored together, crowded the levee tops.... At first there were no shelters and but little food; the levee tops were concentration camps of misery and disease. ...Relief was hampered, in spite of money and willingness, by lack of sufficient motor boats, difficulties of navigation, and the constantly spreading flood waters which turned the safe ground of today into the flooded area of tomorrow.*

However, Barry (1998, 320) writes that a letter from a black Republican activist at the time of the flood stated,

*It is said that many relief boats have hauled whites only, have gone to imperilled [sic] districts and taken all whites out and left the Negroes; it is also said that planters in some instances hold their labor at the point of a gun for fear they would get away and not return. In other instances, it is said that mules have been given preference on boats to Negroes.*

Du Bois (1928, 5) revealed that, “In the white camps transportation on the river boats was issued to individual refugees at their request.” Evidently, blacks were only allowed to leave the camps when the owners of the land on which they share-cropped requested their return. Although Mississippi state law cancelled all tenant indebtedness for sharecroppers during time of flood

disaster, the black sharecroppers were effectively bound to the plantation by the inability to obtain equitable access to evacuation from the flood ravaged area. (Du Bois 1928).

Simpich, (1927, 265) writes, “On the levees, fighting now to save their homes and their lives, white men and negroes work side by side.” However, Du Bois (1928, 7) states, “The work on the Vicksburg levee was entirely the enforced labor of Negro refugees, superintended by armed guardsmen. This was done by order of General Green, the labor to be brought from the colored refugee camps.” Similar historical representations of racial harmony in the response to disaster events are countered by accounts of forced labor and selective punishment. Green (1900, 177) reports that,

*Galveston shall be rebuilt. Galveston shall be the greatest of towns. Hurrah for Galveston! Thus they talked and went about the work of throwing up breastworks against disease by cleaning the town. Thousands of people, negroes as well as whites, went about the work of burning the dead and cleaning away the debris. They asked nothing about wages, even those who had no property. They had begun the fight. It was evident that they intended to keep it up.*

In contrast, Everett (1913, 302) describes the following scene in Cairo, Illinois after the 1913 flood:

*A strange parade was held Tuesday when 100 militiamen marched through the thoroughfares in charge of nearly 600 colored men, whom they had dragged from their homes to act as laborers. The negroes had not responded to the call for help and had to be “gone for.” Although their wives, in some instances, falsified blithely and earnestly from the front door steps, the searches usually were*

*rewarded by discovering the recalcitrants in bed- if not in fact under the bed- endeavoring to avoid service at the levee.*

After the 1928 Florida hurricane it was reported that, “Negroes ordered to load bodies at Pahokee and other Everglade towns were forced to do so at the point of a gun. One negro in town was shot for disobeying. They were better then” (Kleinberg 2003, 187). The mass burial of deceased black hurricane victims in the pauper's cemetery at West Palm Beach stood out as a marker of racial injustice after this hurricane disaster. These opposing representations of equity in the treatment of marginalized individuals after disasters are indicative of the overt cultural insensitivity that existed during this period in history. The fact that the residents of rural counties in the dissertation study area of Southern Illinois have retained a suspicion of differential access to disaster relief resources has, in part, a foundation in the perception of culturally insensitive interactions with some federal emergency management officials (personal communication, anonymous Illinois Emergency Management Agency representative).

The problems associated with the institutionalization of the mentally ill were exacerbated by disaster events and cultural insensitivity to the plight of the disabled was exemplified in the recount of Morris (1906),

*Outside this town, ... was Agnew's State Hospital for the Insane, which was reduced to an utter ruin, a large number of the inmates being killed or injured, while those unhurt escaped and roamed about the country, to the terror of the people. ... The main building of the hospital collapsed, pinioning many of the*

*insane under the debris. The padded cells had to be broken open and the more dangerous patients tied to trees out on the lawn, in lieu of a safer place.*

Clara Barton, founder of the Red Cross, was a strong advocate of culturally competent disaster support and behavioral intervention. Turner (2000, 2) indicates that, “In her dealings with city officials, she carefully crafted a socially progressive role for middle-class white women, attempted to set a more positive example for race relations, and, after her vast experience with disaster survivors, introduced concepts of permanent individual housing for the homeless.” Given the option of providing supplementary goods or money to the African American citizens of Galveston, Barton elected to distribute money directly to the African American Red Cross, so that this organization could appropriately determine the needs of its own community and utilize the funds accordingly. Most of the money was saved to build a “Home for Indigent Colored People” and for Bibles and books for schoolchildren. Barton’s role in providing relief to the Sea Island, South Carolina African American community after the 1893 hurricane was instrumental at a time when the federal government showed little interest in the community. Barton was warned by “locals and by other philanthropists that the Red Cross relief efforts would create a class of dependents because everyone knew that blacks would not work where there were rations given out” (Turner 2000, 10). The African American community on Sea Island rebuilt their homes and replanted their fields; recovering sufficiently by 1900 to provide a donation to the Red Cross for the relief effort in Galveston (Pryor 1988).



### **2.3.6 Conclusion: Past Disaster Experiences and Behavioral Health Outcomes**

Historical recounts of disasters from the destruction of Pompeii in A.D. 79 to the Buffalo Creek flood of 1972 reveal consistencies and variations in post-event behavioral health outcomes based on factors ranging from the severity of the event to individual response capacities and community support. The need for crisis intervention and behavioral first aid has been highlighted in this review by considering the narratives of individuals who experienced these historical events and who suffered the personal consequences of a disaster. The importance of culturally competent disaster support is evident in the retrospective consideration of outcomes that are associated with inequities in access to community resources and behavioral health intervention. Historical perspectives provide an opportunity to reflect upon our progress and to proceed with the investigation of the root causes of differential access to federal disaster support and the reformulation of policy directed towards improving post-disaster health outcomes.

## **2.4 Disaster Policy in the United States: A Historical Perspective**

### **2.4.1 U.S. Disaster Policy Pre-1950**

Federal disaster relief for individuals and communities to assist in the restoration of material and social resource losses dates back to the formative years of the American Republic. Dauber (2013) indicates that congressional appropriations were authorized in 1794 to aid communities and “classes of persons” who suffered from property losses during the Revolutionary War and in 1796 for agricultural losses due to drought. The authority to distribute federal funds and investigate the requests of those petitioning for federal support was assigned to an administrative commissioner during these early efforts at managing the response to the needs of disaster affected communities. This process was reinforced by the Congressional Act of 1803

which authorized federal assistance for the fire-damaged community of Portsmouth, New Hampshire (Clary 1985).

By 1816, due to requests for federal assistance associated with community resource losses from the War of 1812, the U.S. Congress established an administrative process for disaster relief that included a salaried relief commissioner who was sworn to an oath of office and directed to “promulgate rules, regulations, and procedures to govern applications, evidence, authentication, and distribution of funds, and to publish those regulations for eight weeks in every newspaper in the country” (Dauber 2013). During the 19<sup>th</sup> century and early 20<sup>th</sup> centuries 100’s of grants were authorized by congress for events including plague, fire, flood, earthquake, and hurricane, both in the U.S. and abroad. A precedent for disaster relief had been established based on the willingness of the Congress to provide assistance to those in need and a broad interpretation of the General Welfare Clause of the Constitution. In 1822, President James Monroe, in defining the General Welfare Clause as a constitutional basis for federal disaster relief, stated that, “Congress has an unlimited power to raise money and that in its appropriation they have a discretionary power, restricted only by the duty to appropriate it to purposes of common defense and of general, not local, national not state benefit” (Richardson, 1897, 742). Congressional considerations of the equitable distribution of federal relief for those who were suffering from the adversities of disasters were common during the formative years of disaster policy in the U.S. Dauber (2013) reveals that, between 1789 and 1836, 19 requests for disaster relief from the Congress were denied due to the fear of establishing too liberal a threshold for federal assistance and due to concerns regarding the equitable application of federal standards that were utilized in rejecting prior requests for federal assistance.

It is evident that the precedent for Congress to provide federal disaster relief vis-a-vis a de facto declaration process and issue denials of requests for federal assistance has a long-standing basis in the American political dynamic. Additionally, the consideration of “equity” in the disaster decision-making process has served as a foundation for deliberation by elected congressional representatives since the early days of the democracy. The recognition of a “social contract” that defines “the duties of care that public officials owe to the people of a democratic society” (Ignatieff 2005) in providing aid to those who are burdened by losses due to “sudden unforeseeable events over which they have no control and for which they are morally blameless” (Landis 1998) has been recognized by the federal legislature in the U.S. since the early 19<sup>th</sup> century. However, there is also a long history of fervent debate amongst members of Congress regarding the merit of disaster relief. While there was little legislative protest to a federal relief response in large scale events such as the Johnstown flood in 1889 or the Galveston hurricane in 1900, smaller scale events such as the 1886 Portland fire or the Rio Grande flood in 1897 were met with contentious deliberations pertaining to the appropriateness of federal support.

However, the Great Depression of the late 1920’s-1930’s served as a focusing event due to the heightened economic hardships affecting states and localities throughout the U.S. and the post-depression, Reconstruction Finance Corporation, was commissioned by President Herbert Hoover in 1932 to lend funds for the repair and reconstruction of disaster-damaged public facilities. This was followed in 1934 by the delegation of authority to the federal Bureau of Public Roads to provide funding for the repair of disaster damaged highways and bridges (FEMA 2013c).

The roots of federal government involvement and responsibility in disaster behavioral health were established in foundational legislation that created a framework for the present day

organizational flow of federal disaster physical and mental health support and oversight. In 1944, President Franklin Roosevelt signed the Public Health Service Act of July 1, 1944 (42 U.S.C. 201). This policy consolidated and revised a significant amount of existing legislation relating to the Public Health Service and represented the framework for the provision of “resources and expertise to the States and other public and private institutions in the planning, direction, and delivery of physical and mental health care services” (Salkowe and Framingham 2012). Presently, the U.S. Public Health Service via its component agency, the Substance Abuse and Mental Health Services Administration (SAMHSA), “supports the delivery of services to build resilience and facilitate recovery in communities across the United States” (National Institute of Mental Health 2010). SAMHSA is the primary agency providing technical support and administrative monitoring for the federally authorized post-disaster Crisis Counseling Assistance and Training Program (CCP) under the provisions of an interagency agreement with the Federal Emergency Management Agency. This program will be discussed in detail in subsequent sections of the literature review.

In 1946, President Harry Truman signed into law, the National Mental Health Act of 1946, which was legislated in response to the realization of the high incidence of stress-related illness associated with the trauma of combat exposure in soldiers returning from World War II (Herman 1995). This act led to the formation of the National Institute of Mental Health (NIMH) in 1949 which replaced the Public Health Service Division of Mental Hygiene. The NIMH remains an agency of the U.S. Public Health Service and maintains an essential mission to “transform the understanding and treatment of mental illnesses through basic and clinical research, paving the way for prevention, recovery, and cure” (National Institute of Mental Health 2010). The NIMH has supported a broad agenda of research initiatives and grant-funded projects

pertaining to the consequences of stress and trauma after disasters and activated the ongoing Rapid Assessment Post Impact of Disaster (RAPID) research program which was designed to “fund new research grant applications for assessing needs, planning of services, and improving preparedness and response to disasters” (Office of the Assistant Secretary for Preparedness and Response 2008). These measures established the framework for creating an action agenda that led to existing federal policy and for the further definition of government roles and responsibilities in disaster behavioral health response and recovery.

#### **2.4.2 U.S. Disaster Policy 1950 - 2013**

The fractious nature of debate pertaining to congressional support for/against each request for disaster relief eventually led to the passage of the federal Disaster Relief Act of 1950 (P.L. 81-875). This legislation delegated permanent authority for ongoing disaster relief without case-by-case deliberations by congressional representatives and placed sole decision-making authority for disaster declarations in the hands of the President of the U.S. (Platt 1999, Rubin 2007). Although federal disaster relief was defined as secondary to state and local resources, the Disaster Relief Act of 1950 formed the basis for federal and state cost-sharing relationships that were later established (FEMA 2007a). The determination of a disaster declaration by the president was established as contingent upon a gubernatorial request and required substantiation of state resources committed to the relief effort. Coordination with non-governmental relief agencies and local/state response efforts was also a requirement. This important disaster relief legislation was intended to provide relief for public assistance projects involving infrastructure repair (Sylves and Waugh 1996) and did not obligate the federal government to the complete reconstruction of damaged facilities.

The U.S. Small Business Administration (SBA) was established in 1953 and authorized, under the provisions of the Small Business Act of 1953 (P.L. 83-163), to distribute loans to businesses and individuals for the repair of home and business losses associated with disasters. The role of the SBA remains essential in the consideration of the equitable distribution of federal disaster relief. “SBA disaster recovery loans are the primary source of money for the long-term rebuilding of disaster-damaged private property. SBA helps homeowners, renters, businesses of all sizes, and private, non-profit organizations fund repairs or rebuilding efforts, and cover the cost of replacing lost or disaster-damaged personal property” (FEMA 2010). As of March 2013, the SBA had approved approximately 2.0 million disaster loans for over \$52 billion (Small Business Administration 2013). Disaster grants to individuals in Stafford Act presidential disaster declared states will not be considered unless an application has been submitted to the SBA for a disaster loan. “SBA may refer applicants who do not qualify for a loan to FEMA for grants to replace essential household items, replace or repair a damaged vehicle, or cover storage expenses, among other serious disaster-related needs” (FEMA 2014). SBA disaster loans are available for personal and business property losses, repayable over a 30 year term at interest rates of 4% for individuals and businesses that are unable to obtain credit from another source and up to 8% for credit worthy applicants. SBA economic injury loans are available for businesses that need assistance meeting financial obligations and ongoing business expenses due to a declared disaster. These loans are subject to a 4% interest rate. SBA disaster loans for losses that exceed \$14,000 are conditioned upon adequate collateral, including flood insurance where required, and SBA does not offer loan forgiveness for disaster loans without intervention by Congress (Lindsay 2010). The maximum loan for individuals for repair and replacement of a disaster damaged “primary residence” is \$200,000. Loans are not granted for secondary

residences (i.e., vacation homes). Up to \$40,000 in SBA disaster loans are available to homeowners and renters for disaster losses associated with furniture, clothing, appliances, and automobiles (SBA 2014). Business are eligible for up to \$2,000,000 in disaster loans for the repair or replacement of disaster damaged real property, fixtures, equipment, machinery, inventory, and/or leasehold improvements or for economic injury (Small Business Administration 2014).

It is critical to our understanding of the disaster relief process to recognize that there are several mechanisms available for individuals to access SBA disaster loans that are independent of a presidential disaster declaration under the provisions of the Stafford Act. The primary means of financial assistance after disasters in the U.S. does not require a presidential disaster declaration. The majority of counties (11 out of 15) that were denied a presidential disaster declaration in the dissertation study area of Southern Illinois were deemed eligible for SBA disaster loans based on the presence of a gubernatorial disaster declaration and the substantiation of sufficient damages to meet SBA disaster declaration loan eligibility criteria (See Appendix 1). This will be discussed, further, in the critique of prior research that concludes political partisanship and favoritism is a determinant of federal disaster relief without considering the availability of SBA loans. The Stafford Act mandates that a disaster declaration will be issued when a state indicates that its resources and capacities have been overwhelmed and federal disaster relief is required. A component of federal disaster relief under the provisions of the Stafford Act is SBA disaster recovery loans, but, to reiterate, these loans are also available through several mechanisms that are independent of a Stafford Act presidential disaster declaration (See Appendix 1). The SBA has identified six types of disaster declarations,

including Stafford Act presidential declarations, which enable the distribution of SBA disaster loans (See Table 1).

The 1950 Federal Disaster Relief Act was amended during the following 2 decades to address needs for temporary shelter and to distribute surplus goods from the Korean War to disaster affected communities. Presidential discretion in the determination of disaster assistance, which was authorized in the Disaster Relief Act of 1950, was utilized to provide support for temporary housing after a 1952 flood event in Kansas (Bea 2007). The Disaster Relief Act of 1966 (P.L. 89-769) expanded federal relief to rural communities, unincorporated towns, and villages and provided funding for damages to higher-education facilities. This policy affirmed the authority of an Office of Emergency Preparedness to coordinate disaster relief programs (Moss 1999). In 1968, the National Flood Insurance Act (P.L. 90-448) was legislated to provide federally subsidized insurance in communities that followed established floodplain management standards under the guidelines of the National Flood Insurance Program (NFIP). This was augmented by the Flood Disaster Protection Act of 1973 which established mandatory insurance requirements for property in Special Flood Hazard Areas. The failure to comply with NFIP management standards resulted in the lack of insurance for damages in the dissertation study area of Saline County, Illinois after the 2008 flood event.

Although Medicare is not a disaster specific initiative, it is the source of data for the case study area in this dissertation and, as such, a brief review of this federal program is provided for those who are not familiar with health insurance. Medicare and Medicaid were established as the first public insurance programs in the U.S. under the mandate of the Social Security Amendments of 1965 (P.L. 89-97). This program serves as the primary health insurance mechanism for the aged (65 or >), the eligible disabled, and individuals with end-stage renal



disease. It operates under the direction of the Center for Medicare and Medicaid Services (CMS), a federal agency within the U.S. Department of Health and Human Services. In 2008, there were 34,311,500 aged (65 or >) Part A and Part B enrolled Medicare beneficiaries in the U.S. and 1,388,317 aged (65 or >) Part A and Part B enrolled Medicare beneficiaries in the case study area of Illinois (CMS 2014). Medicare has multiple components providing hospital insurance (Part A), medical insurance (Part B), prescription coverage (Part D) as of 2003, and privately operated coverage options (Part C), also known as Medicare Advantage Plans, as of 1997. Various cost-share obligations apply to each component of the Medicare program but low income individuals who are also eligible for Medicaid (dual eligible) are provided with federal benefits that lessen or remove the financial burden.

**Table 1: Mechanisms for Small Business Administration (SBA) disaster loan eligibility**

Stafford Act Presidential Disaster Declarations	President of the U.S. declares a Major Disaster
Agency Physical Disaster Declarations	SBA declares disaster in response to gubernatorial request based on physical damage to buildings, machinery, equipment, inventory, homes and other property. Governor must provide evidence that 25 homes and or businesses, in any county or political subdivision, have uninsured losses exceeding 40 percent of the estimated fair replacement value or pre-disaster fair market value, whichever is lower.
Governor Certification Declarations	SBA makes an economic injury declaration following a governor's certification that at least five small business concerns in a disaster area have suffered substantial economic injury as a result of the disaster and are in need of financial assistance not otherwise available on reasonable terms.
Secretary of Agriculture Declarations	SBA makes an economic injury disaster declaration in response to a determination of a natural disaster by the Secretary of Agriculture.
Military Reservist Economic Injury Loan	SBA may make a Military Reservist Economic Injury Disaster declaration as authorized by the Veterans Entrepreneurship and Small Business Development Act of 1999
Additional Disaster Assistance	SBA may declare eligibility for additional disaster assistance in the event of a presidentially declared disaster if a significant number of businesses outside the disaster area have suffered substantial economic injury.

(Adapted from Small Business Administration 2013, 21-22)

The Disaster Relief Act of 1970 (P.L. 91-606) was created to address unmet needs in prior legislation. This law allowed for the separate category of emergency declaration which was deemed necessary when immediate federal intervention was required for the preservation of life and property and to lessen the threat of catastrophe. The Disaster Relief Act of 1970 legislation established that “Emergency” declarations would require a federal cost share of not less than 75 percent of funds distributed and the financial aid would be limited to \$5 million dollars although the president may exceed this amount with congressional notification if there was a continuing threat to public safety and property. Federal aid in emergency declarations is limited to debris clearance and emergency protective measures including, in part, technical assistance to local governments, co-ordination of disaster relief between government agencies, and individual and household assistance consisting of temporary housing grants and distribution of food, medicine, and consumables.

Disaster Unemployment Assistance (DUA) was authorized by the Disaster Relief Act of 1970 to provide support for disaster affected individuals who are unemployed and not eligible for state benefits (Whitaker 2012). Eligible unemployed workers are defined as:

- the self-employed;
- workers who experience a “week of disaster-related unemployment” ;
- workers unable to reach the place of employment as a result of the disaster;
- workers who were to begin employment and do not have a job or are unable to reach the job as a result of the disaster;
- individuals who have become major support for a household because the head of the household has died as a result of the disaster;
- workers who cannot work because of injuries caused as a result of the

disaster. (Whitaker 2012)

Unemployment benefits are not duplicative and those individuals receiving unemployment assistance from other sources are not eligible for federal benefits. Presently, DUA benefits require a Stafford Act presidential disaster declaration and the loss of unemployment must be directly related to the disaster. Illegal aliens are not eligible for DUA.

Extensions of the Disaster Relief Act in 1970 and 1974 provided for individual assistance via temporary housing and grant programs for furniture, clothing, and essential needs in a cost share arrangement between states and the federal government (Sylves and Waugh 1996). The Disaster Relief Act of 1974 broadened the role of federal involvement in disaster response. This legislation emphasized an all-hazards approach in an attempt to coordinate the historically fragmented response to specific types of disasters and institutionalized the concept of mitigation in disaster management (Sylves 1998). This federal disaster policy authorized a variety of measures that were available to assist individuals and families after disasters and marked the initial mandate for the Crisis Counseling Program (CCP). The establishment of the CCP and the extension of federal benefits under the Disaster Relief Act of 1974 were legislated in response to an understanding of the role and responsibilities of the federal government in protecting the physical and emotional well-being of disaster afflicted individuals and communities. The role of psychological intervention after disasters was a contested topic as mental health experts cited a documented history of adverse behavioral consequences from disasters including the 1942 Cocoanut Grove fire in Boston (Smith 2006) and the 1948 Donora, Pennsylvania “Death Fog” event (Townsend 1950). However, noted social scientists, including E. L. Quarantelli, while supporting the inclusion of crisis counseling in the Disaster Relief Act of 1974, believed that crisis intervention should serve a minor role in disaster relief (Morris 2011). Quarantelli felt that

federal resources would be better served in improving the disorganized structure of disaster relief agencies and social services and posited that an emphasis on individual based mental health services was based on “mythological assumptions” (Quarantelli 1984). The findings of the National Institute of Mental Health after the devastation associated with Hurricane Agnes led to an increased understanding of the adverse psychological and physiological manifestations of exposure to emotional stressors associated with catastrophic events. In 1972, Hurricane Agnes was considered to be “the greatest natural disaster in American history” (Okura 1975, 136; U.S Department of the Army 1972) and a subsequent series of tornado events affecting 10 states and resulting in 6 federal major disaster declarations in 1974 encouraged the federal government to pass the Disaster Relief Act of 1974 (Department of Homeland Security 2003) which included the following extended provisions for individual assistance after disasters (Oregon State University 2004):

- Temporary housing
- Disaster loans
- Tax preparation assistance
- Legal services
- Consumer aid
- Disaster unemployment benefits
- Crisis counseling
- Individual and family grants
- Emergency shelter
- Emergency food
- Emergency medical assistance

- Essential repairs to homes so occupants can return
- Temporary assistance with mortgage or rental payment

The Magnuson-Stevens Fishery Conservation and Management Act of 1976 (P.L. 94-265) allowed the U.S. Secretary of Commerce to consider an independent “fishery” disaster declaration for natural or man-made events that result in a loss of greater than 35 percent of commercial fishery revenue in a specified area. This program provides benefits to fisherman with annual revenue of less than \$2,000,000 for buyback of equipment and vessels and/or assistance in creating a “sustainable” fishery in disaster affected areas. Disaster declaration requests are, normally, initiated by the governor of an affected state or the local fishing community (Department of Commerce 2011).

The Federal Emergency Management Agency (FEMA) was established in 1979, through an executive order by President Jimmy Carter, to “consolidate and coordinate disaster response efforts” (Downton and Pielke 2001, 158) as federal disaster relief efforts had previously been distributed across a vast array of bureaucratic agencies. Sylves and Cumming (2004) indicate that since its inception, FEMA’s jurisdictional priorities have varied from civil defense against nuclear attacks and continuity of government to natural disaster management, depending on presidential administrations and perceived dangers.

Due to burgeoning costs associated with disaster relief, FEMA suggested instituting “economic capability factors” to determine eligibility for assistance in 1986, but this recommendation was not supported by Congress. In fact, in an attempt to preserve the discretionary authority of the president, the Robert T Stafford Act Amendments of 1988 were promulgated in a manner that specifically prohibited the use of any sole formula to determine eligibility for relief aid, leaving the power of final determination under the complete discretion

of the President of the United States (McCarthy 2011). Section 320 (42 U.S.C. 5163) of the Stafford Act states “No geographic area shall be precluded from receiving assistance under this Act solely by virtue of an arithmetic formula or sliding scale based on income or population” (Bazan 2005, FEMA 2007). Although several well-defined thresholds and precedents are utilized in the determination of individual and public assistance declarations by the president, the language of the Stafford Act regarding the prohibition of the use of any “sole” arithmetic formula has augmented the discretionary authority of the president and, in doing so, has served as the basis for claims of political impropriety in the presidential disaster declaration decision making process. Daniels (2010) indicates that the Stafford Act expanded the role of the federal government in disaster response by authorizing amendments to previous disaster legislation allowing for: grants to fund full cost for the reconstruction of eligible private nonprofit facilities and owner-occupied private residential structures, local government overhead expense loans, free temporary housing benefit extensions, the installation of essential utilities, mortgage or rental payments to individuals for up to one year, food stamps, legal services, additional counseling services for low-income citizens, and community economic recovery programs.

Pre-disaster mitigation became an area of increased emphasis in 1997 with the initiation of Project Impact which was designed to foster community partnerships that identified hazards and vulnerability and prioritized risk reduction (Wachtendorf, Connell, and Tierney 2002). This program was discontinued in 2001 and replaced with a competitive based pre-disaster mitigation grant protocol. The Disaster Mitigation Act of 2000 further amended the Stafford Act by establishing additional mitigation plan requirements that called for coordination of disaster planning and implementation activities on a state and local levels (Disaster Mitigation Act 2000). Additionally in 2000, the U.S. Congress recognized the increasing role of the Department

of Health and Human Services in responding to the behavioral health needs that arise as the result of both natural and human-caused emergencies and disasters by establishing Section 3102 of the Children’s Health Act of 2000. This legislation amended the Public Health Services Act to allow for “emergency response” and establish mental health and substance abuse emergency response criteria. This expanded the grant assistance authority of the Substance Abuse and Mental Health Services Administration beyond the established crisis counseling services authorized by the Stafford Act for individual and household assistance in federally declared major disasters. The U.S. Congress “recognized the need to expand emergency services to include both mental health and substance abuse needs, whether or not a Presidential disaster is declared under the above authority. To help address these needs the Secretary (U.S. Department of Health and Human Services), through SAMHSA, was given the mandate to develop a new emergency grant program subsection, entitled “Emergency Response” (Federal Register 2001). This “Emergency Response” provision is included in section 3102 of the Children’s Health Act of 2000 and authorizes the Secretary to use up to 2.5% of the funds appropriated for discretionary grants for responding to emergencies.

FEMA was abolished as an independent agency in 2003 and became part of the cabinet level Department of Homeland Security. The General Accounting Office (GAO) acknowledged the management challenges that faced FEMA in 2003 as it merged with the Department of Homeland Security. The 2003 GAO report emphasized that FEMA must “ensure effective coordination of preparedness and response efforts, enhance the provision and management of disaster assistance for efficient and effective response, reduce the impact of natural hazards by improving the efficiency of mitigation and flood programs, and resolve financial weaknesses to

ensure fiscal accountability” (GAO 2003). The goal was to provide a more comprehensive approach, including mitigation, while providing control over costs.

The Stafford Act was amended by the Post Katrina Emergency Management Reform Act of 2006 (PKEMRA) which was formulated in an attempt to improve the organization and coordination of intergovernmental and non-governmental operations in order to provide a focus on long term recovery in disaster scenarios. Prior to PKEMRA, the emphasis on recovery under the Stafford Act was on the repair of damaged buildings and infrastructure, debris removal, temporary housing and limited home repairs, and revenue loss loans (Bea 2005). The enactment of PKEMRA authorized the lead federal official in presidential disaster declared areas " to activate a team of federal long-term recovery experts to offer technical assistance to States to support particularly challenged communities organize and plan for long-term recovery, as well as access coordinated Federal, State, non-governmental and private sector recovery resources" (FEMA 2009a). Section 219 of PKEMRA amends the Stafford Act to address behavioral health concerns by increasing the legislated provisions to:

*... expand the authorization for professional counseling services to victims of major disasters to include substance abuse and mental health counseling.*

*Requires federal agencies providing mental health or substance abuse services, in coordination with state and local officials, to: (1) survey mental health or substance abuse services available to individuals affected by, and emergency responders to, major disasters; and (2) develop a strategy for the adequate provision of such services (The Library of Congress 2006).*



PKEMRA also created a new position at FEMA: the Small State and Rural Advocate. The designated advocate was assigned to assure that “the needs of smaller states and rural communities were ‘met in the declaration process’ and to assist small states in the preparation of declaration requests” (McCarthy 2011, 6; McCarthy 2011a, 6).

In 2006, the President signed into law, the Pandemic and All-Hazards Preparedness Act which amended the Public Health Service Act by creating an Assistant Secretary for Preparedness and Response (ASPR) in the Department of Health and Human Services to focus on preparedness, planning and response and to strengthen the capabilities of health systems in disasters. This act also established the National Health Security Strategy. The purpose of the Pandemic and All-Hazards Preparedness Act is “... to improve the Nation’s public health and medical preparedness and response capabilities for emergencies, whether deliberate, accidental, or natural” (Public Health Emergency 2010). This law has been integral in the distribution of hospital preparedness grants that are utilized to improve local capacity to handle hospital surge and the resultant psychological trauma associated with mass casualty events.

The Pets Evacuation and Transportation Standards Act (PETS) (P.L. 109-308) amended the Stafford Act to ensure that states and localities had established plans to provide for the care of household pets and service animals following a disaster. This legislation was a result of the observation of a large number of individuals who failed to evacuate high risk areas prior to Hurricane Katrina landfall due to the fear of abandoning their pets and service animals.

The Sandy Recovery Improvement Act of 2013, which was authorized as a portion of the Disaster Relief Appropriations Act, 2013 (P.L. 113-2) amended the Stafford Act by streamlining the approval process for small project Public Assistance grants, providing for family child care expenses, mandating a review of eligibility requirements for Individual Assistance grants, and

authorizing advanced payment for certain Hazard Mitigation Program expenses (Brown, McCarthy, and Liu 2013). This legislation directs federal disaster resources to individuals in presidential disaster declared areas by emphasizing “Disaster Survivor Assistance” This initiative is designed to provide a timely presence in disaster areas to address immediate needs of disaster survivors by, “providing in-person, tailored information and services; providing referrals to whole community partners as needed; collecting targeted information to support decision-making; and identifying public information needs so critical messaging can be developed and disseminated (FEMA 2013e). Table 2 provides a summary of significant federal disaster legislation since 1950 and includes key policy initiatives that have been instrumental in contributing to the extensive network of resources that are available to individuals and communities after disasters.

Table 2: Federal disaster legislation overview: 1950-2013

1950, PL 81-875	Disaster Relief Act: Created permanent relief fund; authorized federal funding for repair of local government facilities, Transferred authority for disaster relief decision making from Congress to the president, established precedent for cost-sharing between federal & state govt.
1951, PL82-107	Amendment to 1950 law: Authorized federal emergency housing
1953, PL 83-134	Amendment to 1950 law: Permitted donation of federal surplus property to state and local governments
1962, PL 87-502	Amendment to 1950 law: Extended federal assistance to state facilities & U.S. Territories.
1966, PL 89-769	Disaster Relief Act: Extended federal assistance to rural communities, towns, and villages.
1968, PL 90-448	National Flood Insurance Act: Provided for federally subsidized insurance and reinsurance
1969, PL 91-79	Disaster Relief Act (Limited to 15 months): Funding for debris removal from private property. Distribution of food coupons, Unemployment benefits for disaster victims. Temporary housing for disaster victims.SBA, FHA, VA loan revisions
1970, PL 91-606	Disaster Assistance Act: Codified existing disaster legislation and added the following: Grants to individuals for temporary housing/relocation. Funding for legal services.
1974, PL 93-288	Disaster Relief Amendment: Distinguished emergencies from major disasters. Emphasized disaster-mitigation programs. Crisis Counseling
1980, PL 96-365	Federal Crop Insurance Act: Made all commercial crops part of the program. Introduced premium subsidy. Permitted private-insurance companies to sell federal crop insurance
1988, PL 100-707	Stafford Act: Present day centerpiece legislation for providing disaster relief
1994, PL 103-325	NFIP Reform Act: Tightened flood-insurance purchase requirements. Expanded mitigation
1994, PL 103-354	Federal Crop Insurance Reform Act: Offered catastrophic coverage at subsidized rates
2000, PL 106-390	Disaster Mitigation Act of 2000-Small State and Rural Advocate
2006, PL 109-295	Post-Katrina Emergency Management Reform Act
2006, PL 109-308	Pets Evacuation and Transportation Standards Act
2013, PL 113-2	Sandy Recovery Improvement Act- Disaster Survivor Assistance Program,Child Care Assistance

Source: Partially adapted from (Office of Emergency Preparedness 1972; May 1985; Moss 1999)

## **2.5 The Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988**

Federal disaster declarations in the U.S. are authorized by the president under the provisions of the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (P.L. 100-707) (the Stafford Act). As summarized in Chapter 1: Introduction, this act codified, clarified, and augmented the previously established mechanisms for the distribution of various forms of federal assistance after disasters including debris removal, temporary housing, individual and family assistance, infrastructure repair, emergency communications, and military support for the preservation of life and property (Bea 2006). This legislation provides the statutory framework for the federal support of state and local resources after disasters (Bazan 2005). The Stafford Act grants the president permanent authority to direct federal aid to affected states by means of a “declaration” of federal assistance (Bea 2005). This policy represents the culmination of two centuries of federal disaster intervention and congressional action designed to respond to the needs of disaster stricken individuals and communities. It has been modified on several occasions and a detailed review of Stafford Act policy predecessors and modifications will be provided in Section 2.3.

The Stafford Act defines two categories of disaster declarations that are under the sole discretionary authority of the President of the U.S.: “Emergency” and “Major” disaster declarations. The Stafford Act also provides for a disaster declaration category of “Fire Management Assistance”, but this declaration classification does not require presidential authorization and is issued, independently, by the Federal Emergency Management Agency. Fire Management Assistance declarations have clearly defined cost thresholds for federal support and

have not been subject to substantive claims of political impropriety with respect to declarations by FEMA. This dissertation focuses on the equitable implementation of Stafford Act disaster declarations that are subject to autonomous presidential authority and, as such, Fire Management Assistance declarations are not included in the analysis.

The Stafford Act defines “Emergency” as “any occasion or instance for which, in the determination of the President, Federal assistance is needed to supplement State and local efforts and capabilities to save lives and to protect property and public health and safety, or to lessen or avert the threat of a catastrophe in any part of the United States” (FEMA 2007).

Federal aid in “emergency” declarations (EM) is limited to “debris clearance” and “emergency protective measures” including, in part, technical assistance to local governments, co-ordination of disaster relief between government agencies, and individual and household assistance consisting of temporary housing grants and distribution of food, medicine, and consumables.

“Debris Clearance” and “Emergency Protective Measures” are defined as Category A and Category B grants in the Stafford Act classification scheme. Emergency disaster declarations require a federal cost share of not less than 75 percent of funds distributed and the financial aid is limited to \$5 million dollars, although the president may exceed this amount with congressional notification if there is a continuing threat to public safety and property.

Presidential declarations for “Snow” and “Winter Storm” disaster events have been historically classified as Emergency (EM) declarations and distribution amounts for federal assistance in these events has often exceeded the \$5 million dollar limit (FEMA 2013a).

A “Major disaster” is defined by FEMA as:

*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 2007).*

“Major” disaster declarations (DR) entitle eligible states and counties to federal benefits that provide for significant extensions of the measures that exist under emergency declarations and include a broad array of individual and household assistance benefits (IA) and public assistance benefits (PA) for the repair, restoration and replacement of infrastructure. Major disaster declarations qualify requesting states to receive the legislated Stafford Act components of Individual Assistance (IA), Public Assistance (PA), and/or Hazard Mitigation Grant Program (HMGP) assistance depending on the federal approval of assessed needs. The Freedom of Information Act acquired FEMA Disaster Financial Status Report from 1989-2012 (FEMA 2013a) indicates approximately 42 percent of major disaster declarations were for Public Assistance, 7 percent were for Individual Assistance, and 50 percent were for, both, Public Assistance and Individual Assistance declarations. Requests for presidential major disaster declarations are initiated by the governor of an affected state, although the president can issue an emergency declaration for a state without the governor’s request in extraordinary situations that

involve primarily federal interests, such as the 2003 Space Shuttle Columbia disaster declaration (FEMA 2003; Bazan 2005). The Catastrophic Incident Annex to the National Response Framework also provides for the deployment of federal resources, including mental health services, in times of significant disaster without requiring a gubernatorial request for assistance (Salkowe and Framingham 2012). Major disaster declarations are also subject to cost-share requirements between the federal government and the declared state or territory. The federal government is obligated to pay not less than 75 percent of eligible and approved costs with the exception of 100 percent federal payments for approved temporary housing awards (FEMA 2007).

Emergency declaration requests can be declared or denied (turndown). Major disaster declaration requests can be declared, denied, or designated as emergency declarations. Approval or denial of emergency disaster declarations and major disaster declarations is under the sole final authority of the President of the U.S. The U.S. Congress appropriates funds for disaster relief on an annual basis to guarantee that federal assistance is available to those communities that have received disaster declarations. These appropriations are considered “no year” funds and are rolled over to the Disaster Relief Fund (DRF) for the following year if not used in the appropriated year. The annual allowance for the DRF appropriation is presently based “on the ten year rolling average of what has been spent by the federal government on relief efforts for major disasters” (Painter 2012). The distribution of these funds is under the auspices of the Federal Emergency Management Agency for distribution in presidentially declared disasters that occur in the U.S. and its territories. Bea (2005, 4) indicates that, “appropriations to the DRF generally evoke little controversy” in Congress. However, as previously noted, the significant fiscal demands associated with recent disaster events, such as Hurricane Sandy in 2012, have

altered the political dynamic with respect to supplemental appropriations (CNBC 2013, Faile 2013). Congressional legislation is required to meet the urgent needs associated with large scale catastrophic events and recent debates have focused on the creation of “budgetary offsets” for approved damages that exceed the available DRF resources (Painter 2012).

The Stafford Act also formally established the federal Hazard Mitigation Grant Program (HMGP) which provided funding to lessen the risk of future disasters by means of structural modifications to buildings and landscape. Eligibility for HMGP funding requires requesting states and counties to have disaster preparedness and hazard mitigation plans in place. Hazard Mitigation Grant funds are available in all areas that have received a major disaster declarations, if requested by the governor. HMGP funds are distributed based on a “sliding scale” formula which is applied as a percentage of the funds spent on a specified prior Public and/or Individual Assistance disaster declaration for the requesting state. The sliding-scale formula provides grant funding for up to “15% of the first \$2 billion of estimated aggregate amounts of disaster assistance, up to 10% for amounts between \$2 billion and \$10 billion, and 7.5% for amounts between \$10 billion and \$35.333 billion. For States with a FEMA-approved Enhanced Mitigation Plan, up to 20% of the total of Public and Individual Assistance funds authorized for the disaster (up to \$35.333 billion of such assistance) are available” (FEMA 2009). Hazard Mitigation funds may be utilized to pay up to 75% of the eligible project costs. Floodplain improvement projects ranging from acquisition and relocation of flood-prone homes and infrastructure to road improvements are eligible for mitigation grants under the provisions of this program. HMGP funding was utilized to buy-out the homes of the residents of the Village of Valmeyer, Illinois after the 1993 Midwest floods. The townspeople adopted a village relocation strategy and the majority of residents chose to move to a higher elevation location in the “new”

Valmeyer (Friend 1994; Knobloch 2003; State of Illinois 2012). Counties that have been turned down for presidential disaster declarations requests are eligible for Hazard Mitigation Grant Program consideration if there has been a major disaster declaration issued by the president for another event in their state and the requesting county has an approved Local Hazard Mitigation Plan. It is important to note that Saline County, Illinois; a 2008 flood damaged and presidential disaster declaration denied county in the dissertation case study area of Southern Illinois did not have an approved local Hazard Mitigation Plan in place until 2012 and was not eligible for mitigation funding under the provisions of this program until that time. West Frankfort, Illinois in 2008 disaster declaration denied Franklin County. received \$6,415,688 in HMGP funding in 2014 to relocate the sewer treatment plant to a location that was 3 feet above base flood elevation. The plant was closed for 200 days after the 2008 flood event (FEMA 2014E).

The HMGP is one component of mitigation planning that is administered by FEMA. The Pre-Disaster Mitigation (PDM) program, the Flood Mitigation Assistance (FMA) program, and the Severe Repetitive Loss (SRL) program are additional federally legislated initiatives designed to reduce risk to people and structures in the event of a disaster (Thomas et al. 2011). Eligibility for each of these programs requires an approved local hazard mitigation plan. In 2012, Jackson County, Illinois received a Flood Mitigation Assistance grant to acquire all residences in the Reed Lake Mobile Home Park and transfer the property into a public county green space. Each homeowner was provided \$25,000 for their residence and \$15,000 for moving expenses. The owner of the mobile home park was awarded \$1.25 million for the land and his personal property (Norris 2012). The Reed Lake Mobile Home Park was previously damaged by flooding in the presidential disaster declaration (PDD) denied area of Southern Illinois in 2008 and again in 2011. The 2011 event received a Major PDD (DR-1991) for Individual and Public Assistance.



The repetitive losses that this community suffered over a time span of 3 years (2008-2011) served as the basis for FEMA's funding of the acquisition costs.

The establishment of clearly defined cost-share requirements was codified in the Stafford Act in conjunction with language that provides the president with the authority to adjust cost-shares for Public Assistance declarations (McCarthy 2010). The federal share of relief aid was not to be less than 75 percent and could be up to 100 percent, including 100 percent of temporary housing costs for disaster declarations that received individual and household assistance. It was also required that states show the nature and amount of their commitment in terms of local resources. In the following years there have been significant waivers to the 25 percent requirement with the federal contribution paying up to 90 percent of assessed damages for several disaster events. The 2013 threshold for seeking waivers to the 25 percent local contribution is \$133 statewide loss per person and waiver consideration is also given if there is more than one disaster in a twelve month period in a specific disaster request area. (Federal Register 2013; Bea 2006). Factors such as previous or recent disaster exposure, local impact, and the percentage of population that is low income, elderly or unemployed (Bazan 2005) are considered when waivers for Stafford Act state requirements are applied to gubernatorial requests. Disaster declared counties in the Illinois dissertation study area were the recipients of a cost share waiver in 2008 for a Public Assistance declaration (FEMA-1771-DR) (Federal Register 2008).

### **2.5.1 Disaster Declaration Process**

Requests for relief under the Stafford act are initiated by the governor of an affected state or territory when a disaster event theoretically surpasses the ability of the state to provide

adequate services to its affected locales. The governor is required to declare a state of emergency, activate the state emergency response plan, and furnish information to FEMA regarding the availability of state resources that are committed to the disaster including the ability to participate in all cost sharing requirements contained in the Stafford Act (Sylves and Waugh 1996; Bazan 2005). Gubernatorial requests for Stafford Act disaster declarations must explicitly indicate that “federal assistance is necessary to supplement the efforts and available resources of the state and local governments, disaster relief organizations, and compensation by insurance for disaster related losses” (FEMA 2014a).

It is important to consider the factors that may influence a gubernatorial decision to request federal relief. Governors must balance the varied needs of their constituents against the loss of public confidence that may result if a turndown of a gubernatorial request for disaster assistance is received from the president (McCarthy 2011). Additionally, governors must consider the potential loss of trust from the president and FEMA operatives if unjust and imprudent requests are made for Stafford Act assistance. The fiduciary obligations of elected office dictate that governors use fiscally sound assessments in requests for disaster declarations due to the mandated state/county cost-share obligation of 25% of federal expenditures for disaster relief. This cost-share is usually divided equally between the state and the disaster declared county and it represents a financial burden that must be considered by elected officials, particularly for Individual Assistance grants in rural counties with limited or non-existent disaster escrow funds and in states with restrictive balanced budget obligations. The “moral hazard” associated with injudicious state and federal support for individuals and communities that have failed to adequately mitigate and prepare for disasters has become part of the equation in determining the basis for a presidential disaster declaration request and the assumption of

associated cost share responsibilities that are mandated in a federal disaster declaration (Kousky and Shabman 2012; Kousky, Michel-Kerjan, and Raschky 2013)

FEMA's recommendation for a presidential disaster declaration is issued when it has been determined that all other resources and authorities to manage the crisis are inadequate. The recommendation is then forwarded to the president from the FEMA director. The capacity for selective application of the objective requirements of the Stafford Act and the broad latitude given to the president in the use of subjective criteria for disaster declaration determinations has created an environment of suspicion regarding underlying motives for marginal disaster declarations and the equitable distribution of federal relief.

#### **2.5.1.1 Preliminary Damage Assessment (PDA)**

FEMA's recommendation for a disaster declaration or denial is based on a Preliminary Damage Assessment (PDA) of the disaster affected area by a team of representatives from county, state, and federal emergency management agencies, American Red Cross representatives, and Small Business Administration operatives (McCarthy 2011; FEMA 2012). The Preliminary Damage Assessment team plays a critical role in the disaster declaration decision making process as the documentation of disaster specific damages forms the basis for a determination of a disaster declaration or denial (turndown) (McCarthy 2011). The fact that PDA teams may consist of volunteers, temporary employees and local representatives with varied levels of experience in assessing disaster related damages is critical to our understanding of the potential for a turndown of a presidential request. McCarthy (2011) informs us that, "... the PDA helps to identify a specific, potential need for certain programs, such as crisis counseling or disaster unemployment assistance during the disaster recovery period. It is this identification of

discrete need that helps the governor decide on which assistance programs will be requested.” Rubin and Colle (2012) indicated their concern regarding the qualifications of personnel involved in the emergency management process in stating, “A large part of FEMA’s workforce is what’s called reservists or Disaster Assistance Employees (DAEs)—full-time but temporary staff who are not regular FEMA personnel. Many of the DAEs do not have an education or a background in emergency management.” In marginal cases, these factors may contribute to inconsistencies in the determination of a substantive need for a presidential disaster declaration. “Insufficient damages and the failure to accurately document damages are the main reasons for a denial of a governor’s request for a federal disaster declaration” (anonymous FEMA representative, Natural Hazards Conference, 2011).

The Preliminary Damage Assessment team has three standard approaches that are utilized in evaluating damages in areas that are requesting a disaster declaration (FEMA 2005a):

1. Windshield Survey- This approach involves assessments of damages by car while driving thru disaster affected communities in conjunction with occasional interviews which serve as benchmarks to determine socioeconomic profile and insurance coverage. This is reported to be a common approach to conducting a PDA (FEMA 2005a) but has been soundly criticized as an inadequate approach (Anonymous FEMA Public Assistance Operative 2013), particularly in flood-damaged communities that are often inaccessible by automobile until the waters have receded and the damages are no longer visible from a “windshield” perspective.
2. Door-to-Door- This is a labor intensive approach to damage assessments but provides a accurate and specific information regarding socioeconomic status, insurance coverage, and degree of damage (FEMA 2005a).

3. Fly-Over- This technique is used in remote areas and or for large scale events to provide a fast assessment of damages but is the least accurate mode of damage assessment.

The turndown of the 2008 gubernatorial request for an Individual Assistance declaration in the dissertation study area of flood damaged Southern Illinois was attributed, in part, to a Preliminary Damage Assessment that involved “drive-by window estimates of flood damages instead of door-to-door assessments. “This may have been part of the reason we got denied” (anonymous county level Illinois Emergency Management Agency (IEMA) county level official 2011). Patti Thompson, IEMA Communications Director, in referencing a 2011 disaster declaration request for flooding in Southern Illinois, stated, “IEMA rushed to request a declaration after flooding in 2008 and got denied..... That's why we really tried to balance being quick as possible and being efficient as possible" (Hevern 2011).

The PDA team assesses the affected disaster area and submits its findings to the requesting governor for his/her consideration. The findings of the PDA form the objective basis for a governor’s decision to request a disaster declaration based on the determination that damages have exceeded the response capacity of state personnel, equipment, and fiscal resources. The gubernatorial request is forwarded to the FEMA Regional Director’s office where the damage assessment is used to compile a Regional Summary and Regional Analysis and Recommendation. Neither the Regional Summary or Regional Analysis and Recommendation are public documents; they are only recommendations (FEMA 2004, 6). This is another factor that contributes to suspicion in cases where gubernatorial requests for a presidential disaster declaration are turned down. Without access to the Regional Summary and/or Regional Analysis and Recommendation, it is impossible to ascertain at which jurisdictional level the declaration or

turndown decision was initially rendered. This summary is forwarded to the federal FEMA Administrator’s office for further evaluation and final recommendation to the president (See Figure 1).

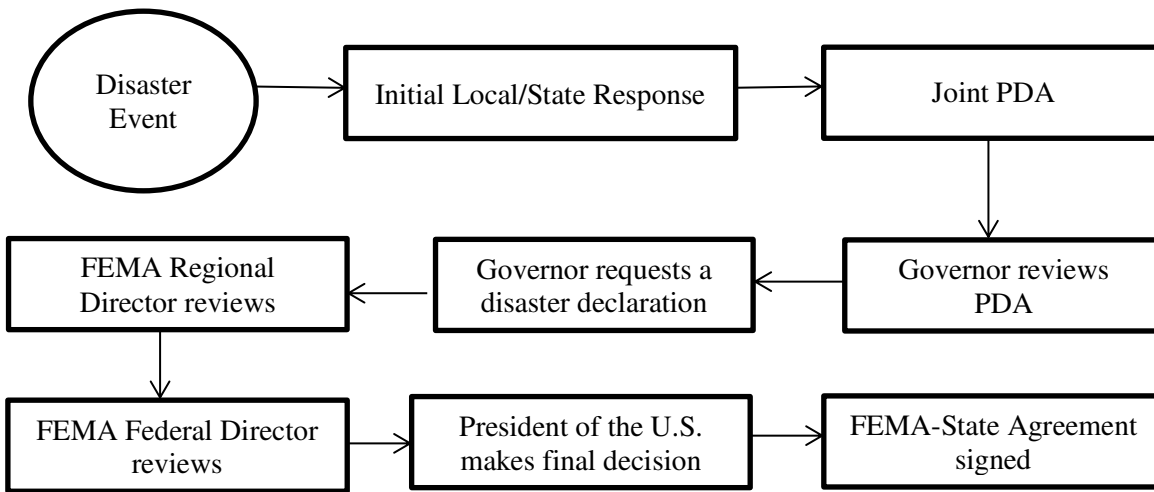


Figure 1: Overview of disaster declaration process (Adapted from FEMA 2010a; FEMA 2012a)

The final recommendation to the president and the decision for a disaster declaration or denial is based, in part, on the following guidance criteria. (adapted from Code of Federal Regulations 44, 2002, 431-433):

### 2.5.1.2 Criteria Utilized for Public Assistance Disaster Declarations

1. Estimated cost of the assistance- Prior to 1999, there were no objective criteria applied to the disaster declaration determination process under the provisions of the Stafford Act with the exception of the requirement for an affected state to show evidence of the fiscal capacity to provide 25 percent of the cost-share associated with the disaster. Since 1999, FEMA’s recommendation for a Public Assistance disaster declaration or turndown has been based, in part, on several objective and subjective factors including a minimum threshold of \$1 million in total

state damages. This fiscal requirement for disaster aid was established as it was assumed that even low population states can manage the obligation for this amount of public assistance. No provision for inflation was made for this threshold upon legislation in 1999 (GAO 2001). In addition, a \$1.00 statewide per capita critical financial threshold was established in 1999 for consideration of public assistance (GAO 2001). This is adjusted annually by an increase in the Consumer Price Index for all Urban Consumers by 1.5% from the prior year and is \$1.39 per capita statewide as of October 1, 2013 (Federal Register 2013b). There is no per capita fiscal damage criteria applied to requests for Individual Assistance disaster declaration requests and, as stated previously, the Stafford Act precludes the use of any arithmetic formula as a sole determinant of eligibility for a disaster declaration.

2. Localized impacts- Extraordinary concentrations of damages that might warrant federal assistance are considered even if the statewide per capita is not met. This is a specified consideration when critical facilities are involved or where localized per capita impacts might be extremely high. The per capita critical financial threshold for localized impacts is \$3.50 per capita countywide (Federal Register 2013a).

3. Insurance coverage in force- Counties that have received prior disaster declarations are required to have insurance coverage in place in order to be eligible for future public assistance benefits. Section 311 of the Stafford Act stipulates that federal assistance is “unavailable in any type of major disaster if the applicant has not complied with all insurance requirements imposed as conditions of previous disaster assistance” (Liu 2008). States may self-insure to meet this requirement but counties/localities that have previously received Public Assistance grant funding must obtain and maintain external insurance and may not self-insure (FEMA 2013b). The Stafford Act stipulates that self-insured states will not be eligible for grants to repair, replace or

restore damaged facilities “to the extent that insurance for such property or part thereof would have been reasonably available” (FEMA 2007). This portion of the Stafford Act was intended to encourage states to take the appropriate actions that were necessary to avoid future unprotected losses from disaster events. However, states can petition the federal government for waivers of insurance obligations if external insurance costs are found to be prohibitively expensive. The determination of insurance availability and prohibitive cost for insurance obligations is delegated to the insurance commissioner of the state requesting the waiver. “The President shall not require greater types and extent of insurance than are certified to him as reasonable by the appropriate State insurance commissioner responsible for regulation of such insurance” (Louisiana Department of Insurance 2010). This provision had led some insurance industry operatives to conclude that, “The U.S. Government is an insurance company with a military” (anonymous Swiss Re Representative, 2012).

Noteworthy exceptions have been made with respect to the obligation to obtain and maintain insurance coverage. In 2008, Lawrence County, Illinois, a rural disaster-declared county included in the dissertation study area, was awarded a Public Assistance disaster declaration, (FEMA-1771-DR), contingent upon its decision to begin participating in the National Flood Insurance Program. Subsequently, Lawrence County administrators voted to abandon the NFIP obligation and in August, 2009 the county discontinued participation in the program due to concerns pertaining to costs of compliance with respect to insurance premiums and building restrictions (Beavers 2009, Smith 2009). Small Business Administration loans that had been distributed to flood affected business after the 2008 flood were subject to federal recall but no action was taken (Illinois Emergency Management Agency official 2012). In fact, Lawrence County has been the recipient of 2 subsequent major disaster declarations, ( DR-1991)



in 2011 for Public and Individual Assistance and (DR-4116) in 2013 for Public Assistance, despite the explicit restrictions in disaster assistance that are listed in Section 311 of the Stafford Act for counties that fail to maintain insurance coverage. Additionally, as of July 2009, Lawrence County residents were the beneficiaries of \$505,898.07 in Department of Health and Human Services Supplemental Social Services Block Grants, specifically authorized for the benefit of states and counties that had received 2008 Major presidential disaster declarations (Office of Sustainability 2009). Personal interviews with 2 emergency management employees in in the dissertation case study area of Southern Illinois revealed an awareness of the disparities that existed in federal assistance initiatives between the disaster declared and denied counties in 2008 and a repeated refrain was that, “They don’t care as much about Southern Illinois” (personal communication anonymous Illinois emergency management officials 2011).

4. Hazard Mitigation- States that have actively implemented hazard mitigation measures to reduce damage costs from disasters are considered eligible for public assistance in certain cases even if the per capita critical threshold indicators have not been reached.

5. Recent Multiple Disasters- States that have experienced more than one disaster event in any 12 month period are given consideration due to the cumulative costs associated with multiple events. Prior Stafford Act declarations and gubernatorial disaster declarations are evaluated with regard to the amount of state funding associated with recent disaster events.

6. Programs of other Federal assistance- Consideration is given to the availability of funds from other federal programs that may be more appropriate or duplicative with respect to a Stafford Act declaration for Public Assistance.

### **2.5.1.3 Criteria Utilized for Individual Assistance Declarations**

1. Concentration of damages- A high concentration of damages in a specific locale is considered a greater priority for an Individual Assistance declaration than “widespread and scattered damages throughout a State” (Code of Federal Regulation 44 2002, 432). This criterion was the rationale for the denial of the request for an Individual Assistance in the dissertation case study area of Illinois after flooding in March of 2008 (Illinois Emergency Management Agency Official 2012).

2. Trauma- The degree of trauma to a state and locality is considered. Some of the listed criteria for a trauma designation are large numbers of injuries and deaths, large scale disruption of normal community functions and services, and emergency needs such as extended or widespread loss of power or water.

3. Special populations- Special populations are defined under the Stafford Act criteria as low-income, the elderly, and the unemployed and the degree to which these segments of the population are affected and have a greater need for assistance.

4. Voluntary agency assistance- The role of voluntary organizations such as the American Red Cross and state or local disaster response and relief programs is considered and federal relief will be withheld if local resources are adequate to respond to the needs of disaster affected individuals and families.

5. Insurance- The amount of insurance coverage that exists for individuals who reside in the disaster affected area is considered in the declaration decision-making process because federal disaster assistance cannot duplicate payments from private insurers. The same restrictions that were previously outlined for obtaining and maintaining insurance in previously damaged structures for Public Assistance benefits are in place for Individual Assistance with

some exceptions that are relevant to the dissertation study area. The restrictions for Individual Assistance benefits apply only to maintenance of flood insurance on homes that are located in a high risk federally designated Special Flood Hazard Area (SFHA) and also received prior Individual Assistance benefits for repair of flood damages. Homes that were damaged by non-flood causes are not under any mandatory insurance obligation and are not excluded from receiving Individual Assistance benefits if the same type of event or any other declaration eligible type of event were to reoccur (Liu 2008). Homeowners in flood disaster declared areas may be entitled to federal subsidies to cover the costs of flood insurance for up to 3 years. However, the National Flood Insurance Act of 1968 (NFIA) mandates that communities enact land use policies to mitigate against flood damage by implementing practices and standards that are required for inclusion in the National Flood Insurance Program (NFIP). The NFIA “prohibits federal officers from authorizing “financial assistance for acquisition or construction purposes” in an SFHA if the community does not participate in the NFIP. A flood victim in an SFHA is only eligible for federal disaster assistance if the community participates in the NFIP” (Liu 2008). This interpretation of Stafford Act legislation led emergency management officials in the 2008 disaster denied dissertation study area of Southern Illinois to conclude that, “We were turned down because we weren’t participating in the NFIP” (anonymous Illinois Emergency Management Agency official 2011). However, another emergency management official, in referencing a 2008 Illinois county that was granted a disaster declaration (DR-1771) and was not participating in the NFIP , indicated that “FEMA said we’d still be eligible for some types of assistance, even after we dropped out of the NFIP” (anonymous Illinois Emergency Management Agency official 2011). This confusion in the interpretation of specific portions of the Stafford Act will become critical to an understanding of the dynamics of disaster declarations and denials

in the following case study analysis. The Stafford Act assistance exclusion for individuals residing in SFHA's is, in fact, limited to "financial assistance for acquisition and construction purposes" in connection with a flood and is specifically defined as:

*any form of financial assistance which is intended in whole or in part for the acquisition, construction, reconstruction, repair, or improvement of any publicly or privately owned building or mobile home, and for any machinery, equipment, fixtures, and furnishings contained or to be contained therein, and shall include the purchase or subsidization of mortgages or mortgage loans...*

This exclusion does not prohibit a presidential disaster declaration for Individual Assistance grants from being issued for a variety of other needs that will be specified in subsequent sections of the literature review.

6. Average amount of individual assistance by State- There is no established threshold for recommending Individual Assistance grants, but averages for disaster declarations based on the number of homes with major damages or total destruction were defined in 1999 based on state population (See Table 3). The final determination of a disaster declaration is based on the described criteria but the Stafford Act stipulates that "No geographic area shall be precluded from receiving assistance under this Act solely by virtue of an arithmetic formula or sliding scale based on income or population" (Bazan 2005, FEMA 2007). As previously mentioned, the final determination of a disaster declaration or denial is under sole presidential authority. Disaster declarations may provide funding for Public Assistance and/or Individual Assistance as defined in the following sections.

Table 3: Average amount of assistance per disaster: July 1994 to July 1999

	<b>Small states (&lt; 2 million pop.)</b>	<b>Medium states (2-10 million pop.)</b>	<b>Large states (over 10 million pop.)</b>
Average Population (1990 census data)	1,000,057	4,713,548	15,522,791
Number of Disaster Housing Applications Approved	1,507	2,747	4,679
Number of Homes Estimated Major Damage/Destroyed	173	582	801
Dollar Amount of Housing Assistance	\$2.8 million	\$4.6 million	\$9.5 million
Number of Individual and Family Grant Applications Approved	495	1,377	2,071
Dollar Amount of Individual and Family Grant Assistance	1.1 million	2.9 million	4.6 million
Disaster Housing/IFG Combined Assistance	3.9 million	7.5 million	14.1 million

(Excerpted from Federal Register 1999)

#### **2.5.1.4 Stafford Act Funding Mechanisms: Public Assistance (PA)**

Major disaster declarations for Public Assistance provide allocations for 7 categories of grant awards which are designated based on gubernatorial request and presidential approval of FEMA’s recommendation. States, Localities, and certain non-profit organizations that provide essential community services, such as hospitals, are eligible for consideration of Public Assistance Grants. Specific awards require review and approval by FEMA officials. Small Project grants for approved categories in Public Assistance declarations (less than \$120,000, effective February 26, 2014 (Federal Register 2014)) are payable upon approval by FEMA. Large Project grants are paid upon completion, although interim payments can be distributed as needed.

All Public Assistance grants are subject to federal oversight and audit. It is important to note that rural Henderson County, Illinois; one of the presidentially declared counties (DR-1771) in the 2008 dissertation study area, was subject to a 2011 federal audit of approved Public Assistance funding for emergency levee repairs associated with the 2008 declaration. The Department of Homeland Security- Office of the Inspector General (OIG) determined that Henderson County officials failed to follow federal contract procurement protocols and, additionally, failed to distribute FEMA funds in a timely manner, due, in part, to inappropriate guidance by the Illinois Emergency Management Agency (IEMA) (Department of Homeland Security 2011). This led to an OIG recommendation to disallow over \$3,000,000 in previously approved funding for projects in rural Henderson County. County officials appealed the OIG recommendation on 2 separate occasions and each time, in 2012 and 2013, the FEMA Deputy Regional Administrator concurred with the OIG analysis and removed FEMA's obligation to award a portion of the questioned costs totaling over \$1,500,000. The fact that the FEMA Deputy Regional Administrator, Andrew Velasquez, who deobligated the FEMA funding, was the director in charge of the Illinois Emergency Management Agency, in 2008, is an important factor to remember as we move forward in the analysis of federal disaster relief and the presence or absence of political motives.

Public Assistance declarations authorize payment of not less than 75 percent of eligible costs for emergency protective measures and/or repair and replacement of eligible public and non-profit facilities. Payments are made to the declared state for distribution upon completion of the respective project. The respective categories that are eligible for Public Assistance grants are (FEMA 2013d):

### Category A: Debris Removal

Debris Removal is designated for the management and removal of disaster related items that affect public structures and roadways resulting in an immediate threat to public safety. Debris removal is not applicable to private property unless pre-approved by FEMA due to a public safety threat. Debris removal is not applicable to “wilderness areas”. This category of federal relief is also designated to assist in the economic recovery of the disaster affected community. Category A grant awards are also a component of Emergency declarations, as previously outlined.

### Category B: Emergency Protective Measures

Grants are awarded, as needed, for essential community services to protect public safety including emergency communications, public health services, sandbagging, search and rescue, police security, and temporary levees.

### Category C: Roads and Bridges

Disaster related damages to non-federal aid roads and adjacent earthwork affecting the structural integrity of roads and bridges is eligible for grant consideration. This includes upgrades, if necessary, to meet present codes and standards. Private roads and/or roads under the authority of the Federal Highway Administration are not eligible for public assistance.

### Category D: Water Control Facilities

Water control facilities such as public dams, levees, irrigation and pumping facilities are eligible if the affected state/locality can establish active maintenance of the structure and substantiate losses as disaster-related. It is important to remember that Stafford Act funding is not duplicative and flood control structures under the purview of the U.S. Army Corps of

Engineers (USACE) or the United States Department of Agriculture (USDA) are not eligible for permanent repair via Category D grants.

#### Category E: Buildings and Equipment

Public and non-profit buildings are eligible for repair and or replacement for disaster related damages. This includes building contents and furnishings. The grant is subject to the insurance provisions and restrictions previously described and awards are offset by the maximum amount of insurance that was available for uninsured buildings in floodplains that are awarded flood disaster declarations for an initial occurrence. This provision is designed to encourage self-insured jurisdictions to comply with the mitigation protocols that are mandated for participation in the National Flood Insurance Program (NFIP). As previously stated, public assistance will be “unavailable in any type of major disaster if the applicant has not complied with all insurance requirements imposed as conditions of previous disaster assistance” (Liu 2008).

#### Category F: Utilities

Public and private non-profit water treatment and distribution systems, power generation, telecommunication, and sewage treatment facilities are eligible for public assistance grants to repair and or replace disaster related damages to equipment and structures. Private utilities are not eligible for Category F grants but may acquire Small Business Administration loans in disaster declared areas, if compliant with SBA protocols. Additionally, Private for profit utilities may be eligible for federal mitigation grants to assist in preventing potential future disaster related damages.



## Category G: Parks, Recreational Facilities, and Other Items

Public playgrounds, parks, pools, cemeteries, and beaches are eligible for public assistance grants. Unimproved beaches and natural areas are not eligible for permanent repair or replacement grants.

### **2.5.1.5 Stafford Act Funding Mechanisms: Individual Assistance (IA)**

Disaster declarations for Individual Assistance are awarded by FEMA through the following programs:

Individual and Households Program (IHP) – This program provides federal relief to individuals and/or family units for housing and other needs upon the request of the governor of the disaster affected state and the approval of the president. Various components of the IHP program are awarded by the president upon review of FEMA’s recommendation based on the findings of the Regional Summary and Regional Analysis and Recommendation. The IHP program components include Housing Assistance (HA) and Other Needs Assistance (ONA). Awards are granted to individuals and households that can establish necessary disaster related expenses which they are unable to afford through insurance or other means. The IHP grant does not cover business losses, including farm businesses or vehicles and tools used for self-employment, outbuildings, landscaping, any pre disaster debt, or anything that is considered nonessential (Texas Health and Human Services Commission 2013). The Individual and Households Program authorizes a maximum grant award allowance which is \$32,400 per declared disaster per individual or household (Federal Register 2013c). The maximum IHP grant award is adjusted annually based on an increase in the Consumer Price Index for All Urban Consumers of 1.5 percent for the prior 12-month period. The average combined grant

award for IHP recipients in federal FY 2011 was \$4,074 and for FY 12, \$2,982 (Catalog of Federal Domestic Assistance 2014). The majority of federal assistance for individuals in declared disasters is provided by low interest loans from the Small Business Administration. The average grant award in 2012 represents less than 10 percent of the maximum grant award available for that year.

Housing Assistance (HA) under the IHP program includes benefits for temporary housing, repair and replacement of disaster damaged housing, and permanent housing construction, on rare occasions in approved insular areas outside the continental U.S or in remote areas. This assistance is designated for the owners and inhabitants of a primary residence. Vacation homes and secondary residences are not eligible for IHP grants. Temporary housing benefits are 100 percent funded by the federal government without a state/local cost share obligation. This benefit provides financial assistance for the rental of an alternative residence while repairs are being made to a disaster damaged home. Benefits are issued for 1, 2, or 3 month terms and are renewable for up to 18 months with substantiated disaster related need. FEMA provides a web based resource that identifies rental availability in disaster affected regions in collaboration with other federal agencies, including the U.S. Department of Housing and Urban Development (HUD), U.S. Department of Agriculture (USDA), and U.S. Veterans Administration (VA). During the Midwest Floods of 1993, the dissertation case study state of Illinois received 38,000 applications for emergency housing assistance (State of Illinois 2012). The magnitude of the federal response to the 1993 event provided state and local emergency management operatives in flood damaged areas with valuable experience in the process of accessing IHP grant funds to assist in the response to and recovery from disasters.

The IHP program provides grants for the uninsured repair of damaged homes up to the maximum grant award amount. Flood insurance is a prerequisite for repair grants in Special Flood hazard Areas (SFHA). Deductibles on homeowner's insurance policies are not covered by IHP grants. The grant is designed to the home to a functional capacity. Additional repairs are funded through the Small Business Administration loan program, although applying for an SBA loan is not a prerequisite for receiving grant assistance. Repair grants cover the following disaster damages (FEMA 2014b):

- Structural parts of a home (foundation, outside walls, roof);
- Windows, doors, floors, walls, ceilings, cabinetry;
- Septic or sewage system;
- Well or other water system;
- Heating, ventilating, and air conditioning system;
- Utilities (electrical, plumbing, and gas systems);
- Entrance and exit ways from the home, including privately owned access roads,
- Blocking, leveling and anchoring of a mobile home and reconnecting or resetting its sewer, water, electrical and fuel lines and tanks.

In remote and insular areas and on rare occasions, FEMA may award the maximum grant by means of financial or direct assistance for Semi-Permanent or Permanent Housing Construction.

#### Other Needs Assistance (ONA)

The Other Needs Assistance component of the IHP program provides for uninsured disaster related expenses and serious needs. The maximum IHP grant award can be distributed for ONA with certain noteworthy exceptions. Medical, dental, and funeral expenses are eligible for reimbursement without SBA loan application. However, ONA grants for personal property

repair and/or replacement, transportation, moving and storage expenses require applicants to apply for an SBA loan and grants are declined if applicants are SBA loan eligible. The average combined grant award for ONA recipients in federal FY 2011 was \$307 and for FY 12, \$346. (Catalog of Federal Domestic Assistance 2014a). Specified expenses that are eligible for ONA grant awards include (FEMA 2014b):

- Medical and dental expenses not covered by insurance or charitable entities
- Funeral costs
- Repair, cleaning, or replacement of:
  - Clothing
  - Household items (room furnishings, appliances)
  - Specialized tools or protective clothing and equipment
  - Necessary educational materials (computers, school books, supplies)
  - Clean-up items (wet/dry vacuum, air purifier, dehumidifier) Fuel for primary heat source
  - Repairing or replacing vehicles damaged by the disaster, or providing for public transportation or other transportation costs
  - Moving and storage expenses related to the disaster

In addition to the IHP program, Individual Assistance declarations provide benefits for individuals who are unemployed due to a presidential declared disaster and who are not eligible for state unemployment assistance or other forms of income protection. Small Business Administration disaster loans are the primary component of individual financial assistance in federally declared disasters. It is important to note that similar SBA loan eligibility parameters, maximums, and mechanisms for consideration apply to presidential and gubernatorial disaster declarations. The SBA does not provide any additional benefits for presidential disaster

declarations versus gubernatorial declarations. This is an important consideration in the 2008 Illinois dissertation study area as 11 of the 15 counties in Southern Illinois that were denied a presidential disaster declaration were authorized to receive SBA economic injury and physical property loss disaster loans if applicants met the eligibility criteria (See Appendix 1). The requirements for Disaster Unemployment Assistance and Small Business Administration loans have a precedent that was established prior to the passage of the Stafford Act and the details of this component of federal disaster relief legislation will be discussed in Section 2.3 of the literature review. Stafford Act Individual Assistance disaster declarations provide for loans up to \$500,000 for farmers, ranchers and aquaculture operators to cover production and property losses, excluding primary residence. This program is managed by the U.S. Department of Agriculture. Income tax filing extensions, legal services, and advisory assistance are also components of Individual Assistance benefits that may be available to disaster survivors.

The Crisis Counseling Assistance and Training Program (CCP) is an important component of Individual Assistance declarations that may become available to individuals when requested by the governor of the disaster affected state and final approval is granted by the president. It is a focus of concern in this dissertation as it has been well-established that the incidence of stress-related disease in the aftermath of disasters may be mitigated by appropriate behavioral health intervention (Ehrenreich and McQuaide 2001; Norris, Friedman, and Watson 2002; Disaster Mental Health Subcommittee 2010). The CCP is the primary mechanism for the federal government to authorize the delivery of immediate behavioral health services to disaster affected communities and individuals.

The FEMA implements the CCP under the authority of Section 416 of the Stafford Act which authorizes the FEMA to “fund mental health assistance and training activities in areas

which have been presidentially declared a disaster” (FEMA 2010b). The mission of the CCP is “... to assist individuals and communities in recovering from the challenging effects of natural and human-caused disasters through the provision of community-based outreach and psychoeducational services” (Substance Abuse and Mental Health Services Administration 2009). The CCP operates under the oversight of the Substance Abuse and Mental Health Services Administration (SAMHSA), Center for Mental Health Services (CMHS), Emergency Mental Health and Traumatic Stress Services Branch, and this program provides funding for a variety of behavioral health services including (Substance Abuse and Mental Health Services Administration 2009):

- Individual crisis counseling.
- Basic supportive or educational contact.
- Group crisis counseling.
- Public education.
- Community networking and support.
- Assessment, referral, and resource linkage.
- Development and distribution of educational materials.
- Media and public service announcements

There are two separate programs in the CCP. The Immediate Services Program (ISP) provides funding for urgent crisis counseling services immediately after a disaster event and this program may be authorized for two months after the date of the disaster declaration date with possible extensions for pending Regular Service Program (RSP) requests. The RSP typically

funds services up to nine months from the date of award notice (Department of Homeland Security 2008a). The Department of Homeland Security (2008a, 5) states that:

*The scope of the Crisis Counseling Program is immediate, short-term, incident-specific, intervention-style crisis counseling services and support for emotional recovery to individuals adversely affected by major disasters. The Crisis Counseling Program is intended to supplement state and local mental health resources, both public and private, for the specific incident-related need, and is not meant to replace or fund existing services. Individuals identified as having needs that fall outside the scope and duration of the Crisis Counseling Program are referred to other agencies that provide mental health treatment or other appropriate types of assistance on a permanent, long-term, and regular basis.*

FEMA's Disaster Financial Status Report (2013) for the time period from the initiation of the Stafford Act in 1989 thru 2012 indicates that the federal government has distributed \$167,376,280 for the ISP and \$465,435,994 for the RSP (FEMA 2013a) (see Table 4). This federal funding distribution included 334 presidential declarations for the ISP and 196 presidential disaster declarations for the RSP. Approximately 45 percent of all presidential disaster declarations for the Individual Assistance Program received funding for ISP services and approximately 27 percent of all presidential disaster declarations for the Individual Assistance Program received funding for RSP services. Data pertaining to denials of requests for CCP funding are not available.

Table 4: Disaster financial status report-Crisis Counseling Program 1989-2012

<b>Year</b>	<b>Immediate Services Program (Dollars)</b>	<b>Regular Services Program (Dollars)</b>
1989	1,874,578	7,159,814
1990	2,163,331	3,222,685
1991	393,551	1,276,819
1992	10,784,866	28,632,679
1993	5,956,653	12,393,280
1994	13,931,603	23,833,582
1995	2,567,064	5,994,511
1996	4,397,031	6,496,234
1997	3,186,775	7,037,365
1998	5,605,781	8,702,279
1999	4,190,206	8,340,789
2000	797,923	1,425,700
2001	31,945,455	134,338,548
2002	3,715,789	6,261,645
2003	3,390,258	5,342,331
2004	8,702,980	19,037,394
2005	33,205,194	105,028,219
2006	3,318,853	10,486,157
2007	2,105,053	5,275,962
2008	11,153,028	22,609,402
2009	2,084,945	4,712,118
2010	382,997	6,109,742
2011	8,148,665	24,980,546
2012	3,373,701	6,738,193
<b>Totals:</b>	<b>167,376,280</b>	<b>465,435,994</b>

(FEMA 2013a)

### 2.5.2 Supplemental Programs

Multiple federal agencies, state agencies, and Voluntary Organizations Active in Disasters (VOAD) supplement the federal disaster relief efforts that are delegated to FEMA under the provisions of the Stafford Act. VOAD’s have provided critical disaster relief services in the U.S. for more than a century. Voluntary organizations, such as the Salvation Army, have provided support for disaster-afflicted individuals and communities dating back to the Galveston hurricane of 1900 when volunteers from across the country served “to help clean, feed and



shelter the thousands of survivors, while also providing much needed spiritual and emotional support” (Salvation Army 2009). In 1900, the U.S. Congress granted the American Red Cross a federal charter to “carry on a system of national and international relief in time of peace and to apply the same in mitigating the sufferings caused by pestilence, famine, fire, floods, and other great national calamities” (American Red Cross 2010). These organizations continue to play an integral role in providing support to disaster affected individuals and communities. The American Red Cross, Operation Blessing, the United Methodist Church, and Southern Baptist Disaster Relief have provided essential community based post-disaster response and recovery services in the dissertation study area of Southern Illinois for multiple events ranging from the 2008 floods to the 2012 tornado disaster in Harrisburg, Illinois. In 2008, the Little Egypt Red Cross Service Center, representing Southern Illinois, provided 80 shelter registrations, 214 overnight stays, and \$177,161.18 in financial assistance and services to disaster survivors in the dissertation case study counties that were denied a presidential disaster declaration (PDD) (See Table 5). At Reed Lake Mobile Home Park, displaced residents received a daily stipend from the Little Egypt Network of the ARC for the time they were out of their homes to help cover the cost of food and other necessities that they had to buy while displaced after the 2008 flood (Gunnin 2008).

In 2011, 3 years after the PDD denial, Southern Illinois experienced severe storms and flooding that led to a “Major” PDD for Individual Assistance and Public Assistance (DR-1991). In the 2011 Southern Illinois event, the American Red Cross (ARC) provided shelter services for 1,485 overnight stays and “Red Cross Disaster Mental Health made phone calls & visits touching those needing reassurance” to 1,581 individuals (personal communication, Sandra Webster, Director ARC Little Egypt Service Center September 2011). Financial assistance

figures were not available for the 2011 event but the 7x increase in overnight shelter stays is indicative of the difference in community needs for volunteer services between the 2008 and 2011 storm and flood events in Southern Illinois.

The previously discussed Stafford Act eligibility guidelines for disaster declarations emphasize the role of voluntary organizations in the declaration decision-making process and federal assistance grants may be deemed unnecessary when local volunteer support provides adequate resources to support individual and community post-disaster needs (FEMA 2007). However, the demand for volunteer services is also representative of the severity of individual property loss and personal displacement from home settings. It is important to remember that a substantial demand for ARC services is indicative of an “overwhelming” need for disaster relief and provides support for the Stafford Act Individual Assistance eligibility criteria associated with the consideration of “concentration of damages and “trauma” in the disaster declaration determination process.

Table 5: Little Egypt American Red Cross services 2008 Southern Illinois

County	Committed Assistance \$	Adults	Child	Seniors	No Individ Served	No Families Served	Meals Served	Clean-up Kits	Comfort Kits
Alexander	4,730.29	7	0	0	7	3	75		10
Franklin	14,646.69	19	16	2	37	14	59	105	
Hardin	-	0	0	0	0	0	20		
Gallatin	18,606.45	21	8	4	33	15	4222	83	31
Jackson	4,566.05	4	0	2	6	4			
Johnson	2,963.29	5	4	1	10	3			7
Massac	3,026.29	4	0	1	5	3			
Perry	1,494.76	0	0	1	1	1			
Pope	947.76	0	0	1	1	1			
Pulaski	55,009.02	42	31	36	109	52	1674	129	54
Randolph	-	0	0	0	0	0			
Saline	32,795.09	33	20	7	60	25	140	37	4
Union	5,811.58	5	4	4	13	6		25	
Williamson	32,563.91	32	29	11	72	30	1273	128	57
TOTAL	177,161.18	172	112	70	354	157	7463	507	163

(Provided by Sandra Webster, Director ARC Little Egypt Service Center September 2011)

### **2.5.2.1 Supplemental Programs: Federal**

Federal disaster policy in the U.S. provides a mechanism for a number of supplemental federal grants to be distributed to communities that have received a PDD and/or have been burdened by the effects of a disaster event, independent of a Stafford Act presidential disaster declaration request.

#### **2.5.2.1.1 Supplemental Disaster Programs Authorized by a PDD**

Social Services Block Grant (SSBG) – This program is administered by the Department of Health and Human Services (HHS) under the authority of Title XX of the Social Security Act. It is designed to allow states to utilize population-based fund allotments to address a broad range of social service needs for low and moderate income individuals with an emphasis on children, the elderly, and the disabled. The grant guidance emphasizes initiatives that reduce dependency and encourage self-sufficiency amongst vulnerable individuals (Lynch 2012). FY 2012 obligations for the SSBG were \$1.7 billion (Catalog of Federal Domestic Assistance 2014m). More than 23 million individuals in the U.S. receive supportive social services through this program on an annual basis and approximately 27 percent of funding is directed to vulnerable and elderly adults (Dutta-Gupta, Pavetti, and Finch 2012). The dissertation case study state of Illinois received \$111,707,650 in SSBG funding in FY 2009, the year after the 2008 presidential disaster declared and denied flood events. This funding was utilized to provide social services to 1,418,988 individuals in Illinois and 52.6 percent of the recipients were vulnerable or elderly adults (Dutta-Gupta, Pavetti, and Finch 2012).

Although this program provides benefits ranging from counseling services to adult day care for any low or moderate income individual who meets program eligibility criteria, the

Department of Health and Human Services has established specific guidelines for disaster-related supplemental SSBG funding. In 2009, HHS awarded \$600 million in supplemental SSBG funding to 20 disaster affected states that were granted Major presidential disaster declarations for Individual Assistance between January and September of 2008. Illinois received \$30,502,439 for eligible Stafford Act Individual Assistance presidential disaster declarations under this supplemental appropriation (Lynch 2012). In March 2009, Illinois Governor Pat Quinn proclaimed, “With this funding, thousands of Illinoisans will get needed help to recover from the devastating storms and flooding of last year” (Illinois Government News Network 2009). Funds were designated to address the needs of flood affected individuals in all disaster declared counties in the dissertation case study area and included mental health and family counseling, youth services, employment services, and temporary housing. Funds were also designated for individual needs including clothing, furniture, food, medication, household items as well as home repairs and renovations. Unfortunately, residents of the 15 rural counties in Southern Illinois that were denied a presidential disaster declaration were not eligible for this funding. This disparity was not forgotten by emergency management operatives in the region who questioned “why the folks we represent aren’t entitled to any of the social service money from the feds” (personal communication, anonymous Illinois emergency manager 2011).

Community Development Block Grants (CDBG) –These formula grants may be distributed to presidential disaster declared counties to assist in long term recovery by expanding economic activity and rehabilitating residential and commercial buildings. At least 70 percent of grant funding must be utilized for activities that benefit low and moderate income individuals. Rural (non-metropolitan) counties are entitled to access CDBG State Program funds for disaster related needs in areas that have received an emergency or major presidential disaster declaration

(Housing Assistance Council 2006). It is important to note that the CDBG grant program is not, solely, activated by a disaster declaration and this program provides funding to states for eligible needs on an annual basis. In FY 2012, \$ 400,000,000 in CDBG disaster recovery specific funding was approved by Congress as a portion of the \$3,615,000,000 authorized for the entire CDBG program (U.S. Department of Housing and Urban Development 2012; Catalog of Federal Assistance 2014b; Catalog of Federal Assistance 2014c). This program is administered by the U.S. Department of Housing and Urban Development.

The Consolidated Security, Disaster Assistance, and Continuing Appropriations Act, 2009 (Pub. Law 110-329) appropriated \$6.5 billion through the Community Development Block Grant (CDBG) program for “necessary expenses related to disaster relief, long-term recovery, and restoration of infrastructure, housing, and economic revitalization in areas affected by hurricanes, floods, and other natural disasters occurring during 2008 for which the President declared a major disaster” (Illinois Department of Commerce and Economic Opportunity 2009). Presidential disaster declared (PDD) counties in the 2008 Illinois case study area (DR-1747, DR-1771) were the beneficiaries of CDBG grants, administered by the Illinois Department of Commerce and Economic Opportunity (See Table 6). Note: This legislation also included funding obligations for an October, 2008 PDD, issued to primarily urban counties in Illinois (DR-1800). PDD DR-1800 is not included in the dissertation case study analysis of rural Illinois declarations and denials due to the urban designation of the affected counties. Presidential disaster denied counties in the 2008 Illinois case study area were not eligible for this supplemental CDBG grant allocation.

However, the Illinois Department of Commerce and Economic Opportunity (DCEO) utilizes a portion of its CDBG allocation to fund the Community Development Assistance

Program (CDAP). The CDAP “assists Illinois communities by providing grants to local governments to help them in financing economic development projects, public facilities and housing rehabilitation” (Business Information Center 2010). In 2008, Illinois Governor Blagojevich awarded nearly \$1 million in grants to make necessary improvements to alleviate the potential of future flooding in residential areas of PDD denied Alexander and Union counties. Governor Blagojevich stated, “These grants ... will help alleviate future flooding problems in Southern Illinois” (Illinois Government News Network 2008a). In 2013, the CDAP allocated \$6.6 Million to Southern Illinois counties for public and residential infrastructure improvements including water, sewer and home rehabilitation projects. This included a \$450,000 grant for West Frankfort to construct a new sewage treatment plant that was damaged after the PDD denied 2008 flood (Fasol 2008a; Illinois Government News Network 2013).

Table 6: Illinois 2008 supplemental CDBG distribution for eligible PDD counties

State Program	Funding (\$)	Purpose
Small Business Stimulus	6,500,000	Max \$50,000 forgivable loan for business that commit to reopen within 12 months
Large Business Stimulus	8,500,000	Improvements to public infrastructure in support of a business that would create/ retain jobs in the community. Machinery, equipment
Business Assistance	5,000,000	Covers SBA loan interest, rental payments, lost rental income
Commercial Property Buyouts	13,838,249	Buyout programs in flood-prone areas
Affordable Rental Housing	18,950,911	Supports repairs and reconstruction of the affordable rental housing stock Note: \$5,000,000 dedicated to rural housing
Housing Activities Other than Affordable Rental Housing	21,338,250	Mortgage and down payment assistance buyouts, repair and reconstruction
Homeownership (Community Stabilization) Program	20,000,000	Community solutions to address severe hardship to communities, including foreclosure impacts and declines in economic conditions.
Short and Long Term Public Infrastructure Recovery	47,993,238	Support projects that FEMA cannot fund but are critical to recovery. i.e. water, sewer, drainage, levee systems
Planning Activities	16,919,125	Comprehensive regional planning to guide long term recovery and redevelopment.
Technical Assistance/Capacity Building	1,691,913	Project and construction management services Case management assistance to individuals

(adapted from Illinois Department of Commerce and Economic Opportunity 2009)

Community Disaster Loan Program – This program is administered by the U.S. Department of Homeland Security (DHS) and is activated by a presidential major or emergency disaster declaration. The loans are designated for jurisdictions that can establish a substantive disaster related loss of tax revenue and a need for financial assistance to perform normal government functions (FEMA 2005). Federal allocations for this program in FY 12 were \$5,014,387.

Disaster Assistance for Older Americans – This program is administered by the U.S. Department of Health and Human Services (DHHS) for the reimbursement of additional expenses associated with shelter, in-home assistance, outreach, counseling, and supportive services for the elderly in presidential disaster declared counties. These funds are distributed to State Units on Aging for determination of local need. The program is a component of the services legislated in the Older Americans Act of 1965 which was designed to “maximize the informal support provided to older Americans to enable them to remain in their homes and communities by providing transportation services, in-home services, and other support services” (Catalog of Federal Assistance 2014d). The benefits of this legislation are available to support independent living for individuals age 60 and over with an emphasis on those with the greatest economic needs, the greatest social needs, and those residing in rural areas. It is important to recognize that the vast resources that are provided under the provisions of the Older Americans Act are not, solely, dependent on a presidential disaster declaration. Approximately 20 percent of all individuals age 60 and over access some component of funding from the OAA ranging from vulnerable elder rights protection services, to family-caregiver support and nutritional supplements (National Health Policy Forum 2008). Federal nationwide formula grant obligations

for the OAA in FY 2012 were \$364,663,840. Since 1983, the Shawnee Alliance for Older Adults has provided a variety of services, partially subsidized by the Older American's Act, for the benefit of the low-income elderly in the dissertation case study area of Southern Illinois. As of 2011, this agency had 2,700 community-dwelling individuals over the age of 60 under "active care". These individuals received regular visitation services, including mental health assessments, thereby supporting the ability for the recipients to retain independent status in their own homes (Becky Pedroza, Shawnee Alliance for Older Adults, personal on-site communication, September 15, 2011).

Cora C. Brown Fund – This program is FEMA/DHS administered and supports unmet disaster needs for individuals in presidential disaster declared areas based on the recommendation of volunteer agencies. The FY 2012 allotment for this small grant initiative totaled \$7,088.

Economic Adjustment Assistance Program – Administered by the U.S. Department of Commerce/Economic Development Administration, this initiative provides grants to assist communities in presidential disaster declared areas by "accelerating economic recovery and implementing strategic actions to reduce the risk of economic damage and loss in commercial and industrial areas from future disasters" (FEMA 2005). This program is also available, independent of a presidential disaster declaration, "to address the needs of distressed communities experiencing adverse economic changes that may occur suddenly or over time, and generally result from industrial or corporate restructuring, new Federal laws or requirements, reduction in defense expenditures, depletion of natural resources, or natural disaster" (FEMA 2005). The average size of an Economic Adjustment grant in the most recent year of available data, FY 2011, was approximately \$550,000 (FEMA 2005). In 2012, the Economic



Development Administration expanded the Economic Adjustment Assistance Program, through the Disaster Relief Opportunity, which provided \$200 million in congressionally authorized funds for investments in regions experiencing “severe economic distress as a result of natural disasters that were declared as major Federal disasters between October 1, 2010 and September 30, 2011” (Economic Development Administration 2012). These funds were designated for projects that “foster economic growth and resiliency” by “mitigating the potential for future losses and adverse economic impacts for communities” (Economic Development Administration 2012). The City of Harrisburg, Illinois, which was denied a presidential disaster declaration in 2008 and in 2012, was awarded \$1,645,200 in Disaster Relief Opportunity funding to “construct improvements to the Harrisburg’s waste water treatment plant, support local industries and protect against future floods. Specifically, it will add to and improve the filtration system and install an additional pump in the storm water pumping station while leveraging an expected \$2 million in private investment” (Durbin 2013). Harrisburg was eligible for the grant award as it had received a major presidential disaster declaration for Individual and Public Assistance (DR-1991) as a result of April, 2011 storms and flooding.

Workforce Investment Act. Title I, National Emergency Grants- This program is administered by the Department of Labor and finances the creation of temporary jobs for disaster dislocated workers in presidential disaster declared areas. The Workforce Investment Act also provides temporary work grant funding for plant closures and mass layoffs affecting 50 or more workers and assistance to trade impacted workers and other individuals eligible under the Trade Adjustment Assistance (TAA) Reform Act (FEMA 2005) The U.S. Congress authorized \$203,000,000 in FY 2012.

Emergency Loans for Farming Operations- This program is administered by the U.S. Department of Agriculture's Farm Service Agency (FSA) to assist farmers in a county that is disaster declared by the President or designated by the Secretary of Agriculture as a primary disaster area. Loans, up to a \$500,000 maximum, may be utilized for the repair or restoration of essential property, the payment of disaster-related production costs, essential family living expenses, and non-real estate debt refinancing (United States Department of Agriculture Farm Services Agency 2012). This funding is administered independent of the Small Business Administration disaster loan program. USDA disaster declarations are not under presidential authority and are independently issued by the Secretary of Agriculture. All presidential disaster declared and denied counties in the 2008 Illinois case study area were eligible for Emergency Loans for Farming Operations as they were each declared by the Secretary of Agriculture as USDA disaster assistance eligible counties (Illinois Government News Network 2008). The program provided a direct loan total of \$31,436,000 to eligible applicants in FY 2012 (Catalog of Federal Assistance 2014e).

HOME Investment Partnerships (HOME) – This program is administered by the Department of Housing and Urban Development and may be activated by a presidential major or emergency disaster declaration to provide permanent housing for low-income homeowners in urban counties. The HOME program is the “largest Federal block grant to state and local governments designed exclusively to create affordable housing for low-income households” (U.S. Department of Housing and Urban Development 2014). The Illinois Housing Development Authority (2014) indicates that HOME funds are targeted towards the housing needs of seniors, people with disabilities, and people facing homelessness. Towns, smaller cities, and rural counties are eligible for HOME dollars, but they must obtain these funds through state

coordination as block grants are not authorized for smaller jurisdictions (Housing Assistance Council 2012). The participating jurisdiction may seek a waiver of required cost share requirements for HOME grants in areas that have received a presidential disaster declaration (U.S. Department of Housing and Urban Development 2014). FY 2012 federal formula grant obligations for this program were \$1,207,802,000 (Catalog of Federal Domestic Assistance 2014f). The HOME program is not, solely, activated by a presidential disaster declaration. In fact, several counties in Southern Illinois received forgivable non-payment loans thru the HOME program after the 2012 turndown of a request for a presidential disaster declaration associated with a tornado event (Fitzgerald 2012).

USDA Rural Development Disaster Assistance - The Rural Development Disaster Assistance program distributes grants and loans to qualified applicants in rural communities to provide “housing and shelter, public safety, health care and community facilities and business recovery assistance” (USDA 2011). Areas that have received a presidential disaster declaration, as authorized under the provisions of the Stafford Act, receive expedited loan approval processing. Low income participants in the USDA Single Family Housing Loan Borrowers program are eligible for a 180 day moratorium on loan payments and/or loan reamortization due to economic hardship in presidential disaster declared areas. Disaster displaced USDA Rental Assistance tenants in Rural Development-financed apartment complexes receive transfer of their rental subsidy and priority consideration for placement in available units if a presidential disaster declaration has been issued (USDA 2011a). The USDA Very Low-Income Housing Repair Loans and Grants program for low income elders (> 62 y.o.) and the USDA Rural Business Opportunity Grant (RBOG) program are representative of additional opportunities for rural communities and individuals to access federal funding with periodization for applicants in

presidential disaster declared areas. It is important to note that eligibility for the Very Low-Income Housing Repair Loans and Grants program is contingent on income, age, and type of structure. For example, manufactured homes must be attached to a permanent slab. This limits the availability of funding for some individuals in rural areas. The RBOG program is designed to assist in the creation of rural businesses and provide support for rural community economic development planning ( FY 2012 federal funding obligations for the USDA Very Low-Income Housing Repair Loans and Grants program were \$9,998,400 (Catalog of Federal Domestic Assistance 2014k). FY 2012 funding obligations for the Rural Business Opportunity Grant program were \$2,500,000 (Catalog of Federal Domestic Assistance 2014l).

Mental Health Disaster Assistance and Emergency Mental Health– This program is administered by the Department of Health and Human Services (DHHS)/Public Health Service (PHS), and the Substance Abuse and Mental Health Services Administration (SAMHSA). Project grant funding is distributed to areas that have received Stafford Act presidential disaster declarations through state agencies to provide supplemental emergency mental health services that have not been addressed by the Crisis Counseling Assistance and Training Program. This program also provides necessary training for disaster mental health counselors. FY 2012 federal discretionary project grant obligations totaled \$15,946,849 (Catalog of Federal Disaster Assistance 2014g). Illinois did not receive any funding through this program in FY 2008 and \$49,500 was distributed in FY 2009 (Hazelwood and Bazan 2010).

Food and Nutrition Service – Administered by the U.S. Department of Agriculture (USDA), this program “provides food for shelters and other mass feeding sites, distributes food packages directly to households in need in limited situations, and issue Disaster Supplemental Nutrition Assistance Program (D-SNAP) benefits” (United States Department of Agriculture

2014). Organizations including the American Red Cross and the Salvation Army access this program for necessary food resources in compliance with the recommendations of the National Response Framework (Department of Homeland Security 2008). Areas that have received Individual Assistance presidential disaster declarations are eligible for state coordinated D-SNAP benefits. Individuals who may not normally be eligible for the USDA Supplemental Nutritional Assistance program are considered for one month of D-SNAP food assistance benefits if disaster-related loss of income, property damages, or relocation expenses has created a documented need.

#### **2.5.2.1.2 Supplemental Disaster Programs: Independent of a PDD**

There are several federal programs that are authorized to provide support for disaster response and recovery activities completely independent of a Stafford Act PDD. These programs provide various forms of relief after disasters, but they are under the authority of federal departments and agencies that determine eligibility for federal support without any requirement for a PDD. These initiatives range from the U.S. Department of Transportation (DOT) repair of disaster damaged federal roads and bridges to the U.S. Army Corps of Engineers (USACE) specialized services for the repair of USACE Levee Safety Program structures.

Some noteworthy examples of federal non-Stafford Act disaster related recovery programs include the:

Emergency Food and Shelter National Board Program (EFSP) - This program is administered by the Department of Homeland Security under the authority of the McKinney-Vento Homeless Assistance Act of 1987 (PL 100-77). The EFSP supports the National Preparedness Goal (Department of Homeland Security 2011a) by providing economic assistance

to the homeless and those at risk of eviction for food, shelter, and related expenses. Although the program does not require a presidential disaster declaration, the intent of this initiative is to lessen the impact of a disaster and mitigate the burden associated with recovery efforts for these at-risk populations. FY 2012 federal project grant obligations for eligible jurisdictions totaled \$120,000,000 (Catalog of Federal Disaster Assistance 2014i).

Supplemental Revenue Assistance Payments (SURE) Program – This program is administered by the U.S. Department of Agriculture’s Farm Service Agency and is activated by an agricultural disaster declaration issued by the Secretary of Agriculture. It provides up to \$100,000 to offset eligible crop losses due to natural disasters. This program has special inclusionary provisions for beginning farmers, limited resource farmers, and “socially disadvantaged” farmers who have been subject to hardship due to race or ethnicity. Federal FY 2012 obligations for SURE totaled \$561,492,233 (Catalog of Federal Domestic Assistance 2014j).

The SURE program is one component of an extensive system of federal crop assistance that is available for farmers and ranchers affected by natural disasters who meet eligibility requirements due to adverse weather and/or a Secretary of Agriculture disaster declaration. Congressional legislation provides disaster related financial loss reimbursement through several loan and grant sources including the federally subsidized crop insurance program, the noninsured crop disaster assistance programs (NAP), the TAP - Tree Assistance Program, the ELAP - Emergency Assistance for Livestock, Honeybees, and Farm-Raised Fish Program , the LFP - Livestock Forage Disaster Program, the ECP - Emergency Conservation Program, and the Economic Injury Loan Program(USDA 2014). These initiatives provide fiscal relief for disaster related losses to farmers and ranchers due to crop or livestock loss and for physical losses to real

estate, machinery, and equipment. To reiterate, this program is not dependent on a presidential disaster declaration under the terms of the Stafford Act. Each of the 15 flood-damaged Southern Illinois counties in the dissertation study area that were denied a presidential disaster declaration were declared eligible for crop assistance under the provisions of the Secretary of Agriculture's 2008 agriculture disaster declaration (FSA 2011). Additionally, small "nursery" growers in each of the denied counties were eligible, until September 24, 2008, for a low-interest SBA Economic Injury Disaster Loan resulting from a 2007 Secretary of Agriculture drought disaster declaration (U.S. Small Business Administration 2007).

Emergency Management Performance Grants – This formula grant program is administered by the U.S. Department of Homeland Security and distributes funds to states based on a fixed percentage per state (0.75% of available funds per state) and a supplement based on state population. EMPG grant funds are distributed by states to localities based on county population and eligible need as determined by the state. Grant funds are designated to enhance and sustain all-hazards emergency management capabilities in the grant recipient state (U.S. Department of Homeland Security 2008).

#### **2.5.2.1.3 Supplemental Programs: Not Disaster Specific**

Federal funding is also available to states and localities for a variety of initiatives based on socioeconomic determinants. Although these grants and/or loans do not have a disaster specific authorization mechanism, they are designed to fund services that may benefit the recovery of disaster stricken communities. In many cases, these programs provide services for home repair and economic stimulus that may preclude access to PDD dependent supplemental if it is determined that the PDD affiliated grant would duplicate funding that is already available.

Some examples of applicable grant and/or loan programs that are relevant to the Cast Study area of Illinois are:

Delta Regional Authority (DRA) - In 2000, the U.S. Congress established the DRA as a federal-state partnership designated to enhance development in the economically impoverished Mississippi River Delta region. This region includes 13 of the 15 Southern Illinois counties in the 2008 dissertation case study that were PDD denied. “Predominantly rural, the Mississippi River Delta region has the highest concentration of disadvantaged populations in the country. It faces profound concerns related to health, out-migration, and persistent poverty. Education and income levels are well below the U.S. average, and are lower than other rural areas” (Delta Regional Authority 2013). In 2009, the Illinois Department of Commerce and Economic Activity (2009a) indicated that Illinois DRA counties would receive priority funding consideration for eligible state projects including: regional broadband proliferation; tourism industry development; energy independence; workforce development and job training; critical public infrastructure investments; business development and entrepreneurship; poverty reduction; and health care access and affordability. The 2008 Illinois DRA allocation was \$662,800 and between 2002 and 2008 Illinois received over \$5.4 million in DRA funds for 77 projects which was used to leverage an additional \$43,510,551 in federal grants (See Table 7) (Illinois Department of Commerce and Economic Activity 2009a). This is not a presidential disaster declaration affiliated program.

Community Services Block Grant (CSBG) – This federal program is state administered under the supervision of the U.S. Department of Health and Human Services. The CSBG program provides funds to alleviate the causes and conditions of poverty in communities and to empower low-income families to become self-sufficient (National Association for State



Community Services Programs 2014). Illinois has established partnerships with 6,808 private, nonprofit, and governmental entities, to offer services and programs addressing education, employment, housing, health, nutrition, personal finances, energy assistance, and community development (Illinois Association of Community Action Associations 2009). The 2008 PDD denied region of Southern Illinois received \$9,785,944 in private, local, state, and federal funding to support CSBG initiatives through community agencies including the: Crosswalk Community Action Agency, Shawnee Development Council Inc. , Wabash Area Development Inc. , and the Western Egyptian Economic Opportunity Council.

Table 7: 2002-2008 DRA related funding in Illinois

<b>Type of Project</b>	<b># of Projects</b>	<b>DRA Funds \$</b>	<b>Other Funds \$</b>	<b>Total \$</b>
Basic Public Infrastructure Grants	25	1,499,795	20,814,450	22,314,245
Business Development	15	993,738	15,465,870	16,459,608
Job Training/Employment	7	361,521	436,790	798,311
Other	13	869,455	1,648,732	2,518,187
Transportation Infrastructure	17	1,688,870	5,144,709	6,833,579
Totals	77	5,413,379	43,510,551	48,923,93

(Illinois Department of Commerce and Economic Activity 2009a)

American Recovery and Reinvestment Act (ARRA) – This legislation was enacted to stimulate the post-recession sagging economy and authorized the distribution of block grant funding to states based on population. Allocation formulas for state distribution of “stimulus funding” to counties in Illinois are based on population, urban/rural status and low-moderate

income need based determinants. These funds have been utilized to support previously described programs including Very Low to Moderate Income Housing Loans, Emergency Food Assistance, and the SURE program. ARRA allocations in Southern Illinois have supported infrastructure projects including highway and public land improvements (See Table 8). Disaster related projects that were approved in 2009 for the 2008 PDD denied counties include \$19 million for flood damaged Rend Lake campground and reservoir improvements, “\$21.8 million for Carlyle Lake for operations and maintenance including dam safety, flood repair, increased recreational safety measures, dredging, backlog maintenance and to repair damaged roads around the lake, and \$11.4 million to Lake Shelbyville for maintenance backlog in recreation and environmental areas, to complete shoreline erosion repairs, replace flood damaged facilities, replace deteriorating administration and visitor center buildings with energy efficient structures and combat invasive plant species” (Culli 2009).

Table 8: ARRA stimulus funding in PDD denied Southern Illinois counties 2009-2012

County	Funding total \$ 2009-2012	Per Capita Funding \$	Illinois County Funding Rank- (102)
Alexander	14,132,873	1,722	12
Franklin	75,109,232	1,898	10
Gallatin	12,218,153	2,191	7
Jackson	75,040,572	1,243	23
Jefferson	30,633,133	789	59
Johnson	12,408,292	985	42
Marion	50,448,944	1,280	20
Massac	10,460,499	679	71
Perry	13,374,368	599	82
Pulaski	44,066,569	7,157	3
Randolph	21,150,767	633	77
Saline	69,312,736	2,780	5
Union	11,915,518	670	74
White	27,795,114	1,900	9
Williamson	65,791,966	991	40

(ProPublica 2014)

### **2.5.2.2 Supplemental Programs: State**

As previously mentioned, the Stafford Act and the affiliated federal grant and loan programs have established requirements for state and/or local comprehensive emergency plans, mitigation plans, insurance maintenance, distribution of obligated funds, and cost-sharing arrangements. However, states and localities are not under any federal mandate to provide additional disaster assistance to their respective residents. Several states have independent legislative mandates that authorize a variety of specific disaster assistance remedies for their inhabitants. Illinois programs for disaster relief include:

State Disaster Relief Fund - The fund can be used to assist local governments with post-disaster cleanup. In Illinois, the State Disaster Relief Fund may be accessed when the Governor declares the local government to be part of a disaster area and when cleanup is beyond the means of the local government. Priority is given to localities suffering the worst damage, particularly if the area does not qualify for federal disaster assistance. FY 2008 and FY 2009 distributions for this program were \$500,000 for each year (McCreight 2009).

Opportunity Illinois Disaster Recovery Loan Program – This is a low-interest loan program that assists residents and businesses recover from property damages in areas that have been declared a natural disaster area by the local, state or federal government. Illinois discounts the interest rate on approved loans enabling recipients to obtain below-market loan rates for up to 5 years (Illinois State Treasurer 2014). Individuals with insurance are eligible for loans, with interest-only payments for one year, pending insurance settlement. This program was available to the residents of all PDD denied counties in Southern Illinois after the 2008 flood (Heartland News 2008).

Illinois Emergency Repair Program – This 2013 program is administered by the Illinois Housing Development Authority (IHDA), a self-supporting entity created by the state legislature in 1967. The Emergency Repair Program provides low-income recipients with grants for emergency repairs to make their homes safe. Qualified homeowners in Southern Illinois were eligible for up to \$20,000 for home repairs in 2013 (Illinois Housing Development Authority 2013). This program operates independently from the USDA Rural Development Disaster Assistance program.

Illinois state agencies including the Illinois Emergency Management Agency, Illinois Department of Natural Resources, the Illinois State Police, the Illinois Department of Transportation, the Illinois Department of Central Management Service, the Illinois Department of Public Health, and the Illinois Department of Corrections were activated by each of the 2008 gubernatorial disaster declarations in the case study (Culli 2008). This multi-agency involvement is authorized by the state legislature and is consistent with the eligibility requirements of the Stafford Act regarding activation of a state's Comprehensive Emergency Management Plan. County specific disaster relief measures were also evident in Southern Illinois after the 2008 flood. PDD denied Franklin County approved a resolution to delay the real estate tax due date for disaster affected residents (Sandefur 2008).

This summary of volunteer, state, and federal disaster preparedness, response and recovery program initiatives provides a framework for the analysis of spatial equity in the distribution of resources that are designed to support the well-being of individuals and communities in the aftermath of disasters. Ed Thomas has aptly described this myriad of disaster relief programs and capacities as a “patchwork quilt” (Thomas et al. 2011). As we will see, the capacity of the “quilt” to provide adequate and equitable relief from the adverse effects of

disaster is ultimately dependent on the ability of individuals and communities to weave the fabric into a purposeful garment that can assist in the restoration of lost and damaged resources.

## **2.6 Prior Research**

### **2.6.1 The Politics of Disaster Declarations**

A historical lack of access to information regarding the presidential denial (turndown) of requests for disaster declarations led to varied findings and opinions regarding the role of political partisanship in federal disaster policy (Downton and Pielke 2001; Garrett and Sobel 2003; Cutter and Emrich 2005; Reeves 2009). Recent studies that assess both presidential disaster declarations and denials have acknowledged the need to consider additional political, social, and economic place-based characteristics in the analysis of the equitable distribution of relief aid under the Stafford Act (Sylves and Buzas 2007; Schmidlein, Finch, and Cutter 2008). Previous research suggests that the geographic distribution of federal disaster relief under the provisions of the Stafford Act has been inequitable with respect to the severity of events and consequent economic losses (Cutter and Emrich 2005; Schmidlein, Finch, and Cutter 2008). Such inequities have led to broad claims of political partisanship in the implementation of disaster relief policy and concerns regarding the effectiveness of federal intervention in disaster recovery. Several studies have investigated the role of political influence in presidential disaster declarations. Garrett and Sobel (2003) suggested that nearly half of all disaster relief is politically motivated, rather than determined by need, and concluded that states more politically important to the president have higher rates of disaster declaration. They utilized public choice theory to describe the actions of politicians in the disaster declaration process as dependent on personal self-interest and incentives and independent of the sole altruistic motive of serving the

public good. Garrett and Sobel (2003, 508) apply this concept to congressional committee oversight of FEMA and determine by disaster expenditure models that 44.5 percent of FEMA disaster payments are due to representation on FEMA oversight committees and that for each House member on an oversight subcommittee (which directly oversees disaster expenditures), states receive an average of \$31 million in excess disaster expenditures. However, the aforementioned study concluded that there was no evidence that states having a governor from the same party as the president led to a higher level of disaster relief or that the president used disaster declaration authority to harm legislators of an opposing political party. Cutter and Emrich (2005) conducted a detailed nationwide analysis and noted limited spatial or statistical correlation between disaster losses and disaster declarations along the West Coast, Gulf Coast and Florida, the eastern Great Plains, Appalachia and the Northeast. These authors concluded that the political nature of the disaster declaration process may contribute to the effectiveness of a state and county in securing this designation.

Additional research indicates that the level of disaster declaration is higher in reelection years than in non-reelection years (Downton and Pielke 2001; Garrett and Sobel 2003; Stehr 2006; Sylves and Buzas 2007; Husted and Nickerson 2013). Reeves (2009) contends that a sitting president can expect a 1.7 percent increase in votes in a statewide contest in return for a single presidential disaster declaration. Downton and Pielke (2001) reviewed disaster declarations as they relate to Stafford Act requirements pertaining to a state's capacity to respond adequately to a disaster event by considering per capita damages, total damage as a percent of state expenditure, and per capita damages as a percent of household income. The Downton and Pielke study indicated that a state's ability to pay was not a major consideration in presidential disaster declarations.

Cebula (2004) indicated that public dissatisfaction with government can lead to emotional responses in voting behavior. The failure of presidential support for a gubernatorial disaster declaration request can be reasonably assumed to have a negative emotional effect on the respective community. This concept of “negative voting” by a dissatisfied public has been presented as an explanation for mid-term congressional decline in a sitting president’s party (Kernell 1977). Quattrone and Tversky’s (1988) research revealed that respondents show greater sensitivity to losses than to gains and suggests that voter options in political referendums may be determined based on negative factors. Similarly, the “negativity effect”, as described by Lau (1985), promotes the concept of political behavior based on greater weight being given to negative information than positive information. It is evident that public expectations of supportive behavior from the president and FEMA, combined with the conflicting tendencies associated with rational and reasonable decision making, provide for complexities in the analysis of policy implementation under the provisions of the Stafford Act.

Four prior studies, including the first publication from this dissertation research (Salkowe and Chakraborty 2009), have provided additional insight into the presidential decision making process by considering the negative influence associated with a denial (turndowns) of a request for a disaster declaration. Sylves (1998) provided an analysis of presidential disaster declarations that included declarations and turndowns in coastal versus inland states. The study found that between January 1990 and June 1997 coastal states averaged more disaster declarations than inland states and received more disaster relief funding when data were controlled for population, land area, and population density. Sylves concluded that coastal states do not receive a disproportionate percentage of primary flood declarations although they do experience a higher turndown rate than inland states. Sylves and Buzas (2007) provided an analysis of disaster

declarations and turndowns from 1953-2003 which included a consideration of the type of disaster event and found that a state's success rate in acquiring disaster declarations was greater in presidential reelection years and that the odds of approval for a declaration request were greater among Democratic presidents and Republican governors. They determined that hurricanes and typhoons were the event most likely to positively impact the rate of approval. The authors did not find any significant association between the incidence of acquiring disaster declarations and gubernatorial/presidential party similarity. More recently, Schmidlein, Finch, and Cutter (2008) applied geographic weighted regression to determine the spatial similarity between major hazard events and presidential disaster declarations/denials and determined that spatial inequities exist in the distribution of disaster declarations that are indicative of the political nature of the decision making process.

Claims of "disaster gerrymandering" (Platt 1999), inefficiency, and inconsistency in the determination and aid distribution process for disaster declarations have been highlighted in prior research and media reports (Sylves and Waugh 1996; Gaul, Morgan, and Cohen 2006). Sylves (2008, 101) informs us that, "the broader authority to judge what is or is not a disaster under the Stafford Act has provided presidents since 1988 with more latitude to approve unusual or 'marginal' events as disasters or emergencies." Prior research has indicated that presidents sometimes approve disaster relief requests when damage in the state is "light" and recovery may be possible without federal assistance (Sylves and Waugh 1996; Miskel 2006). Miskel (2006, 134-135) concludes that "political discretion exercised by the president is likely to be evident when the president approves governor requests regarding low damage, marginal incidents that often involve relatively low federal payouts." Tarcey (2004, 1) reports that "in marginal cases, small, noncompetitive states receive less help because they are just not that important in terms of



an election”. The potential for disparity in the distribution of disaster declarations based on differential degrees of political influence across the various FEMA regions has been addressed in prior research (Stephens and Wikstrom 2007; Schmidtlein, Finch, and Cutter 2008). Schmidtlein, Finch, and Cutter (2008, 13) recommended that further research in this arena should incorporate measures of state political importance to identify if those political influences help to explain the differential spatial pattern of PDDs (presidential disaster declarations).

It is evident that prior analyses have provided disparate findings and opinions regarding the explanatory role of electoral votes (Downton and Pielke 2001, Reeves 2007, Sylves and Buzas 2007, Reeves 2011), gubernatorial and presidential party similarity (May 1985, Garrett and Sobel 2003), and congressional influence (Garrett and Sobel 2003; Sylves and Buzas 2007, Sobel, Coyne, and Leeson 2007), with respect to presidential disaster declarations. There has been consistency in findings regarding a positive relationship between presidential reelection years and success in acquiring a disaster declaration by an affected state (Downton and Pielke 2001; Garrett and Sobel 2003; Stehr 2006, Sylves and Buzas 2007, Gasper 2013) and spatial disparities in the distribution of disaster declarations (Sylves 1998; Cutter and Emrich 2005; Schmidtlein, Finch, and Cutter 2008). The failure for prior studies to consider all presidential disaster declarations requests (declarations/denials) in conjunction with political and geographic variables has contributed to an incomplete understanding of the presidential decision-making process.

There is ample evidence of the problematic characteristics of fragmented research that have muddled the interpretation of political influence in disaster declarations. Tarcey (2004, 1) informs us that,

*In 1994, for example, Bill Clinton turned down a request by Illinois governor James Edgar for help with floods on Chicago's South Side that caused \$6.7 million in damage. The 1992 Clinton campaign had declared Illinois Republican territory. A year later, Clinton did declare a disaster in response to New Orleans floods that caused \$10 million in damage; Clinton's strategists considered Louisiana a pivotal state.*

Although this observation is correct, Tarcey fails to acknowledge that during President Clinton's first term in office, Illinois was granted 6 major presidential disaster declarations, from 1993 through 1996, despite the conclusive claim of partisanship based on "Republican territory" and Louisiana was denied a gubernatorial request for disaster declaration despite the assumption that "Clinton's strategists considered Louisiana a pivotal state." This type of selective reasoning is prevalent in prior research. Studies utilizing both declarations and denials have failed to control for pertinent political and geographic variables that have been applied in previous analyses which were limited, solely, to an examination of presidential disaster declarations. Studies that have examined geographic inequities failed to adjust the classification of major hazard/disaster events to be concurrent with requests for federal relief under the provisions of the Stafford Act. Prior published research that has utilized control variables to assess the relationship between presidential disaster declarations and insured losses have inadequately addressed the fact that presidential disaster declarations are predicated on a lack of insurance and a turndown will be issued if it is determined that federal assistance under the provisions of the Stafford Act would duplicate existing insured benefits. Published studies that utilize the SHELDUS database (HVRI 2014) (Schmidtlein, Finch and Cutter 2008) are problematic as they do not adjust for agriculture

crop disasters which are not under presidential authority. Studies employing the Property Claim Services (2014) database (Reeves 2011) have not acknowledged that this source does not include flood insurance damages or damages incurred by self-insured local and state governments. The preliminary published findings from the following dissertation research (Salkowe and Chakraborty 2009) have attempted to address these concerns in the analysis of all presidential disaster declarations and turndowns from the initiation of the Stafford Act in 1989 -2005. The initial findings, as referenced by the Congressional Research Service (McCarthy 2010), indicate that:

*There was no statistical evidence to suggest that gubernatorial and presidential party similarity, U.S. House of Representatives and presidential party similarity, FEMA congressional oversight committee membership, electoral votes, or FEMA regional office location influenced success in securing emergency or major disaster declarations.*

## **2.6.2 Recovery from Disasters**

Analyzing the recovery from disasters provides a means for evaluating the consequences of potential inequities in the implementation of presidential disaster declarations under the Stafford Act. The early focus on disaster recovery in the academic literature dealt primarily with reconstruction and restoration of physical structures that were damaged during disaster events (Haas, Kates and Bowden 1977; Alexander 1981; Smith and Wenger 2007). A growing awareness of the uneven recovery that was evident in disaster stricken communities led to assessments of the social, economic, and health related aspects of disasters and a greater understanding of the complexities associated with the recovery process (White 1945; Norris,

Friedman, and Watson 2002; Cutter, Boruff and Shirley 2003; Nakagawa and Shaw 2004; Steury, Spencer and Parkinson 2004; Wisner et al. 2004; Pais and Elliott 2008). The relationship between the social stressors that are inherent in disaster scenarios and varied aspects of physical and emotional well-being has been well established as an integral component of disaster recovery analyses (Madakasira and O'Brien 1987; Lutgendorf et al. 1995; Smith and Freedy 2000; Norris, Friedman, and Watson 2002; Reacher et al. 2004; Bland et al. 2005; Burton et al. 2009). Valuable insight has been gained from the examination of the influences of varied types and scales of disasters on the long term psychosocial recovery of individuals and communities and the National Disaster Recovery Framework, released by FEMA in September 2011, has acknowledged that, “a successful recovery is about the ability of individuals and families to rebound from their losses in a manner that sustains their physical, emotional, social and economic well-being (Department of Homeland Security 2011b, 2).

The effects of stress on the elderly (>60) and extreme elderly (>80) have led to alternate conclusions regarding the well-being of this segment of the population after disasters (Kilijanek and Drabek 1979; Krause 1987; Ticehurst et al. 1996; Cook 2001; Creamer and Parslow 2008). The negative psychological effects of community destruction and individual loss in the elderly population have been highlighted in prior research (Phifer and Norris 1989). Additionally, Kristenson (2004) and McEwen (2008) suggest a cycle of negative outcomes, loss of coping ability, and chronic stress secondary to psychobiological mechanisms associated with the challenges of the socioeconomically impaired.

It has also become evident that the effects of disasters extend well beyond the primary victims of disaster-related losses as prior studies reveal that the adverse consequences of exposure to disastrous events takes a toll on the entire community (Dixon 1991; Duckworth

1991; Burkle 1996). Bolin (1985) described two categories of disaster victims: primary victims who directly experience physical, material, or personal losses and secondary victims who live in the affected area but sustain no personal injuries or damages. Prior research reveals that community-level loss of resources is associated with a decreased ability for individual recovery in disaster affected areas (Green et al. 1990). This is an important consideration in evaluating the indirect effects of the disaster related loss of social, psychological, and material resources on an individual and community level.

## **2.7 Health, Well-being, and the Mechanism for Post Disaster Stress-Related Illness**

*We all know that life can be difficult, but evolution has provided mechanisms to protect the body during crises. Such protection requires many different changes in many different parts of the body, and, as usual, hormones coordinate these widespread and diverse efforts. When the crisis is past, ebbing hormone levels signal the all-clear, and the body resumes other interests such as eating, body repair, and reproduction. But if the crisis persists, or if the individual's perception of crisis persists, hormones continue to drive the body to take desperate measures, sometimes with disastrous consequences (Sapolsky, 2002).*

There is well-established evidence that a variety of social and environmental “toxic” extremes can produce physiological responses that interfere with the capacity for normal behavior and contribute to the persistence or aggravation of existing stress-related illness (Nelson 2005; Barr 2008; Shonkoff, Boyce, and McEwen 2009). Anxiety disorders and

depression are common stress-related maladies in industrialized countries with a reported lifetime prevalence rate of 26.4 percent in the United States (The WHO World Mental Health Survey Consortium 2004). Approximately 50 percent of individuals who are diagnosed with depression are also diagnosed with an anxiety disorder and the comorbidity of anxiety and depression has been well-established in the elderly demographic (Lenze 2003; Anxiety and Depression Association of America 2014). The incidence of depression is much higher in individuals at the lower end of the socioeconomic scale (McEwen, 2000). The persistence of stress-related aberrant behaviors and physiological disorders after disasters has been observed in vulnerable population subsets (Boman 1979; Norris, Friedman, and Watson 2002; Burton et al. 2009; Holman and Silver 2011). Approximately 8 percent of men and 20 percent of women who have experienced a major psychological trauma, such as a natural disaster, will develop post-traumatic stress disorder (PTSD) (National Center for PTSD 2013). A recent study of 2004 tsunami survivors found that a cohort of community-dwelling elders who remained in the same locale after the disaster were significantly more likely to meet criteria for PTSD than their younger counterparts (Viswanath et al. 2012).

What has become evident in the fields of cognitive neuroscience and behavioral endocrinology is that there are biological mechanisms that influence and control certain aspects of human behavior and contribute to aberrant responses to stress and result in comorbid psychological and physiological disorders. Chronic pain conditions, ischemic vascular disorders, gastrointestinal and cognitive disorders can be exacerbated by anxiety and/or depression (Sareen et al; 2003, Roy-Byrne 2008; Anxiety and Depression Association of America 2014). The inherited response to a variety of stressful stimuli affects human behavior in the form of the classic “fight or flight response”. This is a physiological neuroendocrine reaction

to environmental and social influence. It is exhibited in the nuanced involuntary behavior of “performance anxiety” and ranges from the simple act of blushing to the perspiration, rapidity of heart rate, and sense of fear and avoidance when exposed to threatening scenarios. The range of physiological reactions is certainly evident in disaster environments where individual and communal reactions may result in alterations and departures from rational thought. The biological imperative of “fight or flight” is an inherited characteristic shared by all vertebrate species including humans. It is an innate involuntary response to a potential threatening stimulus.

Ehrlich and Ornstein (1989) hypothesize that humans are affected by a lack of natural selection for response to slowly developing threats. Our physiological response capacity to threat is based on the “fight or flight” response to immediate challenge. We are not selectively conditioned to adequately tolerate prolonged stress. Lumsden (1983) indicates that culturally complex societies with high degrees of social stratification are behaviorally constrained and less capable of adaptive cognitive development than less developed cultures. The inheritance of a physiological stress response from our vertebrate ancestors was designed to deal with the short term immediacy of physical danger. The repetitive prolonged insidious stressors associated with poverty, poor health, lack of access to social support, and limited education can exceed the inherited capacity of this physiological mechanism and result in pathological behavioral effects that are exacerbated in the presence of a natural or technological disaster.

Psychological stress is a well-recognized correlate of exposure to a variety of hazardous environments (Bland et al. 2005; Reacher et al. 2004). Prolonged psychological stress has been associated with physiological changes in endocrine function resulting in memory deficit and structural change in the brain’s limbic system and the function of the hypothalamic-pituitary axis (Vanitallie, 2002. Dawood, 2004). The evidence strongly suggests a positive correlation between

exposure to negative social environments and the potential for biochemical induced cognitive dysfunction. This conclusion is based on a physiologic mechanism for irrational behavior during prolonged stress scenarios. The physiological response to stress is varied and our particular concern is directed to the role and effects of the hypothalamus, pituitary, and adrenal glands in the innate response to the challenge of a perceived or actual stressor. The adrenal glands control the release of several hormones including dehydroepiandrosterone (DHEA), epinephrine, and cortisol. The innate response of “fight or flight” is a result of the body’s release of adrenal hormones in response to stimulus from the hypothalamus and pituitary gland in the brain when triggered by a stressful event. Epinephrine and cortisol are secreted with a resultant increase in heart rate, blood pressure and the mobilization of stored energy. A concomitant increased sense of awareness and altered inflammatory response is experienced in the normal response to acute stress. This allows the body to deal with the immediate threat before it. However, extreme prolonged exposure to stress events may have a deleterious effect on the body due to continued demand for secretion of adrenal hormones and the effects of those same hormones on normal physiology. Excessive release of adrenal hormones is associated with cognitive mental dysfunction and a host of metabolic abnormalities including diabetes, thyroid disorders, and gastrointestinal distress. McEwen (2000) describes these chemical imbalances as an “allostatic load” that can accelerate a variety of disease processes.

The initial response to acute or intermittent stress results in an increased release of cortisol. Prolonged stress leads to the detrimental effects of excess cortisol secretion. In severe cases, such as those seen in post-traumatic stress disorder, the hypothalamic-pituitary stimulus mechanism exhausts adrenal capacity and results in a decrease in cortisol level and an increase in the pituitary secretion of adrenocorticotropic (ACTH) hormone which has been correlated with



exacerbation of auto-immune disease and increased fear avoidance response in susceptible individuals (Kenyon, 2000). Kenyon has indicated that it has been suspected for some time that cortisol released from the adrenal cortex during stress has adverse effects on cognitive functions such as learning and memory (2000). Selye's (1946) work on General Adaptation Syndrome supported a neuroendocrine role for dysfunctional behavior in response to stress. Further analysis by Kristenson (2004) and McEwen (2008) suggest a cycle of negative outcomes, loss of coping ability, and chronic stress secondary to psychobiological mechanisms associated with the challenges of the socioeconomically impaired. The aberrant response to prolonged or extreme stressful stimuli leads to abnormalities in circulating levels of biochemical inflammatory mediators and contributes to the development of anxiety and depressive disorders and a variety of comorbid somatic, gastrointestinal, immunological, vascular, and cognitive maladies (Grachev, Fredrickson, and Apkarian. 2001; Davidson et al. 2004; O'Keefe et al. 2004; Reacher et al. 2004; Foa, Stein, and McFarlane 2006).

An estimated 25 percent of individuals, 65 and older, are estimated to suffer from mental health disorders and the prevalence of depressive symptoms is greater amongst low income, extreme elderly (>75) and rural populations (Gamm, Stone and Pittman 2003; Pleis, Lucas and Ward 2009). However, concerns regarding anonymity and the social stigma that is associated with mental illness in rural areas may prevent elderly individuals from acknowledging the need for formal behavioral health services for anxiety or depressive disorders (Fox et al. 1999; Letvak 2001). These findings support the dissertation emphasis on the physiological and psychological outcomes of disaster affected individuals in socioeconomically and culturally marginalized rural communities that may have differential access to federal resources. The subjective and objective determinants of the Stafford Act related to the demographics of age, income, health status,

insurance status, and prior exposure to damages indicate that this policy was formulated with an awareness of the uneven recovery outcomes that may be experienced by individuals who are already burdened by varied socioeconomic stressors. This dissertation considers the presence of multiple stress-related physiological disorders that have well-established comorbid presentations with anxiety and depression as a marker of equitable recovery in presidential disaster declared and denied areas of Illinois after the 2008 flood events.

## **CHAPTER 3:**

### **CASE STUDY: 2008 ILLINOIS STORM AND FLOOD DISASTERS**

#### **3.1 Introduction**

In 2008, several rural counties in Illinois experienced three separate storm/flood disaster events that were each of sufficient magnitude to warrant a gubernatorial disaster declaration and a subsequent gubernatorial request for a presidential disaster declaration (PDD) for Stafford Act Public Assistance and/or Individual Assistance (See Figure 2). The PDD denied counties of Southern Illinois are the focus of this case study. This region is selected due to the socioeconomic disparities that exist compared to areas in Illinois that received disaster declarations in 2008 and the physical, cultural, and social characteristics that have contributed to local concerns regarding perceived inequities in the distribution of state and federal resources after disasters.

The case study area of rural southern Illinois is considered from a historical perspective to provide a foundational understanding of the factors that have contributed to the social, economic, and cultural characteristics of this region. The 2008 pre- and post-disaster setting in the study area is described to provide the reader with a thorough understanding of the disparate federal and state response efforts in counties that were granted gubernatorial disaster declarations and were subsequently declared or denied presidential disaster declarations under the provisions of the Stafford Act. This review will set the stage for determining if the noted

socio-demographic disparities contributed to inequities in the well-being of individuals and communities that had differential access to the benefits and provisions of the Stafford Act.

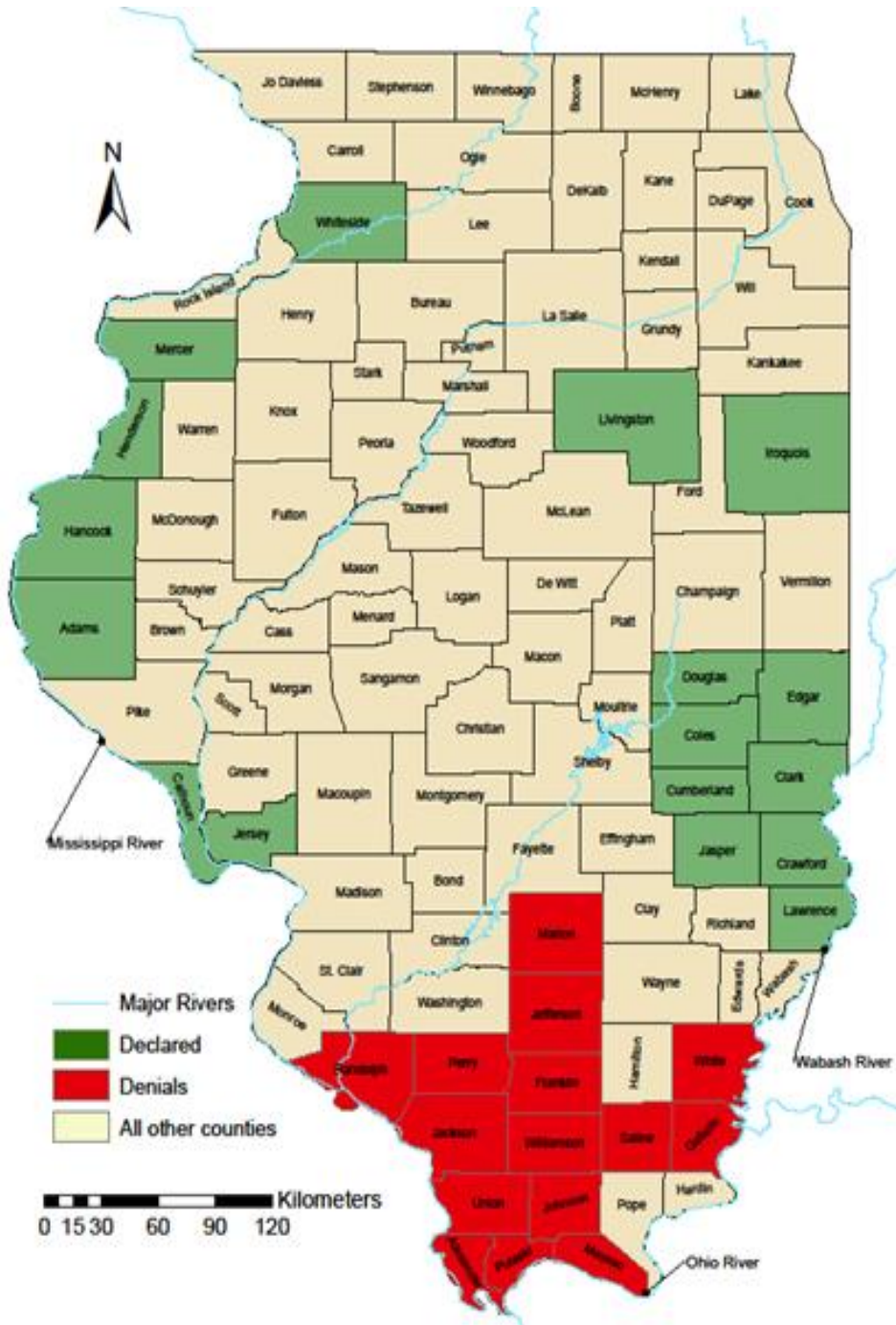


Figure 2: Case study area-2008 Illinois storm/flood disasters

### **3.2 Rural Disasters in Illinois-2008**

One of the presidential disaster declaration requests for Individual Assistance, which involved 15 rural counties in Southern Illinois that were affected by storms and flooding in March 2008, was initially denied by the president on April 28, 2008 and subsequently denied on appeal on August 20, 2008. The loss of individual and community resources associated with the denied counties was highlighted by Ryan Buckingham, Franklin County Emergency Management Agency director, who stated, “there are people in our region that were affected all the way to the point where they have lost their homes... at this point in time, they have very few options to begin to rebuild their lives” (Fasol 2008). Illinois Emergency Management Agency Director Andrew Velasquez III expressed his concern regarding the denial by stating, “It’s very disappointing that FEMA failed to recognize the devastating impact this flood had on so many lives in Southern Illinois” (McCoy 2008). The 15 denied counties in Southern Illinois had experienced approximately \$5,000,000 in FEMA estimated individual and household damages affecting 659 homes (See Appendix 1) (FEMA 2008c). The number of homes with major damage or destroyed status (228) was greater than, or consistent with, disasters in other areas of Illinois that had been granted PDD’s in 2007 (DR-1722, DR-1729) and 2008 (DR-1747). Regardless, the 2008 denial of the gubernatorial request for a Major disaster declaration for Individual and Public Assistance in Southern Illinois by the President of the U.S. was issued based on an insufficient “concentration of damages” for Individual Assistance (Personal communication, anonymous Illinois Emergency Management Official 2011).

In contrast, only one request involving rural areas that were affected by storms and flooding in June and July 2008 received an expedited Major presidential disaster declaration (DR-1771) on June 24, 2008 which was amended in July 2008 to include 15 counties in the case

study area for Individual Assistance and Public Assistance under the provisions of the Stafford Act. The 15 declared counties were awarded \$8,979,826 in housing assistance to cover temporary rental assistance, home repairs, and replacement, and \$1,044,316 in Other Needs Assistance to cover essential personal property losses, medical, dental, funeral, transportation or other serious disaster-related expenses not covered by insurance" (FEMA 2014c) (See Figure 2). These funds were distributed to 1,752 applicants. The U.S. Small Business Administration approved \$7,835,800 in disaster loans for 153 disaster assistance applicants in the disaster declared counties (FEMA 2014c). This included coverage for two non-rural counties that were excluded from the study area due to demographic inconsistencies.

Iroquois and Livingston counties in rural Illinois were affected by floods in January 2008 (see Figure 2) and granted a presidential disaster declaration (DR-1747) on March 3, 2008, for Individual Assistance, on appeal of an initial denial. A total of 917 applicants received \$3,951,573 in housing assistance to cover temporary rental assistance, home repairs, and replacement, and \$849,087 in Other Needs Assistance (FEMA 2014d). The U.S. Small Business Administration (SBA) approved \$13,592,800 in disaster loans for 240 applicants in Iroquois and Livingston Counties (Illinois Department of Commerce and Economic Opportunity 2009). The citizens of Iroquois and Livingston counties were eligible for Crisis Counseling Services through a \$33,800 grant to the Illinois Department of Human Services which was included as portion of the presidential disaster declaration for Individual Assistance. Illinois Governor Blagojevich acknowledged the value of the grant in stating, "Dealing with the aftermath of a natural disaster and losing personal belongings causes a lot of stress for people. It is important that crisis counseling is available as flood victims try to recover and get their lives back to normal" (Illinois Department of Health Services 2008).

As many as 13 of the 15 PDD denied counties in rural Southern Illinois were federally designated Delta Regional Authority counties in 2008. As previously described, portions of these counties have “the highest concentration of disadvantaged populations in the country” and face “profound concerns related to health, out-migration, and persistent poverty. Education and income levels are well below the U.S. average, and are lower than other rural areas” (Delta Regional Authority 2013). Table 9 supports these observations, as 14 of 15 Southern Illinois county in the case study area have higher rates of poverty, unemployment, and outmigration and 13 of 15 have lower rates of high school graduation than the Illinois average. Compounding these concerns is the significantly higher percentage ( $p < 0.01$ ) of adults self-reporting seven or more days of poor mental health per month in the PDD denied counties from 2007-2009 (18.6 percent) in comparison to the PDD declared counties (12.4 percent) and the control counties (14.6 percent) in the dissertation case study area (Illinois Department of Public Health 2013). In 2009, the year after the 2008 PDD denial in Southern Illinois, the Chicago-based Heartland Alliance for Human Needs and Human Rights, issued a telling report pertaining to escalating poverty in the region. The report revealed that: four Southern Illinois counties top the state's list of bankruptcies per 1,000 residents, 10 Southern Illinois counties are among the top 20 for teenage pregnancy in Illinois, 12 Southern Illinois counties place in the top 20 for highest percentage of students eligible for free or reduced lunches; and three Southern Illinois counties are among the top 10 worst high school graduation rates in the state (Testa 2009). Nicholette Dolin, community development specialist for the Illinois Coalition for Community Services, indicated that the dwindling number of employment opportunities, state budget cuts, and service eliminations contributed to the impacts of poverty in the region (Testa 2009).

Table 9: Socio-demographic profile - 2008 Southern Illinois PDD denied counties

Southern Illinois County	% Pop Change 2000-2007	% Unemployed 2008	% Poverty 2006-2010	High School Grad Rate 2006-2010	Race % White Non-hispanic
<i>Illinois</i>	3.5	6.4	12.2	87.0	63.7
Alexander	-11.8	9.8	20.1	76.0	60.5
Franklin	1.2	9.5	19.8	83.8	96.9
Gallatin	-6.5	8.3	18.0	77.7	97.1
Jackson	-1.3	5.8	28.5	89.5	76.0
Jefferson	0.3	6.4	17.1	83.7	87.4
Johnson	1.5	8.2	13.6	78.0	87.9
Marion	-5.0	8.5	16.5	84.1	92.4
Massac	-0.3	7.2	13.7	85.0	89.8
Perry	-2.2	9.8	14.0	81.5	87.1
Pulaski	-11.7	9.4	22.7	78.9	63.9
Randolph	-3.3	6.7	10.4	78.5	86.4
Saline	-2.4	8.3	18.4	82.1	92.4
Union	-0.2	8.8	21.1	79.1	92.4
White	-4.6	6.5	14.8	84.5	97.6
Williamson	5.3	7.1	16.7	88.2	91.5

(U.S. Census Bureau 2009a; U.S. Census Bureau 2011; U.S. Census Bureau 2011a; U.S. Census Bureau 2011b; Bureau of Labor Statistics 2014)

In 2008, PDD denied Saline County, Illinois, the capital city of Harrisburg, reported total business and personal property damage of \$16.8 million and 44 businesses affected by flooding (Fodor 2009). Flooding in the city was being called the worst in 71 years (City of Harrisburg Illinois 2011). Harrisburg, Illinois, had declined participation in the federal National Flood Insurance Program prior to the 2008 disaster and allowed development in the floodplain (Office of Sustainability 2009). This prevented homeowners and businesses from obtaining federally subsidized flood insurance to offset the risk of disaster related damages. Alan Niness, Saline County Emergency Services Disaster Agency Director, addressed the lack of flood insurance protection by stating, “Every flood is different and this one was the result of record



rainfall...The challenge now for this council is to make the move that will best protect its citizens and businesses. I'm not going to point fingers and comment on what should have been done. It's not my place to say if a mistake was made or not" (Homan 2008). Saline County Public Safety Commissioner Bill Rice Stated, "Knowing what we know now, yeah, one of the former city councils probably should have participated in the insurance program"(Homan 2008).

The 2008 denial of a presidential disaster declaration remains a point of concern in this region, where the local contention is that “They don’t care as much about Southern Illinois” (personal communication anonymous Illinois Emergency Management officials 2011). In 2014, six years after the PDD denial of 2008, the City of Harrisburg website still highlights the “Flood of 2008” and reminds us that, “The Federal Emergency Management Agency denied flood recovery grants and loans to Illinois” (City of Harrisburg 2014). The fact that SBA disaster loans, identical to FEMA SBA disaster loans, were available for eligible businesses and residents after the 2008 event is not addressed on the website, nor is the failure for the city to participate in the NFIP. A PDD denial in 2012 after a tornado event in Harrisburg, Illinois, led to similar concerns: “Illinois sought federal disaster aid for the Harrisburg tornado but the aid request was denied. The subsequent appeal of that decision was rejected. Specialized assistance from federal agencies will not be forthcoming” (Rozdilsky 2012). This perspective was, in part, inconsistent with the coordinated state-federal response to the 2102 tornado event. Reprioritized existing state and federal programs and block-grants totaling \$13 million were designated to support recovery needs in the impacted communities, independent of the need for a Stafford Act presidential disaster declaration. Support from federal agencies including the USDA, HUD, U.S. Department of Transportation and the U.S. General Services Administration was provided to the Harrisburg community. In fact, FEMA’s *Non-Stafford Act Recovery Guide* (2013) uses the 2012 Harrisburg

tornado event as an example of an event that “supports unified recovery-focused coordination between local, Tribal, State, and Federal agencies, non-governmental organizations, and the private sector” (FEMA 2013f).

Local emergency management officials expressed concern that the long term recovery needs of the community were not adequately addressed after the 2008 or 2012 events and the well-being of the community was compromised by the lack of a presidential disaster declaration and the associated Stafford Act provisions for Individual Assistance (personal communication anonymous Illinois Emergency Management official 2013). One official, in reference to the ongoing post-disaster psychological concerns of people in his county indicated that, “rural areas are spread out and people’s needs don’t go away when the state and federal folk go home” (personal communication anonymous Illinois Emergency Management official 2013).

There is a complex social and cultural dynamic in this region of Illinois where community leaders sometimes describe the locals as “a stubborn Southern people” (personal communication anonymous official 2011) and suggest that the “Mason-Dixon Line took a loop around Southern Illinois” (personal communication anonymous official 2011). There is a stark dichotomy to the sentiment of the people who inhabit the region as the frustration with the failure for the federal government to issue a disaster declaration is countered by the notion that:

*Local folks don’t want Easterners or Californian FEMA reps or volunteers bothering them cause they feel like they look down on them. They’re comfortable with Southerners. Some of them would just as well not evacuate. They’d stand on a pile of their own rubble with a shotgun before they’d let some fed move them off their land.* (personal communication anonymous official 2011)

The recovery of rural communities that are denied presidential requests for federal disaster relief is often dependent on the spirit of volunteerism, mutuality, and neighborliness that has been a hallmark of the rural social ethic in the U.S. for over 200 years (Danbom 2006). In a recent reference to the recurrent disasters that have affected rural southern Illinois, Mayor Eric Gregg of Harrisburg stated, “We have faith, a strong work ethic and we are really resilient. We are good people, we care about others” (Kane 2013). This strong network of faith-based community support in Southern Illinois may have alleviated some of the emotional stress associated with the loss of personal and community resources in 2008, despite the denial of the request for a presidential disaster declaration. In reference to the 2008 event, church leaders in Southern Illinois indicated that “there were no requests for assistance to repair damaged homes that went unanswered. In fact, the bigger problem was getting people to ask for the help that was needed” (personal communication, anonymous 2011). The consideration of the social, cultural, and economic factors that have contributed to the perspectives of the residents of Southern Illinois will provide contextual understanding for the analysis of spatial equity in the distribution of federal disaster declarations and the post disaster health and well-being of the region after the 2008 storm/flood PDD denial.

### **3.3 Southern Illinois: A Historical Perspective**

The physical characteristics of Southern Illinois were etched into the landscape by the geologic forces of tectonic shift, subsidence, water intrusion, and glacial erosion over the course of 500 million years (Russell 2012). The salt springs that were the original namesake and industrial foundation of early 19<sup>th</sup> century Saline County, Illinois, were formed by the remains of

ancient seas that repetitively inundated the region. These saline waters interacted with the compressive forces of silt and sediment on decaying plant matter and created the high sulfur coal which has been the boon and bane of the region for the past century. Shifting of the tectonic plate along the New Madrid Fault led to subsidence and an extension of the Gulf of Mexico as far north as Southern Illinois, resulting in the northernmost present day Cypress swamps in the U.S. The New Madrid Fault remains an active seismic zone and hazard risk in Southern Illinois (Oskin 2014).

Glacial erosive forces shaped much of the Illinois land surface and created the flat fertile plains that form the foundation for the agricultural bounty that is a significant factor in the present day rural economy of the region. Glacial till and wind-blown loess formed the thick dark soils of the central portion of the state and provide the basis for Illinois ranking as the #2 state in the U.S. in soybean and corn production in 2011 (USDA 2011). Glacial melt scoured the land and created the major transport and shipping rivers that surround Southern Illinois and the bottomlands that are subject to recurrent flooding. However, the forces of recurrent glacial erosion did not extend, as often, into the southern part of Illinois and the deposition of nutrient rich glacial till was not as prevalent in this region (Russell 2012). Although the hilly landscape of Southern Illinois provides a uniquely scenic contrast to the topography of the central portion of the state, the thin acidic soils of this region are less productive than the fertile plains and crop yields for corn and soybeans in Southern Illinois are comparatively lower (USDA 2014). The sloping nature of the land and the soil type in parts of Southern Illinois contribute to present day problems with soil erosion (Qin and Flint 2008). In 1912, it was observed that Southern Illinois lands were, “the cheapest in price and the poorest in quality” (Smith 1912). However, portions of Southern Illinois do benefit from productive loess and alluvial soils. This was acknowledged as

far back as 1887 when a description of Saline County crop potential indicated that, “there is a good strong soil that occupies the greater portion of the county” (The Good Speed Publishing Co. 1887, 152).

Human inhabitation of Southern Illinois began in 12,000 B.C. to 9500 B.C. and by A.D. 1000, Native Americans had established an extensive and productive civilization in this region which is recognized, today, as the Cahokia Mounds UNESCO World Heritage Site (UNESCO 2014). Early European settlements were established in Southern Illinois throughout the 18<sup>th</sup> century and the final forced exodus of Native Americans from the region in the 1830’s remains marked, to this day, by the “Cherokee Trail of Tears”. The Shawnee National Forest and cities such as Shawneetown provide remembrance to the indigenous peoples of the region.

Most of Illinois early settlers came from southern states. Russell (2012, 46) indicates that, “Many of them were “upland” southerners, poor whites from the rural backcountry and hill or mountainous areas where small farmers eked out a living.” They were attracted to the hilly forested land of the region based on the assumption that land without trees would not provide soil that was suitable for farming. The plains of central Illinois were mosquito-infested and the flat lands drained poorly and were not as conducive to agricultural development until drainage systems and mechanized tractors became available. The settlers in Southern Illinois planted crops and cleared trees, unaware of the soil erosion problem that they were potentiating by removing trees from the sloped hillsides. It is important to reiterate that although Southern Illinois farmland does not match the yield per acre of the fertile plains, the land is productive and agricultural remains a significant economic driver and primary land use in the region. The area is often referred to as “Little Egypt”, a given name based, in part, on a 19<sup>th</sup> century visiting Baptist

missionary's vision of fertile land and a vast river system that was reminiscent of the Nile (Musgrave 1996).

The settlements of Southern Illinois gradually became small towns as river traffic necessitated stopping points for refueling and supplies. However, by 1825, when the Erie Canal was created, an alternative route from east to west was available for travelers. This led to northern and eastern migrant settlement patterns in upstate Illinois that contributed to the persistent cultural clashes that exist between the historic southern roots of Little Egypt residents and the previously established northern roots of new inhabitants in cities like Chicago (Russell 2012). Although slavery was not prevalent in Southern Illinois, it was present in the early 19<sup>th</sup> century and in some demand due to manpower needs for the economically productive salt springs. The only location where slave trading was deemed legal in Illinois in the early 1800's was in Little Egypt outside of the town of Equality along the Saline River (Cline 2012). The racial profile of the region is of interest due to the predominantly white-only percentage of inhabitants in most of Southern Illinois, with the notable exception of Alexander County. Cairo, Illinois the county seat of Alexander County was the southernmost point of "free soil" for African-Americans fleeing the South and the present day disproportionate percentage of Black inhabitants in the county is attributable to the post- Civil War emigration of freed slaves. The remaining counties in Southern Illinois have a predominantly White racial profile. This may be associated with established cultural preferences of the African-American population, but the history of "Sundown Towns" in parts of Southern Illinois has been recognized as a potential contributing factor (Loewen 2005). Sundown towns were associated with exclusionary practices that included denying property rental and ownership to individuals based on race or requiring

African-Americans to leave the area after dark. Although the practice is no longer evident in the region, the precedent may have contributed to the racial disparity that persists.

By the late 19<sup>th</sup> century, the railroad industry had made a lasting impact on Illinois. The railroads led to the growth of saw mill communities and rock and quarry operations in Southern Illinois. Produce from Southern Illinois was shipped in refrigerated railroad cars to northern cities. Bituminous coal, rail transported from Southern Illinois, supplied homes with a high-energy heating source and the trains with necessary fuel. Chicago had established itself as a railroad hub for the shipment of beef and grain to eastern cities but the resultant prosperity of immigrants in Chicago was viewed unfavorably by Southern Illinoisans who realized that the raw goods they shipped to northern cities were inequitably valued compared to the price of the finished product. Russell (2012, 66) notes that newly arrived “Yankees” in northern Illinois portrayed white southerners as lazy, uneducated, dirty, poor, ragged, and hopeless. The “Southern Illinoisans were regarded as a “coon and catfish” society that wanted to be left alone, a stereotype that had some truth to it” and, in turn, the residents of Southern Illinois assumed that the Northerners were money-grubbing opportunists (Russell 2012, 67).

The 20<sup>th</sup> century created many challenges for the Southern Illinois economy. Agricultural commodities were often subject to unpredictable natural forces and the pressures of market based demand. The region has seen a gradual decrease in the number of farms but the amount of farm land has remained stable. The automobile and the Interstate Highway System provided alternatives to passenger rail service, which eventually led to the demise of the Southern Illinois Railway and Power Company. Small towns suffered from the loss of revenue that rail terminals had brought to their communities. The 1976 Clean Air Act mandated strict limitations on the use of the high sulfur coal that had become a primary source of employment and revenue for

Southern Illinois. The Surface Mining Control and Reclamation Act of 1977 created additional financial obligations for mining concerns in the region. Out migration of youth who were seeking better employment opportunities decreased the available job force. Coal mine shut downs, prison and factory closures, and the recent reversal of the state government plan to locate an Illinois Department of Transportation facility in Harrisburg, Illinois have contributed to the local sense of disenfranchisement with the state and federal government system. High business costs and taxes have led to Illinois ranking as one of the 3 worst states to do business in the U.S. (Sachdev 2011). The remote location of Southern Illinois and the potential for Indiana to establish itself as Right to Work state compound the economic challenges for the region.

The Stafford Act has established criteria for the consideration of “special populations” in the Individual Assistance disaster declaration determination process. Special populations include low-income, elderly, and unemployed individuals. The degree to which these segments of the population are affected and have a greater need for assistance is factored into the decision for a disaster declaration or denial. The historical and present day socio-demographic profile of Southern Illinois, described in this chapter, is clearly consistent with this “special population” classification. The following chapter presents the research methodology designed to determine if Southern Illinois was adversely affected by the denial of a presidential disaster declaration request, and if this region had a greater need for assistance under the provisions of the Stafford Act.



## **CHAPTER 4:**

### **RESEARCH DESIGN AND METHODOLOGY**

This dissertation research is designed to provide a comprehensive approach to the analysis of spatial equity in the implementation of the Stafford Act. Multivariate generalized regression modeling of data obtained from FEMA through the Freedom of Information Act and from the Centers for Medicare and Medicaid Services was augmented by key stakeholder interviews to address the previously described research questions. This chapter provides a detailed description of the study areas, data collection techniques, and methodological approaches utilized in the analysis.

#### **4.1 Introduction**

The research questions were addressed by means of a two phase study, as depicted in Figure 3. Phase I (national level) of the investigation addresses the first three research questions by analyzing political, economic, social, and spatial factors related to all presidential disaster declaration requests in the U.S. since the initiation of the Stafford Act. Phase II (state/county Level) of the investigation addresses the fourth research question by providing a more focused and detailed examination of Disaster Recovery and Individual/Community Health and Well-Being in select counties of a single state (Illinois) that experienced storm/flood events in 2008. The research utilized qualitative and quantitative convergent validation methodologies to evaluate perceived inequities in the implementation of the Stafford Act.

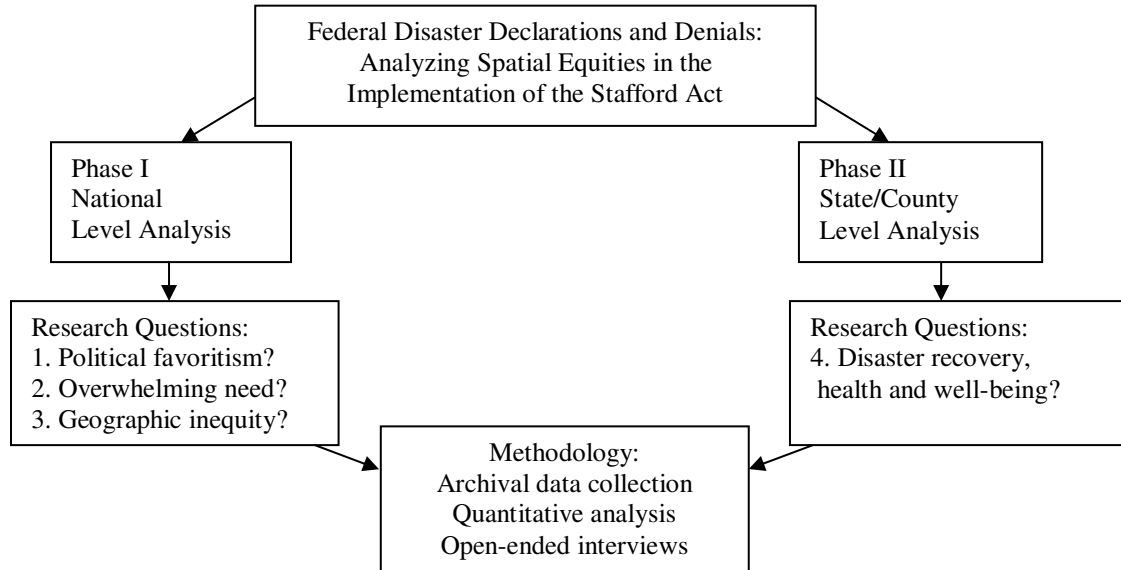


Figure 3: Research design overview

## 4.2 Phase I (National Level)

Phase I of the investigation addresses the questions pertaining to political partisanship and biased vote seeking behavior, “overwhelming” need, and geographic inequity associated with gubernatorial requests for presidential disaster declarations under the provisions of the Stafford Act in the U.S. The key components and steps of this phase of the proposed project are summarized below:

### 4.2.1 Phase I Study Area

Phase I of the analysis of disaster declaration and turndowns is confined to the 50 states of the U.S. The District of Columbia, U.S. territories, and U.S. possessions that are eligible for disaster declarations and turndowns under the provisions of the Stafford Act are excluded due to

the absence of gubernatorial party, voting congressional membership and/or the absence of an electorate that votes in presidential elections.

#### **4.2.2 Phase I Archival Data Collection**

Data sets for this phase of the investigation were obtained from the Federal Emergency Management Agency (FEMA 2013a), under the Freedom of Information Act (FOIA). This information contains records of all presidential emergency and major disaster declarations and denials since May 2, 1953. It also includes the itemized Disaster Financial Status Report for all FEMA expenditures associated with declared disasters from 1989 through 2012. Congressional oversight committee membership and the party affiliations of governors by state were obtained from the Almanac of American Politics (Barone and Ujifusa 1990, 1992, 1994, 1996, 1998, 2000; Barone and Cohen 2002, 2004, 2006, 2008, 2010; Barone and Mccutcheon 2012) consistent with the research of Garrett and Sobel (2003). This data was utilized to assess indicators of political partisanship including same party affiliation between the president and the governor, senators, house representatives, and congressional oversight committee members of the disaster declaration requesting state. The consideration of FEMA oversight committees was consistent with the prior published research of Garrett and Sobel (2003) and Sobel, Coyne and Leeson (2004). There were six House subcommittees and six Senate subcommittees included in the analysis from 1989-2003. The Economic Development, Public Buildings & Emergency Management Subcommittee was added in 2000. The Department of Homeland Security (DHS) was created in 2002 and FEMA was assimilated into DHS as part of the restructuring process. This led to extensive changes in oversight committee roles. Based on prior research (Foley and Rudman 2004; Sobel, Coyne and Leeson 2007), the dissertation limits the consideration of

oversight committees for all disaster declarations and denials since 2003 to the House Appropriations on Homeland Security Subcommittee, the Senate Appropriations on Homeland Security Subcommittee, the House Select Homeland Security Committee, and the Senate Committee on Homeland Security and Governmental Affairs. The FEMA oversight committees /subcommittees are listed in Table 10.

Table 10: FEMA oversight committees

<b>House of Representatives subcommittees/committees</b>
<ol style="list-style-type: none"> <li>1. Economic Development, Public Buildings &amp; Emergency Management subcommittee</li> <li>2. Water Resources and Environment subcommittee of the Transportation and Infrastructure Committee</li> <li>3. V.A., Housing, and Urban Development, and Independent Agency subcommittee of the House Appropriations Committee</li> <li>4. Basic Research subcommittee of the Science Committee</li> <li>5. Housing and Community subcommittee of the Banking and Financial Services Committee</li> <li>6. Select Homeland Security Committee</li> <li>7. House Appropriations on Homeland Security Subcommittee</li> </ol>
<b>Senate subcommittees/committees</b>
<ol style="list-style-type: none"> <li>1. Clean Air, Wetlands, Private Property and Nuclear Safety subcommittee of the Environmental and Public Works Committee</li> <li>2. Veteran’s Administration, Housing and Urban Development subcommittee of the Senate Appropriations Committee</li> <li>3. Oversight of Government Management and District of Columbia subcommittee of the Government Affairs Committee</li> <li>4. Housing Opportunity and Community Development subcommittee of the Banking, Housing and Urban Affairs Committee</li> <li>5. Science, Technology and Space subcommittee of the Commerce, Science, and Transportation Committee</li> <li>6. Homeland Security and Governmental Affairs committee</li> <li>7. Senate Appropriations on Homeland Security Subcommittee</li> </ol>

State level data pertaining to estimated Total Taxable Resources was obtained from the Bureau of Economic Analysis (2012), the National Center for Higher Education Management Systems Information Center for State Higher Education Policymaking and Analysis (2007), and Compson (2003). Poverty data was obtained from the U.S. Census Bureau. FEMA has 10

regional office locations that provide disaster related services, including Preliminary Damage Assessments and Summary Analyses for the FEMA Director. The FEMA regional offices will be considered in the analysis of the research question pertaining to geographic inequity based on the potential for regional operatives to have different assessment standards or different levels of influence with the federal director and/or president.

The resulting breakdown of states included in the respective FEMA regions is as follows:

FEMA Region I-Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont  
FEMA Region II-New Jersey, New York  
FEMA Region III-Delaware, Maryland, Pennsylvania, Virginia, West Virginia  
FEMA Region IV-Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee  
FEMA Region V-Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin  
FEMA Region VI-Arkansas, Louisiana, New Mexico, Oklahoma, Texas  
FEMA Region VII- Iowa, Kansas, Missouri, Nebraska  
FEMA Region VIII-Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming  
FEMA Region IX-Arizona, California, Hawaii, Nevada  
FEMA Region X-Alaska, Idaho, Oregon, Washington

#### **4.2.3 Phase I Quantitative Methodology**

The names and definitions of all variables considered in the analysis are summarized in Table 11. Binary logistic regression was utilized to analyze the dichotomous dependent variable — federal disaster declaration requests. For each Presidential disaster request, declarations were coded as 1 and denials (turndowns) were coded as 0. The reference level for all dichotomous and variables in the Phase I analysis is 0. Separate regression models were implemented to examine emergency disaster declaration requests and major disaster declaration requests. Each model contained a sequential stepwise analysis of the influence of the predictor variables on the dependent variable and of interaction effects for pertinent variables. Separate regression analyses were performed for all disaster declaration requests from 1989-2012 and for “marginal” disaster

declarations that received less than \$24 million in FEMA funding (2012 inflation adjusted).

The objective of the regression analyses was to determine if: (a) variables pertaining to political, partisanship, politically biased vote-seeking, “overwhelming” need, and geographic location are influential with respect to disaster declarations and denials; (b) variables influencing emergency declarations are similar or different from those influencing major disaster declarations; (c) the interaction of pertinent variables is influential with respect to disaster declarations and denials; and if “marginal” disasters are influential with respect to disaster declarations and denials . The different categories of explanatory variables are described in detail below.

Table 11: Variable names and definitions- federal disaster declaration requests

<b>Variable</b>	<b>Definition and measurement</b>
Federal Disaster Declaration Request	1=declaration, 0=denial (turndown)
Partisanship:	
Governor	1=same party, 0=not same
U.S. senator	1=both same party, 0=not same
U.S. house representative	1=majority same party, 0=not same
FEMA oversight committee senate	1=membership on committee, 0=no membership
FEMA oversight committee house	1=membership on committee, 0=no membership
Biased Vote-Seeking:	
Electoral votes weighted	# of electoral votes weighted by prior election outcomes (see formula in text)
Reelection year	1=reelection year, 0=other yr
Overwhelming Need:	
Recent multiple disasters	1=state or federal declaration in prior 12 months, 0=none in prior 12 months
State poverty rate	Percent of state population below the annual poverty level
Total taxable resources	Annual TTR per capita indexed to the U.S.
Geographic Inequity:	
FEMA region	1=region specified, 0=other regions

**Partisanship:** This category consists of distinct dichotomous variables that are indicative of party favoritism between the president and governors, U.S. senators, or U.S. house representatives who shared political party affiliation and U.S. senators or U.S. house representatives who served on FEMA oversight committees. Additionally, FEMA regions are utilized as an independent categorical variable in this analysis to determine if political influences are pertinent to the disaster declaration recommendations that are generated in each respective FEMA region. Gubernatorial, senatorial, and house party similarity with the president is considered a partisan variable due to the electoral benefits that a sitting president may receive from a governor/senator/house member with similar political perspectives who is more likely to support a “same party” president’s initiatives and reelection efforts. For each declaration request, governors of the same party as the president were coded 1 and opposing party governors were coded as 0. States with both senators representing the same party as the president were coded as 1 and states with a single senator or no senator of the same party as the president were coded as 0. States with a majority of house representatives who were of the same party as the president were coded as 1 and states with equal party representation or a majority of house representatives of the opposing party were coded as 0, for each declaration request.

Prior consideration of the influential role of congressional membership on FEMA oversight committees with respect to disaster declarations resulted in the estimation that 44.5 percent of FEMA disaster payments are due to representation on FEMA oversight committees and “that for each House member on an oversight subcommittee (which directly oversees disaster expenditures), states receive an average of \$31 million in excess disaster expenditures” (Garrett and Sobel 2003, 508). However, Garrett and Sobel (2003) indicated that they were unable to obtain information on the total number of disaster requests and their analysis was,

therefore, limited to disaster declarations. Fiscal determinants are not relevant in the consideration of disaster declaration turndowns and oversight committee membership since no financial support is generated for turndowns. However, it is assumed that if the presence of single representative on an oversight committee generates an average of 31 million dollars in additional relief (Garrett and Sobel 2003), the presence of a single representative will also be correlated with a higher success rate in acquiring disaster declarations. The following analysis considers the relationship between membership on congressional FEMA oversight committees and all post-Stafford Act disaster declaration requests (both declarations and turndowns) from 1989-2012. States with at least one senator and/or states with at least one house representative on a FEMA oversight committee were coded 1 and states without a representative were coded as 0.

**Biased Vote-Seeking:** This category was utilized to indicate a tendency for the president to seek voter favor in states with a significant electoral vote (weighted) and/or during reelection years. The weighting for electoral votes was consistent with prior methodology (Garrett and Sobel 2003) and was employed for consistency in comparative analysis. This weighting acknowledged “battleground” states as those states that often switched party allegiance in presidential elections by considering the percentage of presidential elections won by each respective party from 1956-2012 and factoring the percent by the following formula: “ $Y = 1 - 4(X - 0.5)^2$ ”, where  $X$  is the percent of presidential elections between 1956 and 2012 won by a Democrat and  $Y$  is the weighting factor having a maximum value of one at  $X = 50\%$  and a minimum value of zero at  $X = 0\%$  or  $X = 100\%$ .  $Y$  is multiplied by the number of electoral votes in a state to arrive at the measure of electoral importance. Because  $Y$  has an inverted U shape, the value of  $Y$  is the same if we used the percent of presidential elections that were won by a



Republican” (Garrett and Sobel 2003, 500). For each disaster declaration request, the reelection year variable was coded as 1 for reelection year and 0 for other years. Disaster request declarations and turndowns were considered from November 1<sup>st</sup> of the year prior to reelection through October 31<sup>st</sup> of the reelection year for the analysis of the relevant presidential reelection years (1992, 1996, and 2004).

The consideration of electoral votes as a causal factor in the inequitable distribution of presidential disaster declarations has been highlighted in previously referenced research (Sylves and Waugh 1996; Tarcey 2004; Miskel 2006; Sylves 2008, Reeves 2011). This has led to the conclusion that “political discretion exercised by the president is likely to be evident when the president approves governor requests regarding low damage, marginal incidents that often involve relatively low federal payouts” (Miskel 2006, 134-135). Tarcey (2004, 1) reports that “in marginal cases, small, noncompetitive states receive less help because they are just not that important in terms of an election.” The influence of electoral votes as an effect modifier (Horney MacDonald, Van Willigen, et al. 2011) in presidential disaster declaration decision-making is recognized in this dissertation research. The explanatory variables pertaining to “same party” status between the president and governors/senators/house members and the reelection year variable are considered by the use of statistical interactions with the electoral vote weighted variable in a separate multivariate model for Emergency and Major disaster declaration requests (Model 2). This will address the conclusions of prior researchers regarding the primacy of electoral votes as a motivation to award presidential disaster declarations. It is assumed that the purported preferential distribution of a disaster declaration will be greatest in a state that has the combined benefit of “same party” legislator status and higher weighted electoral votes or during

a reelection year in those states with a greater number of weighted electoral votes. These explanatory interaction variables are predicted to have a statistically significant positive relationship with disaster declarations if biased vote-seeking is occurring in the presidential designation of disaster declarations.

**Overwhelming Need:** The Stafford Act specifically provides for discretionary decision making by the president and allows for selective declarations in areas of recurrent disaster exposure and in areas where there is a low income population (Bazan 2005). States with a recent recurrence of a federal disaster declaration within a 12-month time frame and those states with a higher poverty level are less likely to have the financial resources that may be necessary to manage a disaster event without federal support due to the state's fiscal obligations that are associated with these characteristics. Recent multiple disasters was coded as a dichotomous variable with declaration requests for events that occurred within 12 months of a prior declaration coded as 1 and all other requests as 0. Poverty levels associated with each request were categorized by the annual percentage of individuals in poverty for each respective state that was requesting disaster relief. The potential for a state to be "overwhelmed" by a disaster event is evaluated in this study based on the General Accounting Office's recommendation for the use of state "Total Taxable Resources" (TTR) as a guideline for the assessment of state fiscal capacity in the determination of eligibility for federal aid, with specific reference to disaster declarations under the provisions of the Stafford Act (Wrightson 1996; GAO 1998; GAO 2001). TTR, as developed by the Treasury Department, averages per capita income and all income produced within in a state by residents, nonresidents, and businesses. The General Accounting Office (GAO 2001, 12) indicates that "TTR provides a more sensitive adjustment for growth over time in a state's fiscal

capacity than does adjustment for inflation based on personal income”. TTR were reported and categorized as total taxable resources per capita indexed to the U.S. and applied to each state for the respective disaster event. Poverty rate, recent multiple disasters and total taxable resources are predicted to have no statistical relationship with disaster declarations if the decision making process is assumed to be primarily dependent on political partisanship or biased vote-seeking behavior.

Prior research has utilized various insurance and property loss databases to address the question of “overwhelming” need (Schmidlein, Finch and Cutter 2008, Reeves 2011). The concerns related to the use of these sources based on incomplete data and the failure for insured losses to adequately represent the eligibility criteria for Stafford Act PDDs has been previously noted in this dissertation. The distribution of a PDD in large scale events has not been contested in prior research. Events ranging from the California Northridge Earthquake (DR-1008) to Louisiana Hurricane Katrina (DR-1603) do not evoke questions of indiscretion in the declaration decision-making process. Although claims of political inefficiency exist in large and small scale disaster events, the research focus on inequity in the award of a PDD is based on the assumption of presidential partisanship and preference for politically important states and actors in “marginal” disaster events that do not exceed the “overwhelming” needs of a state.

Determining a level of fiscal loss that merits the definition of “marginal” is challenging as the Stafford Act provides for the consideration of a PDD based on eligibility criteria, including “special populations” that may not incur a large economic loss but are in need of federal disaster assistance. However, a valid economic proxy indicator of a “marginal” event is provided by the Insurance Services Office (ISO). The ISO defines a “catastrophe” as an event that causes \$24 million or more in insured property losses and affects a significant number of

property/casualty policyholders and insurers (McGlown and Robinson 2011). This is an economic loss value that represents a viable “cutoff” level based on the data available in the Disaster Financial Status Report (FEMA 2013a), obtained through the Freedom of Information Act. The mean total (2012 inflation adjusted) FEMA expenditures for all Major disaster declarations (N=1199) from 1989-2012 was \$141,314,721 and the range of expenditures per declaration was \$408,250 to \$37,203,720,564. Utilizing a threshold of \$24 million for a “marginal” declaration definition provides a fiscal loss indicator which removes the 389 Major presidential disaster declarations that resulted in the highest FEMA expenditure while retaining 810 Major disaster declaration events. This limiting threshold also removes 30 high economic cost Emergency declarations while retaining 222 of these events in the analysis. By removing these “catastrophic” events from the analysis, we are able to focus on the potential inequity that may exist in the distribution of disaster declarations for the comparatively minor events that do not meet insurance industry standards for “catastrophic” events. Although the ISO catastrophe value is for insured losses, it is a valid and parsimonious proxy indicator for the uninsured losses that are covered under a presidential disaster declaration. A separate binary logistic regression model, utilizing the same variables, will be analyzed for the “marginal” events (N=1356).

**Geographic Inequity:** FEMA regions were utilized in this category to determine if there was any evidence of partisanship in the intergovernmental and bureaucratic relationships that exist between this agency and elected officials, based on geographic location. FEMA regions were included as dichotomous variables for the analysis of Major disaster declarations. For each disaster declaration request, the region under evaluation was coded as 1 and the remaining FEMA regions were coded as 0. FEMA Region VII (IA, KS, MO, NE) represented the required

baseline comparison variable in the analysis because it represented a recommended midpoint (Starkweather 2010) in the range of regional requests during the time frame analyzed. The potential for disparity in the distribution of disaster declarations based on differential degrees of political influence across the various FEMA regions has been addressed in prior research (Stephens and Wikstrom 2007; Schmidtlein, Finch, and Cutter 2008). Schmidtlein, Finch, and Cutter (2008, 13) recommended that further research in this arena should “incorporate measures of state political importance... to identify if those political influences help to explain the differential spatial pattern of PDDs” (presidential disaster declarations). It is assumed that if there are geographic inequities that exist in presidential decision making, certain FEMA regions will reveal a statistically significant relationship with disaster declarations when controlling for the other predictor variables.

#### **4.3 Phase II (State/County Level)**

Phase II of the investigation will address the final research question that pertains to disaster recovery and community well-being. The key components and steps of this phase of the proposed project are summarized below. A mixed methods analysis consisting of informal interviews with key stakeholders in disaster affected regions of southern Illinois and a retrospective multilevel longitudinal analysis of post-disaster stress-related disease was performed to determine the factors associated with the consequences of presidential disaster declaration decisions after the Illinois floods of 2008.

### **4.3.1 Phase II Study Area**

This phase of the proposed research will provide a focused and detailed comparison of socio-demographically similar counties in Illinois that received individual and household assistance via presidential Stafford Act disaster declarations with counties in Illinois that were denied requests for individual and household assistance under the Stafford Act for similar storm and flood related disaster events during the 2008 disaster year. Illinois was selected for this investigation because this state provides a unique setting for a comparative assessment of presidential disaster declarations and denials. A comparative examination of counties that received presidential disaster declarations and counties that were denied requests for presidential disaster declarations is best performed if confounding variables can be eliminated. Variations in a state's capacity to respond to disasters based on established emergency protocols, mutual aid compacts, mitigation strategies, public resources, and available revenues creates the potential for unreliable results in a comparative assessment. Additionally, a comparative consideration of disaster events that are dissimilar in type and place provides for potentially misleading results.

All Illinois counties in the study area met U.S. Health Resources and Services Administration (HRSA), Office of Rural Health Policy, criteria for rural designation. None of the involved counties had a request issued by the governor of Illinois for individual and family assistance under the provisions of the Stafford Act in the prior four years and none of the counties received a gubernatorial or presidential disaster declaration in the year subsequent to the respective declaration/denial. The counties that were denied a presidential disaster declaration were also denied Stafford Act relief on a follow-up formal appeal to the president through established protocols. The majority of counties (14) that received disaster declarations from the president were authorized by the federal coordinating office for the disaster event to receive long

term recovery assistance. All of the disaster exposed counties have had prior exposure to events ranging from the 1937 Ohio River floods to the 1993 Mississippi River flood.

This scenario provides a study area that was subject to similar types of disaster events during the same calendar year, under the same response and recovery measures provided by the state government of Illinois. If the distribution of presidential disaster declarations is equitable, the denied counties are not expected to have experienced an “overwhelming” need for individual and household assistance under the guidelines of the Stafford Act and they should be able to recover from the event without federal assistance. The disaster declared counties, in contrast, are expected to have exhibited “overwhelming” need and their recovery was dependent on federal relief. A comparative analysis of disaster recovery and community well-being from 2008 events in declared and denied counties of Illinois should reveal similar findings if the Stafford Act was equitably implemented.

#### **4.3.2 Phase II Archival Data Collection**

This research utilizes encrypted individual-identifier level empirical data, obtained from the Centers for Medicare and Medicaid Services, which has not been considered in prior published studies pertaining to the differential recovery of individuals in disaster affected rural communities. Access to this information was approved by the U.S. Centers for Medicare and Medicaid Services (CMS) after peer-review of a request for data for all Medicare recipients in the 17 declared rural counties, the 15 denied rural counties, and 12 control rural counties that did not request an Individual Assistance Stafford Act disaster declaration in any year from 2004-2009 (See Table 12).

Table 12: 2008 Illinois case study counties

<b>DENIED COUNTIES</b>	<b>DECLARED COUNTIES</b>	<b>CONTROL COUNTIES</b>
Alexander	Adams	Bond
Franklin	Calhoun	Cass
Gallatin	Clark	Christian
Jackson	Coles	Dewitt
Jefferson	Crawford	Fulton
Johnson	Cumberland	Marshall
Marion	Douglas	Mason
Massac	Edgar	Montgomery
Perry	Hancock	Morgan
Pulaski	Henderson	Putnam
Randolph	Iroquois	Scott
Saline	Jasper	Stark
Union	Jersey	
White	Lawrence	
Williamson	Livingston	
	Mercer	
	Whiteside	

Health Insurance Portability and Accountability Act (HIPAA) requirements have been met by utilizing encrypted identifiers and protected data bases. A stratified random sample of 12,000 individual Medicare recipients who maintained community-based residence in the same county of the study area from 2007-2009 are included in the CMS datasets. Diagnostic groupings of 78 stress-related disease and control indicators were considered in a manner consistent with prior studies (Burton et al. 2009; Holman and Silver 2011) (See Table 13) and with the extensive list of references to psychological and physiological stress-related disorders that are provided in Chapter 1: Introduction and in Chapter 2.7 Health, Well-being, and the Mechanism for Post Disaster Stress- Related Illness. The diagnostic grouping scheme and the selection of comorbid disorders in the research design is consistent with the peer-reviewed literature pertaining to stress-related disease, the peer-reviewed federally approved research study protocols from the



Centers for Medicare and Medicaid Services that were, as previously stated, required to obtain the encrypted individually identified files used in the analysis, and the peer-reviewed National Science Foundation SBE Doctoral Dissertation Research Improvement Grant (SBE DDRIG #1233352) approved research study protocols. Each of the ICD-9CM codes selected is associated with a stress-related disorder that is recognized in the medical literature as a component of the diagnostic grouping category to which it is assigned (Costa et al. 1982; Cohen and Ginsburg 1990; Colantonio et al. 1992; Sartorius et al. 1996; Korszun et al. 1998; Kroenke et al. 1998; Beekman et al. 2000; Mayer 2000; Linton 2000; Noyes 2001; Cenac et al. 2002; Gur 2004; Neugebauer 2004; Furman et al. 2005; Schoevers 2005; Bruce et al. 2005; Suls and Bunde 2005; Best et al. 2006; Nicholson et al. 2007; Seignourel 2008; Mizyed, Fass and Fass 2009; Saczynski 2010; Byers and Yaffe 2011; Wilson et al. 2011; Lambiase, Kubzansky and Thurston 2014). The use of diagnostic grouping methods for disease specific studies and categorization schemes is well-established in the medical literature (Robinson 2007). Variations of this approach have been applied by private and federal entities and include the methodology of the United States Department of Health and Human Services (HHS) Agency for Healthcare Research and Quality (AHRQ) in the Healthcare Cost and Utilization Project (HCUP)-Clinical Classifications Software (CCS) for ICD-9-CM (HCUP CCS 2014), the Johns Hopkins University Health Services Research and Development Center -Adjusted Clinical Groups (ACGs) (Health Services Research and Development Center 2011), the Diagnostic Cost Groups/Hierarchical Condition Categories (DCG/HCCs) (Ash et al. 2000), and the 3M-Clinical Risk Groups (CRGs) (Hughes et al. 2004). These grouping mechanisms can be utilized to analyze the influence of a variety of environmental and societal factors on categories of disease with similar characteristics, comorbidities, and precipitating factors. These techniques obviate the problems associated with

fragmented analyses of individual ICD-9-CM codes that may suppress significant findings when the individual codes are infrequently observed and/or not appropriately grouped. Additionally, studies of physiological aspects of stress related disease may be subject to ill-defined clinical conditions that may be associated with zealous use of ICD-9CM codes by practitioners, pending a more conclusive diagnosis (i.e. fibromyalgia, chronic fatigue syndrome). The problems associated with overlap of clinical conditions/presentations (Aaron and Buchwald 2001) is addressed in this analysis by utilizing a single count of visits within diagnostic grouping, regardless of the number of ICD-9-CM codes that were assigned to a patient for that visit. It is acknowledged that alternative approaches to the analysis of frequency of service for disease exist but the use of diagnostic groupings with the assignment of one visit or equivalent, independent of the number of symptom/diagnosis/medication findings in each group at the time of visit, is well-established in the peer reviewed medical literature (Herrmann et al. 1998; Maynard and Cox 1998; Mechanic, McAlpine and Olsson 1998; Bao and Sturm 2001; Pottick, McAlpine and Andelman 2000; Duffy 2004; Helgason, Tomasson. and Zoega 2004; Lau et al. 2005; Sayers et al. 2007; Cohen et al. 2010). Additionally, none of the aforementioned references provide itemized frequency counts for the subordinate level diagnosis/symptom/medication in the respective diagnostic grouping but this information is defined in Table 14 to support the analysis. The study is restricted to Medicare recipients who were 65 years old or greater at the time of the disaster event. The Medicare eligible age group was selected due to the specified emphasis on elderly populations in the Stafford Act determination criteria and prior research findings associated with stress-related vulnerabilities and resiliencies in this age strata (Kilijanek and Drabek 1979; Krause 1987; Ticehurst et al. 1996). This data includes all individual outpatient/office visits, as listed in the Medicare Carrier, Beneficiary Summary, and Outpatient

files, for Diagnostic and Statistical Manual of Mental Disorder (DSM) anxiety and depressive disorders that are related to psychological stressors such as disasters and the associated International Statistical Classification of Diseases and Related Health Problems (ICD 9 CM) diagnostic codes for these disorders and stress-related physiological conditions.

The names and definitions of all disorders considered in the analysis and their respective grouping categories are summarized in Table 13.

Table 13: Stress-related disorders and control indicators by grouping variable

<b>Anxiety Depression</b>	<b>Acute Vascular</b>	<b>Dementia</b>	<b>Gastrointestinal</b>	<b>Somatic</b>	<b>Control</b>
Anxiety	Acute Cerebrovascular Disease	Alzheimer's	Gastroesophageal Reflux Disease	Back/Neck/Chronic Pain	Cholecystitis
Depression	Acute Myocardial Infarction	Senile Dementia	Gastritis	Chronic Fatigue Syndrome/Fatigue	Otitis externa
Generalized Anxiety Disorder	Cerebral Infarction	Senility w/o Psychosis	Irritable Bowel Syndrome	Fibromyalgia	Otitis media
Panic Disorder	Angina		Ulcer	Generalized pain	
PTSD				Headache-Migraine/Tension	
				Irritable Bowel Syndrome	
				Polymyalgia rheumatica	
				Sleep Disorder	
				Temporomandibular Joint Syndrome	
				Vertigo Unspecified	

Individual level socio-demographic information pertaining to each Medicare beneficiary's race, gender, date of birth, and dual-eligible Medicaid status (Low Income, < 135 percent of federal poverty level) was also obtained from the encrypted CMS database. This information will be utilized to control for socio-demographic variations in utilization of

Medicare services and to assess the relationships between these characteristics and the incidence of stress-related disease visits in the study area. Prior research has documented differences in the incidence of stress-related disorders associated with the demographic variables under analysis (Boman 1979; Norris, Friedman, and Watson 2002; Cutter, Boruff and Shirley; Cutter 2006; Barr 2008; Burton, Skinner, Uscher-Pines, et al. 2009; Holman and Silver 2011). The consideration of the potential for the combined effects of poverty, age, race, gender, and health service access to exacerbate post disaster stress-related illness is critical to an evaluation of equity in the distribution of federal disaster relief.

The Robert Wood Johnson Foundation (RWJF) (2013) has developed a reverse coded Z - scoring system to rank counties based on access to health care. The Lack of Access metric considers several factors including “the percentage of the population that could (or could not) get medical care when needed; the number of patients served by a federally qualified health center (FQHC); and the availability of primary care providers in a community.” Lack of access to health care is a valid consideration in the determination of different patterns of utilization for medical services and the RWJF scoring system will be applied in this analysis. County level data pertaining to all federal grant dollars distributed for fiscal years 2008 and 2009 was obtained from the U.S. Census Bureau (2009a, 2010). This information will be utilized as a control variable for the consideration of Stafford Act and non-Stafford Act related county-level federal financial support in the study area for FY 2008 and 2009.

The consideration of social capital as a measure of community resilience and as a valued asset in disaster recovery has been acknowledged in the academic literature (Nakagawa and Shaw 2004; Norris et al. 2008). This is of particular importance in communities where denials have been issued for disaster declaration requests. The Stafford Act acknowledges the

importance of social capital by indicating that Individual Assistance declarations may not be issued in communities where adequate volunteer support is available to address the needs of disaster survivors. The Northeast Regional Center for Rural Development (NERCRD) has created a Social Capital Index from 14 county level demographic variables, utilizing Principal Component Analysis (Rupasingha and Goetz 2008). The scored variables included in the NERCRD Social Capital Index are based on the following county level attributes: number of religious organizations, civic and social associations, business associations, political organizations, professional organizations, labor organizations, bowling centers, physical fitness facilities, public golf courses, sport clubs, managers, and promoters, population, voter turnout, survey response rate, and number of non-profit organizations without including those with an international approach. This index will be applied in the analysis of disaster recovery.

Estimated Individual Assistance related property damages for the respective disaster declared and denied counties were obtained from the Illinois Emergency Management Association, the FEMA Preliminary Damage Analysis, and the U.S. Small Business Association. This information is considered to control for the relative effect of property losses on emotional stress and the potential need for health services associated with office/outpatient visits.

#### **4.3.3 Phase II Quantitative Methodology**

The names and definitions of all variables considered in the analysis are summarized in Table 14. A hierarchical longitudinal generalized linear mixed regression model was utilized to analyze the natural logarithm of the counts of office/outpatient visits as a function of the predictor variables. The observed overdispersion of zeroes in patient visit counts was accommodated with the addition of a dispersion parameter in a negative binomial regression to

avoid underestimation of standard errors and overestimation of test statistics with a resultant increase in Type 1 error rates. Empirical standard error estimates are reported as they provide more conservative indicators of statistical significance when the covariance structure is not consistent across models. The logarithm of the expected count is assumed to be a linear function of the relevant independent variables and a maximum likelihood method was used to estimate the model. Nonlinear ridging was utilized to accommodate any violations of the assumption of linearity in the time related measurements.

Omitted reference variables for the comparisons of denied-declared-control counties were applied in separate models in order to provide independent comparisons of each group. An individual-level random effects model was created for each dependent variable utilizing a first-order autoregressive covariance structure to account for the within subject time-related correlations in the generalized linear models. Separate regression models were designed for counts of patient visits for stress-related or non-stress-related control diseases in 6 diagnostic grouping categories. Office/outpatient visits that contained more than one diagnosis from the same category were counted as a single visit to avoid over counting for comorbid illnesses that existed in the same diagnostic grouping dependent variable (Aaron and Buchwald 2001). If a Medicare beneficiary in the study area went to the doctor with a headache, backache, fatigue, and dizziness, that patient was counted as having one visit in the somatic category, not four visits in the somatic category. This avoids biased over counting of visits for comorbid diagnoses within the same outcome grouping variable for the individual random effects component of the model. If the same patient also had a diagnosis of depression during the same visit then he/she had 1 visit in the somatic category and one visit in the anxiety/depression category. The somatic category and the anxiety/depression category are evaluated independently of each other in this

analysis. The comorbidity of the somatic group and the anxiety/depression group is acknowledged. However, the acute vascular, dementia, GI, and somatic diagnostic grouping categories are specifically utilized in the analysis as separate alternative indicators of stress-related disease to accommodate populations that may have lower utilization rates for anxiety/depression due to lack of access to mental health providers and/or stigmatization regarding mental health concerns but retain more normal utilization rates for comorbid stress-related physiological conditions. This approach provides a sophisticated research design that addresses gaps in analytical models that combine comorbid diagnoses from multiple categories of psychological and physiological illness. Comorbidity indices that combine physiological and psychological disorders into one category of stress-related disease lose the refined analysis that is provided by the above approach and increase the potential for Type I or Type II statistical errors due to aberrant over/under counting of patient visits for subcategories of stress-related illness in certain subsets of the population. Each of the categories contained established diagnostic indicators of stress-related diseases that may be exacerbated by disaster exposure including; anxiety/depression (13- ICD-9-CM diagnostic codes); acute vascular conditions (14- ICD-9-CM diagnostic codes); dementia (3- ICD-9-CM diagnostic codes); gastrointestinal disorders(10- ICD-9-CM diagnostic codes); somatic disorders (33- ICD-9-CM diagnostic codes); and a non-stress-related control (4- ICD-9-CM diagnostic codes). The specific diagnosis codes and visit frequencies are listed in Table 14. The ICD-9-CM codes were grouped as described and compared for each portion of the case study area (denied, declared, control). Table 20 provides descriptive statistics for the range and number of visits in each diagnostic grouping category for each area (denied, declared, control) and each time frame under analysis.

Table 14: ICD-9-CM Diagnosis Codes and Frequency of Visits in Study Area (N=12,000)

Anxiety/Depression			Acute Vascular			Dementia		
ICD	Freq	Dx	ICD	Freq	Dx	ICD	Freq	Dx
311	3768	Depression	436	1647	Acute Cerebrovasc. Dis.	797	53	Senility w/oPsych
296.20	181	Depression	411.1	1305	Angina	290.0	844	Senile dementia
296.22	82	Depression	413.9	2428	Angina	331.0	2654	Alzheimer's
296.23	33	Depression	410.11	65	Acute MI			
296.30	327	Depression	410.41	138	Acute MI			
296.31	52	Depression	410.70	95	Acute MI			
296.32	157	Depression	410.71	451	Acute MI			
296.33	182	Depression	410.90	357	Acute MI			
296.34	72	Depression	410.91	215	Acute MI			
296.35	33	Depression	410.92	101	Acute MI			
300.00	2781	Anxiety	433.11	85	Cerebral Infarction			
300.01	95	Panic Disorder	434.01	94	Cerebral Infarction			
300.02	568	Gen. Anx. Disord.	434.11	60	Cerebral Infarction			
309.81	14	PTSD	434.91	1719	Cerebral Infarction			
G.I.			Somatic			Control		
ICD	Freq	Dx	ICD	Freq	Dx	ICD	Freq	Dx
787.1	136	Heartburn	725	620	Polymyalgia	382.9	359	Otitis media
530.81	7601	GERD	564.1	640	IBS	575.0	103	Cholecystitis
531.90	203	Ulcer/gastritis	338.4	112	Chronic pain syndrome	380.10	341	Otitis externa
532.90	83	Ulcer/gastritis	723.1	5451	Neck pain	381.10	0	Otitis media
533.90	232	Ulcer/gastritis	724.1	2830	Back pain			
535.00	325	Ulcer/gastritis	724.2	11909	Back pain			
535.10	418	Ulcer/gastritis	724.3	3908	Back pain			
535.40	491	Ulcer/gastritis	724.4	4518	Back pain			
535.50	1016	Ulcer/gastritis	724.5	3856	Back pain			
564.1	640	IBS	729.1	3843	Fibromyalgia			
			338.29	412	Chronic pain			
			346.00	32	Migraine			
			346.10	38	Migraine			
			346.90	157	Migraine			
			386.10	110	Vertigo unspec.			
			524.60	51	TMJ			
			524.62	0	TMJ			
			524.63	0	TMJ			
			524.69	0	TMJ			
			780.50	184	Sleep disorder			
			780.51	17	Sleep disorder			
			780.52	975	Sleep disorder			
			780.53	307	Sleep disorder			
			780.54	58	Sleep disorder			
			780.56	41	Sleep disorder			
			780.57	806	Sleep disorder			
			780.58	0	Sleep disorder			
			780.59	0	Sleep disorder			
			780.71	219	Chronic fatigue syn.			
			780.79	11679	Fatigue			
			780.96	123	Generalized pain			
			307.42	46	Sleep disorder			
			307.81	112	Headache tension			



The objective of the regression analyses was to determine if a presidential disaster declaration or denial for a gubernatorial Individual Assistance request influenced the incidence of stress-related diseases, while controlling for the effects of the aforementioned demographic variables.

Data was analyzed for the time frame consisting of six months pre-event, and 18 months post-event, in six month increments (2007-2009). This time frame is consistent with the peer-reviewed literature pertaining to the variations in the documented phases of disaster recovery and the potential for delayed onset of post-disaster psychological symptoms (Phifer, Kaniasty and Norris 1988, Phifer and Norris 1989; U.S. Department of Health and Human Services 2000). Lorrie Rickman Jones of the Illinois Department of Human Services, Division of Mental Health, acknowledged an awareness of the delayed onset of post disaster stress-related symptoms after the 2008 flood in presidential disaster declared Iroquois and Livingston counties in stating, "Psychological effects of a natural disaster of this type often don't show up until months after the event. We want people to know crisis counseling is there for them now and in the future" (Illinois Department of Human Services 2008). The 18 month post-event time frame also represents a cumulative period in which a significant amount of Stafford Act benefits had been distributed to individuals and households in the declared counties under investigation. The date of disaster event occurrence for the declared and denied counties was the first date listed in the gubernatorial disaster declaration request and for control counties the date of disaster event occurrence was established as the midpoint of the dates of the disaster denied and declared events.

Counties that received Individual Assistance disaster declarations and also shared contiguous borders with counties which were denied Individual Assistance declarations will be excluded due to potential overlap in resource utilization variables included in the analysis.

Counties that were not categorized as rural by the HRSA- Office of Rural Health Policy were excluded from the analysis to maintain consistency between declared and denied areas with respect to DHS grants for metropolitan areas. Control counties were selected based on mean weighted consistencies with disaster affected counties ( $p > 0.05$ ), utilizing the 2010 County Health Rankings & Roadmaps Social and Economic Factors index (2013).

There are three distinct controls utilized in this study: 1) a pre-event baseline count of office/out-patient visits for each disease category; 2) an independent variable control grouping that is used as a comparison of counties that were not affected by a disaster with disaster declared/denied counties; and 3) a control diagnosis group category of non-stress-related disease that is used as a comparison indicator of time-dependent utilization trends for non-stress-related patient visits in the respective declared/denied/control regions of the Illinois study area. The selection of the disorders for the control diagnosis group category, otitis media and otitis externa (ear inflammation/infection) and cholecystitis (gall bladder inflammation), were based on the lack of evidence of a prominent stress correlate with these conditions and a severity of presentation that would not lead to overcounting as an innocent diagnosis in the consideration of office/outpatient visits in the respective time frames. Controlling for pre-disaster symptoms by the use of a comprehensive Medicare database that provides established indicators of pre-event stress-related well-being addresses methodological problems that have been noted in prior hazards research associated with a lack of knowledge of individual physical and psychological status prior to the disaster event (Norris, Phifer, and Kaniasty 2001; Soeteman 2008). The different categories of explanatory variables and the coding criteria are described in Table 15.

Table 15: Variable names and definitions

<b>Variable</b>	<b>Definition and measurement</b>
Time 1-4	0-6 m pre, 0-6 m post, 6-12 m post, 12-18 m post
Disaster Request	FEMA 0=denial, 1=declaration, 2=control
Anxiety/Depression	CMS Count # of visits per individual
Acute Vascular	CMS Count # of visits per individual
Dementia	CMS Count # of visits per individual
Gastrointestinal	CMS Count # of visits per individual
Somatic	CMS Count # of visits per individual
Control	CMS Count # of visits per individual
Gender	Individual level CMS 1=Male, 2=Female
Lack of Access to Health Services	County level RWJF Z-score (higher value = lower access)
Federal Grants	County level Dept. of Commerce county \$ per cap 2008-2009
Extreme Elderly >80 years	Individual level CMS 0= < or = 80 at event, 1=>80 at event
Social Capital	County level NERCRD social capital index score
Race	Individual level 0=Non-white, 1=White
Medicaid (Low Income)	Individual level CMS 0=No Medicaid 1= Medicaid
Property Damage-Homes	County level IEMA/FEMA/SBA per capita damage estimate

CMS=Centers for Medicare & Medicaid Services,  
 IEMA=Illinois Emergency Management Association  
 NCCS=National Center for Charitable Statistics  
 NERCRD= Northeast Regional Center for Rural Development  
 RWJF=Robert Woods Johnson Foundation

The selection of diseases for the diagnostic grouping categories (anxiety/depression, acute vascular, dementia, gastrointestinal (G.I.), somatic, control) was designed to highlight psychological and physiological disorders that have well established correlations with stressful events such as disasters. These groupings were utilized as the dependent variables in separate models to evaluate the influence of the predictor variables on the count of number of office/outpatient visits in the previously described time frames. The longitudinal analysis considers the incidence of cumulative visits for each respective diagnostic stress-related disease grouping in the pre event time frame (0-6 months pre-event) as a baseline for comparison to the incidence of cumulative visits that occurred in each of the three post-event time frames (0-6 months post-event; 6-12 months post-event; 12-18 months post event), while controlling for the effects of the predictor variables. The categorical variable, Disaster Request (denial, declaration,

control), was applied as a statistical interaction with the variable, Time 1-4, for each time frame comparison to the baseline (0-6 pre-event time). The resultant regression coefficients report the comparative change in the incidence of office/outpatient visits for the disaster request denied, declared, and control regions in the 0-6 month post-event, 6-12 month post-event, and 12-18 month versus the 0-6 month pre-event time frame. The individual level socio-demographic characteristics (gender; extreme elderly status (age: 80 years or older); race; and Medicaid-low income) were coded as dichotomous variables in the manner defined in Table 15. These values are arranged in ascending alphanumeric order which results in the highest number representing the reference level. The extreme elderly or “oldest old” have been alternately defined in the peer reviewed literature as individuals that were 75, 80, or 85 years of age or older (Camacho et al. 1993). This study utilizes the midpoint of that range (age: 80 years or older) for the categorization of extreme elderly based on extensive justification in the peer reviewed medical literature regarding the unique characteristics of health and well-being in this age group (Ishii, Hosoda and Maeda 1980; Harris et al. 1989; Suzman et al. 1992; Camacho et al. 1993; Desbiens et al. 2001; Haynie et al. 2001; Liang et al. 2001; Xavier et al. 2002; Zeng and Vaupel 2002; Human Rights Education Associates 2003; Yi, Yuzhi and George 2003; Andersen-Ranberg et al. 2005; Nilsson 2010; Bansal et al. 2011; Panagiotakos et al. 2011; Shapiro et al. 2011; Johnson 2012). County level demographic per capita variables were based on 2008 population estimates and the NECRCRD social capital index score and Robert Wood Johnson Foundation Z-scoring measurement criteria have been previously described.

#### **4.3.4 Phase II Qualitative Methodology**

Informal conversational interviews with 27 key stakeholders in Southern Illinois were performed between October 2011 and April 2013. Each interviewee was provided with an Institutional Review Board approved summary of the research intent and the option to be an anonymous participant. It became evident, early in the interview process, that the participants were most comfortable with an informal process. My status as a medical officer with state and federal disaster response teams provided me with an opportunity to interact with key stakeholders in Illinois in an ethnographic context, as a member of the extended team of first responders. On two separate occasions at local and regional meetings, I was asked to provide an impromptu summary of my experiences related to special needs sheltering and patient care. In regard to the privileged information that was provided to me by varied members of the disaster management network, I elected to recommend that all of the participants remain anonymous with the exception of those that are listed, by name in the text. Additionally, I have generalized the dates of the interviews and the title of the interviewee. Many of the individuals who were generous with their time, candor, and perspectives worked as the sole emergency response or preparedness representative in their county and their anonymity would be violated by any specific geographic identifier. The interviews focused on the 2008 storm/flood disaster events, but often evolved into personal narratives related to rural life and individual hopes and aspirations. Several of the interviews yielded contextual background that led to further archival investigation and the names of interviewees are included when their perspectives were substantiated by published reports in local newspapers. The interviews ranged from 20 minutes to several hours and took place in several locations that will remain privileged to protect the sources.

The comments from the interviewees were not recorded and I put my pen down on more than one occasion when it became evident that copious note-taking was perceived as a sign of disrespect and that my eye contact and sincere interest were the most valued signs of trust. The 20 anonymous quotes that are contained in the dissertation were read back to the participants at the conclusion of the interview for their approval. Each of these quotes is referenced in the text at points where it is pertinent to an understanding of the subject matter. This approach to the investigation of post-disaster stress-related disease provided rich insights into the Southern Illinois community and I am indebted to each of the participants for sharing their perceptions of the 2008 flood disaster and of rural life in Southern Illinois.

## **CHAPTER 5:**

### **RESULTS OF SPATIAL EQUITY ANALYSIS**

The results of the quantitative analysis of data pertaining to the dissertation research questions are provided in this chapter. Descriptive statistics, logit coefficients, odds ratios and summary findings are produced for the analysis of explanatory factors related to political partisanship/biased vote seeking, overwhelming need, and geographic inequity in a full and marginal regression model. Relevant interaction effects are considered in the analysis of electoral votes weighted. Graphic representations of the mean number of visits for each time-frame in the disaster denied, declared, and control areas are provided in conjunction with negative binomial individual level random coefficients for the analysis of explanatory factors related to disaster recovery and individual/community health and well-being.

#### **5.1 Results Research Question 1, 2, 3**

##### **5.1.1 All Disaster Declaration Requests**

The results for the analysis of all disaster declaration requests from 1989-2012 (N=1775) pertaining to the research questions associated with political partisanship/biased vote seeking; overwhelming need, and geographic inequity, are provided in Tables 16 and 17. Table 16 provides summary statistics for emergency and major disaster declaration requests and includes each of the variables used in the analysis. There were a total of 1,775 total disaster declaration requests analyzed during the 1989-2012 time frame. This included 283 (15.9 percent) requests

for emergency declarations and 1,492 (84.1 percent) requests for major disaster declarations. The incidence of presidential approval for all Emergency and Major disaster declaration requests under evaluation from 1989-2012 was 81.8 percent (1451/1775). The presidential approval rate was 89 percent (252/283) for Emergency declaration requests and 80.4 percent (1199/1492) for Major disaster declaration requests.

Multivariate logistic regression was utilized to investigate the statistical effect of the aforementioned partisanship, biased vote-seeking and “overwhelming” need characteristics, after including the variables in separate models for emergency and major disaster declaration requests. The categorical variable for FEMA Regions was not included in the models for emergency declarations because of the absence of a single turndown for any request in this category in FEMA Regions III, V, VII, and X. This created unreliable statistical estimates in the categorical comparison. The Logit models were estimated for the designation of a disaster declaration by the president as a function of the explanatory variables previously described. For each logit model, the natural logarithm of the odds of acquiring a presidential disaster declaration is assumed to be a linear function of the relevant independent variables and the maximum likelihood method was used to estimate the model. Model 1 includes all variables with the exclusion of the, previously mentioned, FEMA Region variable for the Emergency declaration request analysis.



Table 16: Descriptive statistics for variables analyzed: all disaster declaration requests (N 1775)

Variable:	Emergency Disaster Declaration Request (N=283)				Major Disaster Declaration Request (N=1492)			
	Min	Max	Mean	SD	Min	Max	Mean	SD
Declaration	0	1	0.89	0.31	0	1	0.80	0.40
Governor	0	1	0.52	0.50	0	1	0.48	0.50
Senate	0	1	0.34	0.48	0	1	0.34	0.47
House	0	1	0.49	0.50	0	1	0.47	0.50
Senate FEMA Oversight	0	1	0.70	0.46	0	1	0.65	0.48
House FEMA Oversight	0	1	0.66	0.48	0	1	0.62	0.49
Electoral Vote weighted	0.85	52.07	11.14	10.25	0.85	52.34	10.36	10.52
Reelection Year	0	1	0.11	0.32	0	1	0.17	0.38
Recent Declaration	0	1	0.74	0.44	0	1	0.76	0.43
State Poverty Rate	6	26	13.07	3.46	6	26	13.51	3.50
TTR Index	0.67	1.6	1.00	0.18	0.67	1.73	0.97	0.16
FEMA Region I	0	1	0.21	0.41	0	1	0.09	0.29
FEMA Region II	0	1	0.10	0.30	0	1	0.05	0.23
FEMA Region III	0	1	0.09	0.28	0	1	0.09	0.29
FEMA Region IV	0	1	0.17	0.38	0	1	0.21	0.40
FEMA Region V	0	1	0.10	0.29	0	1	0.13	0.33
FEMA Region VI	0	1	0.16	0.37	0	1	0.14	0.35
FEMA Region VII	0	1	0.05	0.22	0	1	0.10	0.30
FEMA Region VIII	0	1	0.05	0.22	0	1	0.07	0.25
FEMA Region IX	0	1	0.06	0.24	0	1	0.05	0.23
FEMA Region X	0	1	0.01	0.10	0	1	0.06	0.25

A simultaneous examination of all explanatory variables in a single model allows for consideration of the effects of each variable while controlling for the effects of the remaining variables. Model 2 provides for the sequential addition of interaction terms between the electoral votes weighted variable and the Governor, Senate, House, and reelection year variables.

The logit coefficients and odds ratios from the multivariate logistic regression models are presented in Table 17. The log likelihood (chi-square) test indicated overall significance for both the emergency disaster declaration request model ( $p < 0.001$ ) and for the major disaster declaration request model ( $p < 0.001$ ).

Table 17: Logit coefficients and odds ratios: multivariate analysis of “all” disaster declaration requests (1989-2012)

Variable	Emergency Disaster Declaration Request				Major Disaster Declaration Request			
	Model 1		Model 2		Model 1		Model 2	
	Coef	Odds Ratio	Coef	Odds Ratio	Coef	Odds Ratio	Coef	Odds Ratio
Governor	0.62	1.86	0.06	1.06	0.28*	1.33	0.35	1.43
Senate	2.05**	7.78	1.20	3.32	-0.27	0.76	-0.24	0.79
House	-0.89*	0.418	-0.61	0.54	0.03	1.03	0.12	1.13
Senate FEMA Oversight	0.20	1.23	0.25	1.29	-0.05	0.95	-0.07	0.94
House FEMA Oversight	0.31	1.36	0.32	1.37	-0.29	0.75	-0.29	0.75
Electoral Vote wtd	-0.04	0.97	-0.06	0.944	-0.02*	0.98	-0.01	0.99
Reelection Year	0.75	2.12	-0.45	0.64	0.30	1.35	0.05	1.05
Recent Declaration	1.09*	2.96	1.13*	3.10	-0.02	0.98	-0.02	0.98
State Poverty Rate	-0.07	0.94	-0.07	0.93	-0.01	0.99	-0.01	0.99
TTR Indexed to US	4.84*	126.07	4.56*	95.52	-1.50*	0.22	-1.53	0.22
Gov* Elec Vote wtd	-	-	0.05	1.05	-	-	-0.01	0.99
Sen* Elec Vote wtd	-	-	0.10	1.10	-	-	0.00	1.00
House* Elec Vote wtd	-	-	-0.02	0.98	-	-	-0.01	0.99
Reelect* Elec Vote wtd	-	-	0.16	1.18	-	-	0.02	1.02
FEMA Region I	-	-	-	-	0.26	1.30	0.27	1.32
FEMA Region II	-	-	-	-	0.66	1.93	0.65	1.91
FEMA Region III	-	-	-	-	0.52	1.68	0.52	1.68
FEMA Region IV	-	-	-	-	-0.21	0.81	-0.22	0.81
FEMA Region V	-	-	-	-	0.09	1.09	0.07	1.07
FEMA Region VI	-	-	-	-	-0.37	0.69	-0.36	0.70
FEMA Region VIII	-	-	-	-	0.46	1.59	0.45	1.57
FEMA Region IX	-	-	-	-	0.42	1.53	0.44	1.55
FEMA Region X	-	-	-	-	0.33	1.39	0.32	1.38

\* p < 0.05. \*\* p < 0.01

About 89 percent of the observed declarations and denials (turndowns) were correctly predicted or classified as declarations or denials (turndowns) by the multivariate logit model for emergency requests and 80 percent were correctly classified by the model for major requests. Collinearity diagnostics, including variance inflation factor (VIF), tolerance, and condition indices, indicated no significant evidence of multicollinearity between the explanatory variables in either model.

For Emergency declaration requests in Model 1, the success in acquiring declarations is significantly influenced by senate and presidential party similarity, after controlling for the other explanatory variables. The odds of acquiring an Emergency declaration increase for each emergency request in states where both U.S. senators were from the same party as the president. The odds of receiving an Emergency declaration also increase significantly in states that had a prior presidential disaster declaration within the past 12 months and in states with higher levels of Total Taxable Resources. The odds of receiving an Emergency declaration increase by a multiple of approximately 126 for each one unit increase in Total Taxable Resources. States with a majority of House representatives who were of the same party as the president have a statistically significant decrease in the odds of receiving an Emergency declaration. In Model 2, higher state levels of Total Taxable Resources and a presidential disaster declaration within the previous 12 months increased the odds of receiving an Emergency declaration in the requesting state. The electoral vote weighted interaction effect failed to elicit any statistical significance for same party governors, senators, house of representative members, or reelection years.

For Major declaration requests in Model 1, a higher amount of Total Taxable Resources (TTR) and a larger number of electoral votes weighted were associated with a statistically significant decrease in the odds of receiving a Major disaster declaration, after controlling for the other explanatory variables. The odds of receiving a disaster declaration decrease by almost 10 percent for each one unit increase in the electoral votes weighted. Gubernatorial and presidential party similarity is another statistically significant factor influencing major disaster declaration success. The odds of receiving a disaster declaration increase by almost 33 percent for each request in a state with a governor of the same party as the president. In Model 2, the electoral vote weighted interaction effect failed to reveal any statistical significance for same party

governors, senators, house of representative members, or reelection years. There was no evidence of a statistically significant relationship between success in acquiring major disaster declarations and any of the remaining partisanship, biased vote-seeking, overwhelming need or FEMA region comparison predictor variables.

### **5.1.2 Marginal Disaster Declaration Requests**

The results for the restricted analysis of “marginal” disaster declaration requests from 1989-2012, which were limited to declarations resulting in less than \$24 million in total FEMA awards, are provided in Tables 18 and 19. This analysis also addresses the research questions: Political Partisanship/Biased Vote Seeking, Overwhelming Need, and Geographic Inequity Table 17 provides summary statistics for emergency and major disaster declaration requests and includes each of the variables used in the analysis. There were a total of 1,356 total disaster declaration requests in the restricted data set during the 1989-2012 time frame. This included 253 (18.7 percent) requests for emergency declarations and 1,103 (81.3 percent) requests for major disaster declarations. The incidence of presidential approval for all emergency and major disaster declaration requests under evaluation from 1989-2012, in the restricted dataset, was 76.1 percent (1,032/1,356). The presidential approval rate was 87.8 percent (222/253) for emergency declaration requests and 73.4 percent (810/1,103) for major disaster declaration requests.

Table 18: Descriptive statistics for variables analyzed: marginal model (N 1356)

Variable:	Emergency Disaster Declaration Request (N=253)				Major Disaster Declaration Request(N=1103)			
	Min	Max	Mean	SD	Min	Max	Mean	SD
Declaration	0	1	0.88	0.33	0	1	0.73	0.44
Governor	0	1	0.49	0.50	0	1	0.48	0.50
Senate	0	1	0.34	0.48	0	1	0.33	0.47
House	0	1	0.50	0.50	0	1	0.46	0.50
Senate FEMA Oversight	0	1	0.70	0.46	0	1	0.66	0.47
House FEMA Oversight	0	1	0.63	0.48	0	1	0.60	0.49
Electoral Vote weighted	0.85	52.07	10.05	9.42	0.85	52.34	9.09	9.34
Reelection Year	0	1	0.12	0.33	0	1	0.17	0.38
Recent Declaration	0	1	0.74	0.44	0	1	0.74	0.44
State Poverty Rate	6	26	13.03	3.48	6	26	13.37	3.61
TTR Index	0.67	1.6	0.99	0.18	0.67	1.73	0.96	0.17
FEMA I	0	1	0.22	0.42	0	1	0.11	0.31
FEMA II	0	1	0.10	0.30	0	1	0.04	0.20
FEMA III	0	1	0.09	0.28	0	1	0.09	0.29
FEMA IV	0	1	0.18	0.39	0	1	0.19	0.40
FEMA V	0	1	0.10	0.30	0	1	0.12	0.33
FEMA VI	0	1	0.13	0.34	0	1	0.15	0.35
FEMA VII	0	1	0.06	0.23	0	1	0.10	0.30
FEMA VIII	0	1	0.06	0.23	0	1	0.07	0.26
FEMA IX	0	1	0.06	0.24	0	1	0.05	0.21
FEMA X	0	1	0.01	0.11	0	1	0.07	0.26

Multivariate logistic regression was utilized to investigate the statistical effect of the aforementioned partisanship, biased vote-seeking and “overwhelming” need characteristics, after including the variables in separate models for emergency and major disaster declaration requests resulting in FEMA awards for less than \$24 million. The same criteria were applied for the “marginal” model analysis as were utilized in the full analysis of “all disaster declarations.” The logit coefficients and odds ratios from the multivariate logistic regression models are presented in Table 19. The log likelihood (chi- square) test indicated overall significance for both the emergency disaster declaration request model ( $p < 0.001$ ) and for the major disaster declaration request model ( $p < 0.001$ ). About 90 percent of the observed declarations and denials (turndowns) were correctly predicted or classified as declarations or denials (turndowns) by the

multivariate logit model for emergency requests and 75 percent were correctly classified by the model for major requests. Collinearity diagnostics, including variance inflation factor (VIF), tolerance, and condition indices, indicated no significant evidence of multicollinearity between the explanatory variables in either model.

Table 19: Logit coefficients & odds ratios: multivariate analysis of “marginal” disaster declaration requests

Variable	Emergency Disaster Declaration Request				Major Disaster Declaration Request			
	Model 1		Model 2		Model 1		Model 2	
	Coef	Odds Ratio	Coef	Odds	Coef	Odds Ratio	Coef	Odds Ratio
Governor	0.53	1.69	0.03	1.03	0.34*	1.41	0.36	1.43
Senate	2.01**	7.49	1.29	3.64	-0.36*	0.70	-0.29	0.75
House	-0.84	0.43	-0.49	0.61	-0.01	0.99	0.09	1.09
Senate FEMA Oversight	0.07	1.07	0.11	1.11	.03	1.03	0.01	1.01
House FEMA Oversight	0.26	1.29	0.26	1.30	-0.29	0.75	-0.29	0.75
Electoral Vote wtd	-0.04	0.96	-0.06	0.94	-0.04**	0.96	-0.04	0.96
Reelection Year	0.89	2.44	-0.44	0.64	0.38	1.46	0.05	1.05
Recent Declaration	1.20**	3.32	1.26**	3.52	-0.10	0.91	-0.11	0.90
State Poverty Rate	-0.08	0.92	-0.08	0.92	-0.02	0.98	-0.03	0.98
TTR Indexed to US	4.45*	85.83	4.12	61.50	-1.69**	0.19	-1.74**	0.18
Gov* Elec Vote wtd	-	-	0.17	1.19	-	-	0.03	1.03
Sen* Elec Vote wtd	-	-	0.04	1.05	-	-	0.00	1.00
House* Elec Vote wtd	-	-	0.09	1.09	-	-	-0.01	0.99
Reelect* Elec Vote wtd	-	-	-0.03	0.97	-	-	-0.01	0.99
FEMA Region 1	-	-	-	-	0.43	1.54	0.44	1.56
FEMA Region 2	-	-	-	-	0.70	2.02	0.68	1.98
FEMA Region 3	-	-	-	-	0.66	1.93	0.66	1.93
FEMA Region 4	-	-	-	-	-0.12	0.89	-0.12	0.89
FEMA Region 5	-	-	-	-	0.25	1.28	0.23	1.26
FEMA Region 6	-	-	-	-	-0.13	0.88	-0.11	0.89
FEMA Region 8	-	-	-	-	0.56	1.74	0.54	1.71
FEMA Region 9	-	-	-	-	0.50	1.64	0.46	1.58
FEMA Region 10	-	-	-	-	0.57	1.77	0.55	1.73

\* p < 0.05. \*\* p < 0.01

For Emergency declaration requests in Model 1, the success in acquiring declarations is significantly influenced by senate and presidential party similarity, after controlling for the other explanatory variables. The odds of acquiring an Emergency declaration increase for each emergency request in states where both U.S. senators were from the same party as the president. The odds of receiving an Emergency declaration also increase significantly in states that had a prior presidential disaster declaration within the past 12 months and in states with higher levels of Total Taxable Resources. The odds of receiving an Emergency declaration increase by a multiple of approximately 86 for each one unit increase in Total Taxable Resources. In Model 2, a presidential disaster declaration within the previous 12 months increased the odds of receiving an Emergency declaration in the requesting state. The electoral vote weighted interaction effect failed to elicit any statistical significance for same party governors, senators, house of representative members, or reelection years.

For major declaration requests in Model 1 of the “marginal” declaration analysis, increases in Total Taxable Resources (TTR), increases in a state’s weighted electoral votes, or the presence of both U.S senators from the same party as the president in the requesting state was associated with a statistically significant decrease in acquiring a Major disaster declaration. There was a significant increase in the odds of acquiring a Major declaration in states where the governor and president represented the same political party. The odds of receiving a Major declaration increased by 41 percent in states where governors were of the same political party as the president in the year of the request for a PDD. In Model 2 of the “marginal analysis, the decreased odds of receiving a major disaster declaration were statistically significant for states with a larger TTR index. There was no evidence of a statistically significant relationship

between success in acquiring major disaster declarations and any of the remaining partisanship, biased vote-seeking, overwhelming need or FEMA region comparison variables.

## **5.2 Results: Research Question 4**

The results of the analysis of the incidence of post-disaster stress-related disease incidence pertaining to the research question, Disaster Recovery and Individual/Community Health and Well-Being, are provided in Tables 20 and 21. Table 20 provides summary statistics for the counts of office/outpatient visits for each grouping category and each time frame used in the analysis. This table indicates that the mean number of office/outpatient visits for stress-related illness in the respective areas under analysis (Denial, Declared, Control) were highest for somatic conditions and lowest for diagnoses associated with dementia. The socio-demographic profile of the study area is evidenced by the higher mean observations for females, Medicare recipients < 80 years, self-identified White individuals, and residents who were not low income dual-eligible for Medicaid. The PDD denied area received an average \$4.61 per capita in 2008-2009 federal grant dollars compared to \$2.80 for the PDD declared area and \$3.01 for the control region.

Negative binomial regression was utilized to investigate the statistical effect of the aforementioned characteristics related to individual/county level demographics and disaster declaration request status (denial, declaration, control), after including the variables in separate models for emergency for each disease grouping category. Collinearity diagnostics, including variance inflation factor (VIF), tolerance, and condition indices, indicated no significant evidence of multicollinearity between the explanatory variables in either model. Graphic representations of the mean number of visits for each diagnostic grouping and time frame are



provided in Figure 4. The mean number of visits per capita for each area (denied, declared, and control) and each time frame (0-6 month pre-event, 0-6 month post-event, 6-12 month post-event, and 12-18 month post-event) are provided for each stress-related diagnostic grouping. The overdispersion of zero visit counts is evident in the small values for the means in several of the diagnostic categories. This overdispersion is associated with the fact that the majority of individuals in the study area did not utilize health services for the stress-related and non-stress-related disease diagnoses that were included in the analysis. As previously noted, most disaster survivors do not suffer long term health related impacts or require professional consultation. The National Comorbidity Survey Replication reports a 6 month prevalence rate of 13.9 percent for anxiety disorders in the general elderly population aged 65–74 and 10.4 percent for those aged 75-85 (Gum, King-Kallimanis, and Kohn 2009). Wang et al. (2005) report a combined 12.5 percent 12-month prevalence rate for health care provider visits related to DSM IV anxiety and depression diagnoses in the general population. The rural Illinois combined study area exhibited an 8.3 percent 24-month prevalence rate for all anxiety and depression diagnoses included in the study as reported in the CMS data files for individuals who were 65 years of age or older. This finding is consistent with the observation of a high count of zero visits in the six month time frames under analysis in the dissertation study area and is indicative of the previously recognized lower utilization rate for mental health services by the rural elderly (Wang et al. 2005).

The negative binomial distribution requires a log link function to allow the response variables to vary linearly with the predicted values. This approach produces estimates of the means and not the probability of the relationship between the predictor and response variables and odds ratios are not created. The coefficients and standard error estimates from the multivariate regression models are presented in Table 21. The simultaneous examination of all

explanatory variables in a single model allows for consideration of the effects of each variable while controlling for the effects of the remaining variables.

Table 20: Descriptive statistics stress-related disease

Variable:	Denial (N=4715)				Declaration (N=4665)				Control (N=2620)			
	Min	Max	Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	SD
Anxiety/Depression pre 0-6m	0	41	0.14	0.91	0	25	0.16	0.81	0	14	0.16	0.75
Anxiety/Depression post 0-6m	0	17	0.15	0.74	0	22	0.17	0.79	0	12	0.18	0.76
Anxiety/Depression post 6-12m	0	18	0.18	0.90	0	33	0.17	0.87	0	11	0.17	0.74
Anxiety/Depression post 12-18m	0	51	0.20	1.09	0	19	0.20	0.89	0	25	0.24	1.11
Acute Vascular pre 0-6m	0	32	0.17	1.11	0	36	0.20	1.21	0	34	0.17	1.20
Acute Vascular post 0-6m	0	55	0.24	1.50	0	41	0.19	1.36	0	20	0.22	1.27
Acute Vascular post 6-12m	0	28	0.21	1.26	0	16	0.16	0.90	0	17	0.16	0.99
Acute Vascular post 12-18m	0	24	0.20	1.12	0	19	0.19	1.01	0	16	0.16	0.94
Dementia pre 0-6m	0	13	0.06	0.52	0	11	0.06	0.49	0	11	0.05	0.42
Dementia post 0-6m	0	11	0.08	0.59	0	29	0.08	0.72	0	12	0.05	0.45
Dementia post 6-12m	0	13	0.09	0.61	0	21	0.09	0.61	0	9	0.06	0.47
Dementia post 12-18m	0	13	0.10	0.66	0	13	0.09	0.60	0	13	0.07	0.55
Gastrointestinal pre 0-6m	0	12	0.23	0.81	0	14	0.22	0.84	0	9	0.18	0.66
Gastrointestinal post 0-6m	0	15	0.25	0.84	0	11	0.27	0.93	0	8	0.18	0.72
Gastrointestinal post 6-12m	0	10	0.24	0.84	0	13	0.24	0.86	0	8	0.21	0.75
Gastrointestinal post 12-18m	0	15	0.24	0.83	0	17	0.25	0.93	0	7	0.20	0.74
Somatic pre 0-6m	0	38	0.88	2.44	0	49	1.06	2.67	0	31	0.99	2.66
Somatic post 0-6m	0	32	1.06	2.65	0	35	1.15	2.82	0	29	1.03	2.46
Somatic post 6-12m	0	43	1.03	2.70	0	34	1.07	2.62	0	28	0.92	2.49
Somatic post 12-18m	0	54	1.09	2.90	0	34	1.15	2.63	0	33	1.05	2.73
Control pre 0-6m	0	9	0.02	0.25	0	8	0.02	0.20	0	6	0.02	0.23
Control post 0-6m	0	4	0.02	0.18	0	10	0.02	0.22	0	3	0.01	0.15
Control post 6-12m	0	9	0.02	0.22	0	8	0.02	0.21	0	6	0.02	0.23
Control post 12-18m	0	11	0.02	0.26	0	6	0.02	0.23	0	7	0.02	0.22
Gender	1	2	1.60	0.49	1	2	1.60	0.49	1	2	1.59	0.49
Lack of Access	-0.11	0.11	-0.05	0.06	-0.10	0.16	0.00	0.06	-0.07	0.18	-0.01	0.07
Federal Grants per capita	2.24	15.48	4.61	2.24	1.32	5.01	2.80	0.98	1.80	5.09	3.01	1.01
Extreme Elderly >80	0	1	0.30	0.46	0	1	0.33	0.47	0	1	0.31	0.46
Social capital	-0.46	2.09	0.87	0.56	-1.16	1.96	0.93	0.65	-0.43	1.83	1.06	0.60
Race	0	1	0.97	0.16	0	1	0.99	0.11	0	1	0.99	0.09
Low Income	0	1	0.21	0.41	0	1	0.20	0.40	0	1	0.18	0.38
IA Damages	0.01	60.68	3.39	8.75	0	317	31.43	51.81	0.1	0.1	0.01	0.00

The relationship between the observed means for the denied, declared, and control categorical variable that are visualized in the graphs (Figure 4) are bivariate representations. The beta coefficients in the negative binomial random effects model are calculated based on the influence of the explanatory variables.

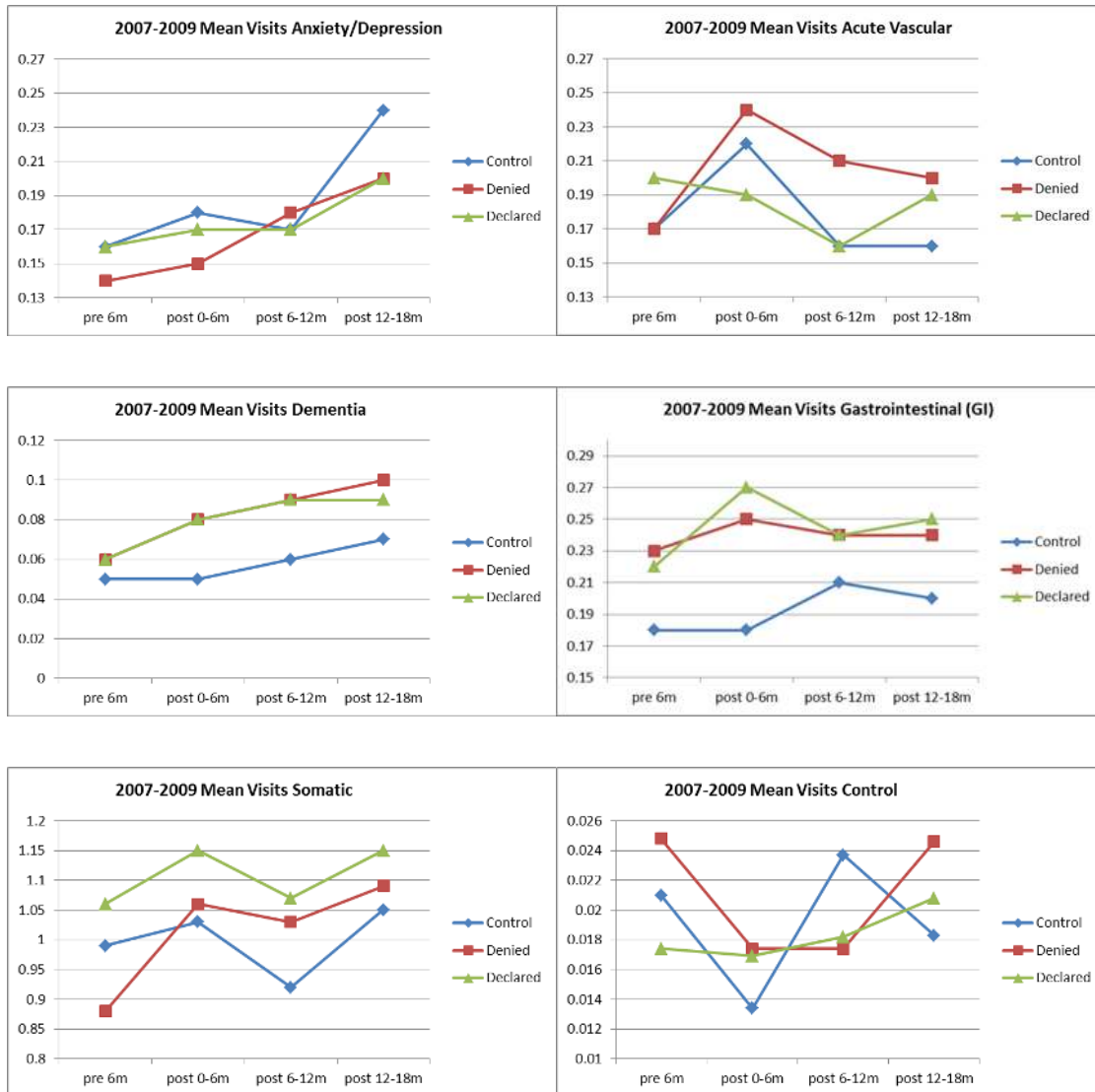


Figure 4: Study area graphs: mean number of visits for stress-related illness

Table 21: Negative binomial random coefficient model: pre-disaster comparison 2007-2009

Variable	Anx/Dep		Acute Vasc		Dementia		G.I.		Somatic		Control	
	Coef	S.E	Coef	S.E.	Coef	S.E.	Coef	S.E	Coef	S.E.	Coef	S.E.
Denied to Control Time 1	-0.01	0.12	-0.12	0.20	0.22	0.19	0.13	0.12	0.09	0.07	0.11	0.37
Time 2	0.22*	0.12	-0.02	0.20	0.32*	0.19	-0.15	0.12	0.20***	0.07	-0.61*	0.35
Time 3	-0.03	0.12	0.04	0.21	0.28	0.19	-0.06	0.12	0.18**	0.07	0.13	0.35
Declared to Control Time 1	-0.12	0.12	-0.6***	0.20	0.10	0.19	0.24*	0.12	-0.04	0.07	0.41	0.38
Time 2	0.03	0.12	-0.34*	0.20	0.29	0.19	-0.02	0.12	0.04	0.07	-0.13	0.36
Time 3	-0.13	0.12	-0.10	0.20	0.18	0.19	0.00	0.12	0.04	0.07	0.30	0.37
Declared to Denied Time 1	-0.04	0.10	-0.47***	0.17	-0.12	0.15	0.11	0.10	-0.13**	0.06	0.30	0.31
Time 2	-0.19*	0.10	-0.33***	0.17	-0.04	0.15	0.13	0.10	-0.15**	0.06	0.48	0.31
Time 3	-0.10	0.10	-0.14	0.17	-0.10	0.15	0.07	0.10	-0.15**	0.06	0.17	0.30
Gender	-0.95***	0.08	0.46***	0.90	-0.24	0.16	-0.4***	0.05	-0.45***	0.03	0.13	0.11
Lack of Access	-2.07***	0.62	-0.01	0.73	0.66	1.28	-0.56	0.44	0.09	0.30	-0.17	0.95
Federal Grants per cap	0.02	0.02	-0.01	0.03	0.00	0.05	-0.01	0.02	-0.01	0.01	0.03	0.04
Extreme Elderly >80	-0.16**	0.07	0.60***	0.09	-3.09***	0.17	-0.01	0.06	-0.08*	0.04	0.27**	0.13
Social capital	-0.01	0.06	0.01	0.07	0.03	0.14	0.02	0.05	0.05	0.14	0.02	0.10
Race	-1.46***	0.35	-0.10	0.33	0.42	0.56	0.04	0.20	-0.33**	0.14	-1.56**	0.66
Low Income	-0.70***	0.19	-0.68***	0.11	-1.04***	0.19	-0.35***	0.06	-0.01	0.05	0.13	0.15
IA Damages	0.00	0.00	0.00	0.00	0.01**	0.00	0.00	0.00	0.00	0.00	0.00	0.00

\*p < 0.10 \*\* p < 0.05 \*\*\* p < 0.01

The negative binomial random coefficient model revealed a statistically significant increase in the count of visits for diagnoses related to anxiety and depression, dementia, and somatic disorders and a statistically significant decrease in the visit count for the control group of non-stress-related disorders in the disaster request denied area compared to the control area, during the 6-12 month post-event time frame. The statistically significant increase persisted for somatic disorders in the denied versus control area for the 12-18 month post event time frame. The findings associated with the comparison of the disaster request declared to denied group revealed a significantly lower count of visits for anxiety and depressive disorders in the declared

group during the 6-12 month time frame; for acute vascular disorders in the 0-6 month post event and 6-12 month post event time frames; and in the 0-6 month, 6-12 month, and 12-18 month post event time frames for somatic disorders. The disaster request declared group compared to the control group exhibited a significantly lower count of visits for acute vascular conditions in the 0-6 post event and 6-12 month post event time frames and a higher visit count for gastrointestinal disorders in the 0-6 month post event period.

The evaluation of gender as a predictor for office/outpatient visits revealed a statistically significant lower number of visits for men in the anxiety/depression, gastrointestinal, and somatic diagnostic groups and higher visit count in the acute vascular grouping. A higher Z score for lack of access, which was equivalent to poorer levels of access to health services, was statistically significant for a lower visit count in the anxiety/depression grouping. Individuals who were less than 80 years old had a significantly lower count of office/outpatient visits in the anxiety/depression, dementia, and somatic diagnostic groupings and a higher visit count for acute vascular and control diagnostic groupings in comparison to individuals who were 80 years of age or older. Study participants who were self-categorized as non-white exhibited a significantly lower count of visits than their white counterparts for anxiety/depression, somatic, and control diagnoses. Individuals who were not low income and Medicaid eligible had a statistically significant lower count of visits for the anxiety/depression, acute vascular, dementia, and gastrointestinal (GI) diagnostic groupings than their low income, Medicaid eligible, counterparts. Increased per capita property damages were a significant predictor of a higher visit count in the dementia grouping. There was no evidence of a statistically significant relationship in any of the other diagnostic groupings or individual/county level demographic comparisons.

### 5.3 Discussion

The consideration of explanatory variables associated with political partisanship in the analysis of all disaster declarations from 1989-2012 provided some evidence of a significant relationship between same party status and a state's success in obtaining a disaster declaration. This may be indicative of partisan decision making and biased political motivation by the president in the distribution of federal relief under the provisions of the Stafford Act. However, there was offsetting evidence of a decreased success rate regarding same party legislators in the House of Representatives. This is contrary to any premise of partisan behavior that is consistent with public choice, distributive, or legislative models. The restricted "marginal" model provides additional conflicting findings with respect to evidence of political partisanship in the distribution of presidential disaster declarations. The significant relationship between senatorial/presidential party similarity and success in acquiring Emergency declarations and between governor/presidential party similarity and success in acquiring Major declarations persists, but the relationship between senators and presidents of the same party becomes significantly associated with a failure to obtain a Major disaster declaration. These contrasting findings with respect to the political partisanship variables suggest a relationship that may not have any causal role with respect to presidential decision making. The absence of significant statistical associations for the partisan and geographic inequity predictor variables including FEMA senate and house oversight committee membership, FEMA regions, and any of the interactions between weighted electoral votes and same party status of the president and governors, senators, or house members suggests a limited role for partisan bias in presidential disaster declaration decision making. There is no statistically significant evidence that the

president showed preference to governors, senators, or house members of the same party based on weighted electoral votes.

It is important to acknowledge the ecological fallacy associated with the limited findings of success in acquiring a PDD and same party status between the aforementioned elected officials. Every president who held office during the study period (1989-2012) issued disaster request denials to states where governors, both senators, and/or the majority of house members were from the same political party as the president. Statistical significance must be differentiated from statistical unanimity and any conclusion of partisanship based on same party status is muted by the empirical observations of denials for disaster requests in same party states in every year of the analysis. It is also worth noting that in an era of exposes, when former government employees and employees of government contractors are revealing a plethora of previously privileged information relating to the inner workings of the federal government, there is no evidence of documented political partisanship, biased-vote seeking, or geographic inequity by any former FEMA or DHS operative with respect to presidential disaster declaration decision making. Former FEMA director, Michael Brown (2011), whose name has been indelibly imprinted in our minds as a symbol of the flawed federal response to Hurricane Katrina, published an insightful self-explanatory of the event titled *Deadly Indifference-The Perfect (Political) Storm-Hurricane Katrina, The Bush White House, and Beyond*. Brown makes no attempt to hide his contempt for people at the highest levels of the federal government and dedicates a chapter of his book to “Disaster Politics”. However, there is not a single reference in the book to any recollection of privilege or political impropriety in the distribution of disaster declarations from a man who served as the final conduit for disaster declaration recommendations to the president from 2003-2005.

Contrary to the findings of prior research, the consideration of predictor variables associated with biased vote-seeking failed to reveal significant evidence that Emergency or Major disaster declarations are more likely to be issued during presidential reelection years in the analysis of all disaster declaration requests as well as in the analysis of “marginal” requests. Although emergency declarations may represent a potentially marginal type of presidential declaration based on comparative total federal fiscal obligation and it has been noted that emergency declarations offer governors a more “flexible path for securing federal help” (Sylves 2008, 96), there is no evidence of preferential designation of emergency declarations during reelection years in the post-Stafford Act time frame (1989-2012) for the analysis of all disaster declarations or in the analysis of “marginal” declarations. The absence of a significant relationship between electoral votes weighted in Emergency declarations and the statistically significant decrease in the success rate for acquiring a Major disaster declaration in states with a higher level of electoral votes weighted is contrary to the prior published conclusions of biased vote-seeking behavior in this aspect of presidential disaster declaration decision making.

Regarding “overwhelming need” variables, the Stafford Act makes specific provisions for presidential discretion in the consideration of requests from areas that have been impacted by recent disasters. The increase in emergency declarations in areas that have had prior declarations within the past 12 months supports the consideration of this extenuating circumstance by FEMA and/or the president in the decision making process in both the marginal analysis and the analysis of all declaration requests. The state poverty level was not significantly associated with presidential disaster declaration success for emergency or major disaster declaration requests in any model. The evidence of a negative relationship between Total Taxable Resources (TTR) and the success rate in acquiring Major declarations in the full and marginal analysis provides



evidence that the previously noted recommendations of the GAO are empirically evident in the review of major disaster requests from 1989-2012. The distribution of a higher percentage of declarations to states with a lower level of TTR may be indicative of a needs-based application of discretionary decision making by the president. However, with regard to Emergency declarations, states with higher levels of TTR are significantly more likely to achieve success. This is a contrary indicator that may be associated with the specific provisions of the Stafford Act that have provided categorical Emergency declarations for record snowfall events in states such as New York and Massachusetts that, coincidentally, have relatively higher levels of per capita Total Taxable Resources.

The concept of coincidental declarations requires further discussion. Geographic location is an important consideration in the debate pertaining to political impropriety in the presidential decision making process. However, some states are simply more prone to disaster events than others. It is a consequence of physical location and it occurs independent of the state's status with respect to electoral votes or elected officials. Coastal states are more prone to hurricanes than inland states. Many states in the Mississippi River basin are subject to a higher incidence of tornadoes and flooding. Florida has a recent history of closely contested presidential elections, but the severe losses from the 2004 hurricane season led to multiple disaster declarations that were not a result of President Bush's quest for reelection or the calculated machinations of patronage in a "battleground" state. The use of a marginal declaration model in this dissertation has provided a method for filtering the large scale events that occur based on geographic predisposition and offers a perspective on the smaller events that have been the focus of speculation related to political partisanship and biased vote-seeking by the president.

The consideration of explanatory variables associated with disaster recovery and individual/community health and well-being provide unique insights into the progression of stress-related disease in the disaster declared and denied areas of Illinois after the 2008 storm and flood events. The statistically significant comparative increase in the incidence of office/outpatient visits for anxiety/depression, dementia, and somatic complaints in the denied area reveals a progression of stress-related disease at a point in time (6-12 months post-event) that is consistent with the “disillusionment” phase of disaster recovery (U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration 2000) (See Figure 5). Community cohesion and the altruistic efforts of others may mitigate the onset of stress-related disorders during the early weeks or months after a disaster, but as individuals begin to fully assess the loss of resources that has occurred as a result of the disaster, psychological and physiological symptoms may become more prominent. This delayed onset of stress-related symptomatology has been noted in prior studies (Phifer, Kaniasty and Norris 1988; Phifer and Norris 1989; Tang 2007).

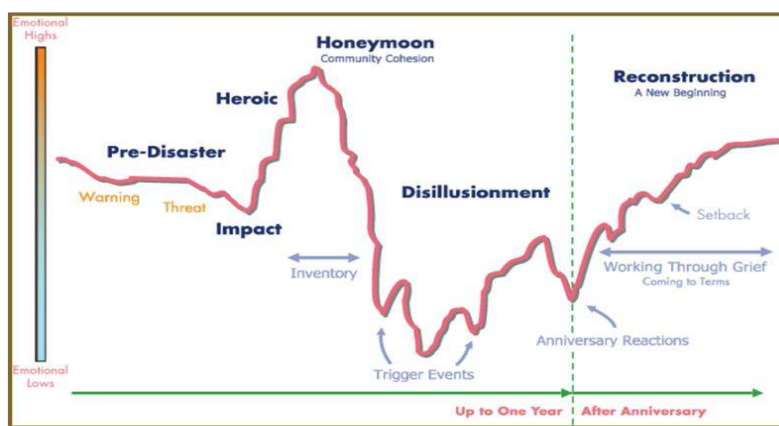


Figure 5: Phases of disaster recovery (U.S. Department of Health and Human Services 2000)

The statistically significant decrease in visits for the non-stress-related disorder control group in the denied area versus the control area of counties that did not experience a 2008 disaster is an important consideration. This finding indicates that the individuals who resided in the denied counties were not seeking medical services for this representative group of non-stress-conditions at a higher level than their counterparts in control counties. A potential causal link for the observed increase in stress-related visits in the disaster declaration denied area is supported by this contrasting finding. It is statistically evident that the increase in stress-related visits was not attributable to any general trend in the disaster denied area to seek medical services at an increased rate compared to the control or denied areas. The statistically significant increase in visits for somatic conditions persist in the denied to control 12-18 month post event time frame and a significant decrease in visits for somatic conditions exists in all post-event time frames for the comparison of the disaster declared to disaster denied areas. This statistically significant decrease is evident for acute vascular condition visits in both the declared to denied areas and the declared to control areas for the 0-6 month and 6-12 month post-event time frames. There were no stress-related disease categories or time frames in which the control or declared areas had a statistically significant higher count of visits than the disaster declaration denied area of Southern Illinois. The only stress-related disease category and time frame in which the disaster declared area had a significantly higher visit count than the control area was from 0-6 months post-event for gastrointestinal disorders. The abundant evidence of statistically significant higher counts of visits for stress-related disorders in multiple categories in the denied area compared to the control and declared areas is supported by the noted decrease in non-stress-related visits and the onset of the increase in stress-related visits in a time frame that is consistent with the “disillusionment” phase of recovery.

Prior research has acknowledged the potential for prior experience to mitigate the adverse psychological effects of disasters (Norris and Murrell 2008). This concept of “inoculation” serving as an adaptation mechanism provides valuable insight into human capacities to manage stressful experiences. All counties in the study area had received a presidential flood declaration at least once since 1981, but no county had been issued a gubernatorial or presidential disaster declaration for Individual Assistance at any point within the prior 46 months. The disaster declared and denied counties were each well-versed in flood events ranging from the 1000 year Ohio River flood of 1937 to the 1993 Mississippi River floods. The common exposure to prior disasters in all study area counties provided a means of controlling for the “inoculation” effect in the sampled population.

Individual level socio-demographic characteristics were considered for each stress-related grouping and combined to produce a cumulative assessment of all time frames in the analysis. There was a statistically significant lower count of visits for men than women for anxiety/depression, gastrointestinal, and somatic disorders. This is not necessarily indicative of a gender based lower level of stress-related illness in elderly men. Prior studies have revealed that men are less likely than women to seek help for a variety of medical conditions and the social stigma related to mental health services in rural areas has been observed as an area of particular concern for men who historically place high value on “self-reliance and rugged individualism” (Hoyt, et al. 1997, 466). The higher incidence of acute cardiovascular disorders in men versus women may be consistent with the acuity of ischemic conditions and the resultant prioritized help-seeking and the observed higher incidence of angina in males (Go, et al. 2013).

The lack of access to health services was statistically significant for a lower count of visits for anxiety/depression and this may be indicative of the reluctance to acknowledge a need

for professional intervention for these psychological disorders combined with the previously noted rural stigma associated with mental illness (Fox, Blank, Berman et al. 1999; Letvak 2001). Federal grant dollars and social capital were not associated with any statistically significant difference in visits for any grouping. The extreme elderly (> 80 years) in the study had a statistically significant higher count of visits for anxiety/depression, dementia, and somatic illnesses and a lower count for the control category. The findings in the dementia and somatic categories are consistent with age related prevalence of related conditions. The higher incidence of visits for anxiety/depression in the extreme elderly in this study is supported by prior research noting an increased alteration in normal routine, a higher level of personal resource loss, and a greater tendency to live in damaged dwellings in the elderly age group after disasters (Kilijanek and Drabek 1979; Phifer and Norris 1989).

Non-white racial individual self-identification was associated with a significantly lower count of visits for anxiety/depression, somatic, and control grouping disorders. Individuals who were not dual eligible for Medicaid, based on low income status, exhibited a statistically significant lower count of visits in the anxiety depression, acute vascular, dementia, and gastrointestinal groupings. A lower utilization rate for medical services by non-white individuals has been previously documented in the peer-reviewed literature (Gornick et al. 1996; Kaiser Family Foundation 1999). Cultural preferences and precedents, and a lack of providers who are familiar with the needs and personal characteristics of the non-white community, contribute to this lower utilization rate (Wang 2005; Salkowe 2010). Lower income status has been associated with less access to health services due to a lack of adequate health insurance, but the sample population was dual eligible for both Medicaid and Medicare office/outpatient services. Given the availability of insured medical services, the higher count of visits for individuals based on

socio-demographic characteristics associated with gender, income, and age supports the findings of prior researchers regarding the long term consequences of poverty and sociocultural marginalization on psychological and physiological well-being (Barr 2008; Shonkoff, Boyce and McEwen 2009; McEwen and Gianaros 2011).

#### **5.4 Summary**

The findings of this chapter provide contrasting evidence of a statistically significant relationship between predictor variables related to partisanship, biased vote seeking, and overwhelming need in the full and marginal analyses of disaster declarations. There is no evidence of any significant relationship between house/president same party status, FEMA house or senate oversight committees, FEMA regions, reelection year, electoral votes weighted, or any of the interaction terms and increased success in acquiring a disaster declaration. Several stress-related disease categories are associated with an increased count of office/outpatient visits for the disaster request denied category compared to the declared or control categories. Individual level socio-demographic variables such as gender, income, and age are significantly associated with a higher incidence of visits for stress-related disease. These findings provide sufficient evidence to support the reconsideration of prior research findings related to political impropriety in the distribution of disaster declarations and emphasize a focus on the reformulation of federal disaster policy to provide a more equitable consideration of high stress-related disease risk populations in rural areas of the U.S.

## **CHAPTER 6:**

### **CONCLUSIONS**

#### **6.1 An Assessment of the Research Findings**

This dissertation has expanded upon the body of research pertaining to political influence and presidential disaster declarations by the independent and comparative assessment of spatial equity in the implementation of the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (P.L. 100-707) and by the consideration of a wide variety of explanatory factors that are indicative of political partisanship, biased vote-seeking, overwhelming need, geographic preference, and disaster recovery. A case study of counties in Illinois that were affected by storm and flood events in 2008 was performed to assess health-related disaster recovery in areas that had received differential access to the federal resources that are available under the provisions of the Stafford Act. The following hypotheses were considered in the dissertation:

1. Presidential Stafford Act disaster declarations and denials in the U.S. are not influenced by political partisanship or biased vote seeking behavior
2. Presidential Stafford Act disaster declarations and denials in the U.S. are influenced by the "overwhelming" need of a state/county.
3. There is no evidence of geographic inequities in the distribution of presidential disaster declarations and denials under the provisions of the Stafford Act in the U.S. Geographic disparities in the distribution of presidential disaster declarations and denials under the

provisions of the Stafford Act are based on the differential prevalence of natural hazards in certain regions of the U.S.

4. The recovery from similar types and scales of disaster events is the same in presidential declared and presidential denied counties of Illinois in 2008 under the provisions of the Stafford Act.

Prior published research has indicated the need for incorporating several of the variables employed in this analysis to address an important gap in the literature pertaining to presidential disaster declaration decision making. Some of the findings differ substantially from the conclusions of related previous studies. The complexities of intergovernmental relations between state and federal legislative and executive branches and bureaucracies is associated with an environment that produced statistical evidence of some degree of partisanship and biased vote-seeking in this analysis. However, these findings are limited to the statistically significant relationships between governor/ presidential party similarity and Major disaster declaration success and the conflicting findings associated with U.S. senate/presidential party similarity and Emergency and Major disaster declaration success rates. Conflicting findings were also present in the house/presidential party similarity and U.S. senate/presidential party similarity variables for Emergency declarations. The evidence of a significant relationship between states with a lower Total Taxable Resource index and success in acquiring Major disaster declarations and states with recent multiple disasters and success in acquiring Emergency disaster declarations support the concept of presidential discretionary disaster declaration decision making that is attentive to need and public interest.



The post-Stafford Act time frame has been associated with a marked increase in the incidence and frequency of disaster declarations in the U.S. Multivariate logistic regression analysis of every gubernatorial request for a presidential disaster declaration and of gubernatorial requests for “marginal” events from 1989-2012 failed to reveal any evidence of a statistically significant association between an increased likelihood of success in acquiring presidential disaster declarations and U.S. House of Representatives/presidential party similarity, Senate FEMA oversight committee membership, House FEMA oversight committee membership, FEMA region location, reelection year, or weighted electoral votes. In fact, an increase in weighted electoral votes was significantly associated with less success in acquiring a Major disaster declaration in the full and marginal analysis of disaster declarations. This observation is antithetical to the claims of prior researchers pertaining to the political motivations of the president in the disaster declaration decision making process. There is insufficient evidence to support broad claims of spatial inequity in the distribution of federal disaster declarations based on political patronage or preference. The research hypotheses pertaining to partisanship, biased-vote seeking, overwhelming need, and geographic inequity are supported by the findings of this research.

Partisanship and biased vote-seeking behavior are inherent aspects of our political system with a longstanding history that has often raised concerns regarding effective governance (Apperson 2006). The risks and rewards associated with incentive based partisan behavior have been noted in prior studies (Kingdon 2003, Muirhead 2003). Excessive allegiance to members of similar parties creates the danger of inequitable distribution of public services and a biased enactment and implementation of legislation. Indiscriminate and biased vote-seeking behavior creates similar vulnerabilities and engenders a concept of a government that is subservient to a

public choice model that places personal gain over public good. The consideration of partisanship and biased vote-seeking as being forces of primacy in time of disaster provides a particularly egregious scenario. It is evident that both rational choice and reasonable decision making are utilized in the recommendations of the president. Presidential disaster declaration decision making does not appear to be primarily motivated by the political influences associated with public choice, distributive, or legislative theory in this analysis based on the absence of significant positive findings for the majority of predictor variables, including several variables that were determined to be indicators of political influence in prior studies such as reelection and weighted electoral votes.

The increase in the incidence of presidential disaster declarations and disaster relief funding since the onset of the Stafford Act is associated with changes in intergovernmental relations and policy implementation that are independent of political partisanship and biased vote-seeking. Rubin (2007) and Birkland (1996) have acknowledged the role of media coverage and large scale disasters as focusing events that may have influenced the declaration process after the initiation of the Stafford Act. The devolution of federal oversight and funding for a vast array of state initiatives and the discontinuation of federal general revenue sharing grants during the 1980s may have encouraged a subsequent increase in gubernatorial disaster declaration requests due to diminished state resources. State and federal fiscal constraints combined with the established trend of continued increases in federal fiscal support during and after disaster events will necessitate changes in the Stafford Act and in the methods utilized to determine eligibility for federal assistance. It is essential that legislators and bureaucrats are informed regarding all of the variables that appear to influence the decision making process. Effective action is contingent on establishing a disaster policy agenda that is attentive to the causal aspects of any apparent

disparity in the distribution of federal disaster relief. Based on the findings of this study, it is advisable that we reassess the research emphasis on broad claims of political partisanship and biased vote-seeking in presidential disaster declaration decision making and focus on the post event evaluation of community recovery in disaster declared areas. This will provide an evidence-based approach to analyzing the effectiveness of the Stafford Act and allow for policy revisions to be applied that will provide for the effective and efficient use of federal dollars for disaster stricken regions of the U.S.

In that regard, the 2008 Illinois case study was undertaken to obtain new insights on disaster recovery in communities that received differential access to federal resources under the provisions of the Stafford Act. The case study revealed a statistically significant higher incidence of stress- related office/outpatient visits for individuals based on the demographic characteristics of gender, income, and age. This provides stark evidence of the disproportionate burden of disease in subsets of the elderly population in the study area. The previously established correlates between poor health outcomes and low socioeconomic status are exemplified in this analysis.

The increased prevalence of stress- related disease visits in the disaster declaration request denied area of Southern Illinois compared to the control area and/or the declared area is a critical indicator that demands further analysis of the Stafford Act disaster declaration determination criteria. The Stafford Act provides for the consideration of special populations such as the elderly and the impoverished in the determination of need for an Individual Assistance declaration. However, the metric for determining an eligibility threshold for a disaster declaration based on “special population” status is not available. Southern Illinois has been designated as part of the Mississippi River Delta region, an area that has “the highest

concentration of disadvantaged populations in the country and faces profound concerns related to health, out-migration, and persistent poverty” (Delta Regional Authority 2013). It is difficult to define a more “special population” in a time of disaster when comparatively meager resources are further compromised and Individual Assistance is denied.

Small Business Administration loans have limited value to individuals in Southern Illinois who were literally and figuratively under water with respect to structural damages and mortgage obligations after the 2008 flood event. SBA loans require a verification of credit worthiness, which may be limited in low income areas, and without flood insurance or equity in a home, the additional burden of a loan may be untenable. An unrepaired flood-damaged vehicle may compromise the capacity for a sole-wage earner to work or for an elderly person living alone to attend to the daily routine that is essential to their sense of well-being. Supplemental grants from the federal government provided some respite to the disaster request denied communities, months to years after the disaster, but the restoration of material and emotional resources that is available through Individual Assistance grants for repairs of damaged property and immediate crisis counseling was denied.

The fact that the denial was issued to those communities and individuals who were at the greatest risk of suffering from the burden of stress-related diseases that may surface in the wake of disasters was not factored into the decision-making process. The empirical evidence from this analysis is a harsh testament to the potential consequences of the denial of the gubernatorial request for an Individual Assistance disaster declaration. The disproportionate progression of stress-related illness in Southern Illinois may have occurred regardless of the disaster, but the empirical evidence suggests a need to address what is an obvious spatial inequity, regardless of the causal origin. The increased prevalence of disease was concurrent with the disillusionment

phase of disaster recovery and the denial of a request for federal assistance under the provisions of the Stafford Act may have been the tipping point for those individuals who were already psychologically and physiologically compromised by a long-standing socioeconomic burden. Disaster recovery did not proceed in an equitable manner in the denied area of Southern Illinois.

The denial in this region after the 2008 disaster was based on a low “concentration of damages” (Illinois Emergency Management Agency Official 2012). However, rural areas are inherently prone to a lower concentration of damages based on population density and agrarian land use patterns. Illinois Governor Pat Quinn addressed the procedural inequity associated with concentration of damages in stating, “The federal law that FEMA follows is fundamentally unfair and needs reform...rural areas can get ignored” (Berg 2014). Charity was available after the 2008 event in Southern Illinois, but the reluctance to accept it was noted by several members of the emergency response community (anonymous personal communication 2011, 2012). Preliminary Damage Assessments from Southern Illinois would not have referenced an overwhelming need for federal support in an area where self-reliance and privacy are highly valued, but the consequences are empirically evident in the disproportionate disease burden of the disaster request denied region. Survivors of disasters may initially deny assistance but their needs may change over time (U.S. Department of Health and Human Services 2004). The process of providing federal assistance to individuals who are culturally acclimated to an independent lifestyle and who may have a distrust of government intervention based on generations of real and perceived inequities is challenging. However, the denial of a request for federal assistance after the 2008 storm and flood event did not improve the undercurrent of social anomie (Barr 2008) that exists in portions of Southern Illinois.

This dissertation has attempted to adhere to Robert Sack's (1997, 248) challenge to "pursue investigations that increase our moral awareness of the differences that exist between and within our socially created spaces." The findings of stress-related disease prevalence in the elderly population of Southern Illinois serve not only as an insidious indicator of the inequitable distribution of federal disaster assistance, but as a reminder of our obligations as social scientists to share our knowledge in a manner that will influence disaster policy (Knowles 2012). The eligibility criteria for Individual Assistance require reconsideration so that the unique needs of rural communities are factored into the determination process. Illinois Senator Dick Durbin has recently sponsored the Fairness in Federal Disaster Declarations Act of 2014. This proposed legislation, in conjunction with the recently enacted Sandy Recovery Improvement Act of 2013 (P.L. 113-2), is designed to allow additional consideration for rural communities that have been affected by disasters. The findings of this dissertation will be provided to Senator Durbin and to FEMA for consideration in the policy making process. The observations will also be disseminated at academic and public policy meetings to researchers, planners, emergency management officials, health care affiliates, and other stakeholders who serve as stewards of community well-being during and after disaster events. In this regard, the research will assist in placing a focus on Stafford Act policy reformulation that is attentive to the risks and potential inequities that exist in the implementation of this critical disaster legislation with respect to disaster recovery.

## **6.2 Limitations of the Study**

This dissertation has systematically investigated perceived inequities in the implementation and effectiveness of federal disaster policy in the U.S. under the provisions of

the Stafford Act and the consequences of those inequities with respect to health-related recovery in communities that had differential access to the array of federal resources that are available after a disaster. The consideration of explanatory variables that have not been utilized in prior studies and the modeling of “marginal” events have provided further clarity with respect to the question of inequity in the distribution of presidential disaster declarations. However, the details of presidential disaster declaration decision making are protected by executive privilege. This requires careful consideration of the factors that contribute to the declaration or denial of a request from the president. It is possible that some aspect of the determination process has not been fully considered in this analysis. Additionally, the limitations in access to FEMA identifiers for Public Assistance declarations and Individual Assistance declarations, prior to 1996, necessitated combining these categories in the analysis. The research observations would be refined if this information were available.

The longitudinal analysis of stress-related disease prevalence in the 2008 Illinois case study benefitted from a large patient sample utilizing multiple controls and the refinements of random coefficient modeling. However, the etiology of stress-related psychological disorders and their comorbid physiological maladies are varied and often not fully understood by either the patient or the practitioner. There is no mechanism in this study to control for the individual characterizations of illness by patients or the diagnostic coding practices of health care providers. It is assumed that consistencies exist across the time frames, areas under analysis, and standards of the service providers, but it is important to note the subjectivity associated with the utilization of ICD 9 CM codes for illnesses that are often not defined by an x-ray, laboratory test, or objective parameter. Correlation is not causality. The statistically significant increase in stress-related disease in the disaster denied area may have no causal link with the failure to

receive Stafford Act Individual Assistance benefits and, without obtaining the perspectives of the afflicted individuals, this conclusion will remain limited. The Health Insurance Portability and Accountability Act of 1996 (HIPAA) protects the privacy rights of patients and the encrypted identifiers in this study, while allowing for individual level longitudinal analysis, prevent the pursuit of qualitative substantiation of the statistical observations.

### **6.3 Significance of the Investigation**

The contributions of prior research pertaining to political improprieties in the implementation of the Stafford Act have provided insight into potential causes of inequities in the response to and recovery from disasters. However, this dissertation has reframed the investigation by the inclusion of previously unconsidered explanatory variables, including updated itemized FEMA expenditure data, obtained through a Freedom of Information Act request, and encrypted individual level data obtained through a CMS peer review process. The resultant analysis considered the political, economic, geographic, and health related aspects of disaster declaration decision-making and in so doing, provided findings that redirect our attention away from claims of political bias and towards the particular needs of disadvantaged “special populations.” This study has provided substantive evidence that there are portions of the elderly demographic, residing within rural America, who are not benefitting equitably from the consideration of need by the federal government with respect to the implementation of the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988. This is not an inequity grounded in the ill-found motives of miscreant politicians. Nonetheless, it is, both, an inequity and an abrogation of the “social contract” which defines “the duties of care that public officials owe to the people of a democratic society” (Ignatieff 2005). The Conservation of



Resources theory informs us that individuals maximize the obtainment, retainment, and protection of those things that they value in order to avoid psychological stress and establish a sense of well-being. (Hobfoll 1988; Hobfoll, 2001, 341). However, those same individuals, when chronically and generationally culturally alienated and disenfranchised by poverty, infirmity, lower education levels, and lack of social support, may be the least able to obtain, retain, and protect the material and emotional resources that are essential to our sense of well-being (Klinenberg 2002, 47; Barr 2008). The assets of power, prestige, hope, and privilege may be foreign to those who are burdened by the inordinate sense of despair that develops from a dependency on simply maintaining the object resources of a meager existence. These are the “hand-to-mouth” Americans. Their salvation is not readily found and it does not lie in charity. However, there are grassroots and federal government initiatives that recognize the potential of community action to foster a sense of self-efficacy amongst the rural elderly. This is engendered by empowering trusted partners and members of the local community to work together and serve as paraprofessional and non-professional health care workers, Red Hat Society members, nutrition advisors, agricultural educators, government liaisons, crisis counselors, and emergency response volunteers. This is a bottom-up approach that incorporates a culturally sensitive interaction between locals and “outsiders” and it may represent our best opportunity to address the social roots of inequality amongst the elderly in rural America and foster the creation of a voice of power amongst the disadvantaged people of areas such as Southern Illinois. This will enable communities to better prepare for and respond to disasters, to access the post-disaster resources that are available from the federal government, and to establish a better understanding of the mechanisms that are available to assist in the long-term recovery from these events.

The investigation was undertaken with a reverence for the unity of knowledge that embodies a geographic approach to disaster research. Andrew Sayer (1982, 69) informs us that, “we need to ... avoid dividing the indivisible in our research”. Marx (1857) warns us of the risks of incomplete and inappropriate methodological analysis that leads to an endpoint of —chaotic conceptions. The difference between an endpoint of innocent and misleading correlations and an endpoint that yields a degree of realism by means of causal inference lies in a disciplined and rigorous application of appropriate methodologies and in an interpretation of those findings that is grounded in sound theory and a firm understanding of the subject matter under investigation. It has been the intent of this dissertation to heed the warnings of Sayer and Marx, and, in so doing, contribute to some degree of consilience in the complex analysis of spatial equity in the implementation of the Stafford Act and the political ecology of post-disaster stress-related disease.

## REFERENCES

- ABC News. 2010. Pat Robertson Blames Earthquake on Pact Haitians made with Satan. <http://blogs.abcnews.com/politicalpunch/2010/01/pat-robertson-blames-earthquake-on-pact-haitians-made-with-satan.html>.
- ABC News. 2011. Obama Has Declared Record-Breaking 89 Disasters So Far in 2011. <http://abcnews.go.com/blogs/politics/2011/10/obama-has-declared-record-breaking-89-disasters-so-far-in-2011/>
- Adams, V., Kaufman, S.R., van Hattum, T. and S. Moody. 2011. Aging Disaster: Mortality, Vulnerability, and Long-term Recovery among Katrina Victims. *Medical Anthropology*. 30(3):247–270.
- Agnew, J. 1996. Mapping Politics: How Context Counts in Electoral Geography. *Political Geography*. 15(2):129-146.
- Agnew, J. 2009. *Globalization and Sovereignty*. Lanham: Rowman and Littlefield Publishers.
- Alexander, D. 2002. Nature's Impartiality, Man's Inhumanity: Reflections on Terrorism and World Crisis in a Context of Historical Disaster. *Disasters*. 26 (1):1-9.
- Andersen-Ranberg, K., Petersen, I., Robine, J.M. and K. Christensen. 2005. Who are the Oldest Old? in *Health, Ageing and Retirement in Europe - First Results from the Survey of Health, Ageing and Retirement in Europe*. Börsch-Supan, A., Brügiavini, A., Jürges, H., Mackenbach, J., Siegrist, J. and G. Weber. Mannheim: Mannheim Research Institute for the Economics of Aging (MEA).
- Anxiety and Depression Association of America. 2014. Facts and Statistics. <http://www.adaa.org/about-adaa/press-room/facts-statistics>
- Apperson, B.L. 2006. Reconciling Partisanship with Deliberative Representative Democracy. *The Virginia Newsletter*. 82(2):1-6.
- Arata, K., Picou, J.S., Johnson, G.D. and T.S. McNally 2000. Coping with Technological Disaster: An Application of the Conservation of Resources Model to the Exxon Valdez Oil Spill. *Journal of Traumatic Stress*. 13:28–39.

- Ash, A. S., Ellis, R. P., Pope, G. C., Ayanian, J. Z., Bates, D.W., Burstin, H., Iezzoni, L. I., MacKay, E. and W. Yu. 2000. Using Diagnoses to Describe Populations and Predict Costs. *Health Care Financing Review* 21(3):7–28.
- Bancroft Library. 2006. *The 1906 San Francisco Earthquake and Fire*. The Regents of the University of California.  
[http://bancroft.berkeley.edu/collections/earthquakeandfire/exhibit/room04\\_item04.html](http://bancroft.berkeley.edu/collections/earthquakeandfire/exhibit/room04_item04.html).
- Banks, C. and O. Read. 1906. *The Complete History of the San Francisco Disaster and Mount Vesuvius Horror- Death and Ruin by Eruption, Earthquake and Fire*. C.E. Thomas.
- Bansal, V., Conroya, C., Changa, D., Tominagab, G.T. and R. Coimbraa. 2011. Rib and Sternum Fractures in the Elderly and Extreme Elderly following Motor Vehicle Crashes. *Accident Analysis & Prevention*. 43(3):661-665.
- Bao, Y. and R. Sturm. 2001. How Do Trends for Behavioral Health Inpatient Care Differ from Medical Inpatient Care in U.S. Community Hospitals? *Journal of Mental Health Policy and Economics*. 4:55-63.
- Barnes, T. 1987. Homo Economicus, Physical Metaphors, and Universal Models in Economic Geography. *The Canadian Geographer*. 31(4):299-308.
- Barnes, T.J. and E. Sheppard. 1992. Is There a Place for the Rational Actor? A Geographical Critique of the Rational Choice Paradigm. *Economic Geography*. 68(1):1-21.
- Barone, M. and R.E. Cohen. 2002, 2004, 2006, 2008, 2010. *The Almanac of American Politics*. Washington, D.C.: National Journal Inc.
- Barone, M. and C. McCutcheon. 2012. *The Almanac of American Politics*. Chicago:University of Chicago Press.
- Barone, M. and G. Ujifusa. 1990, 1992, 1994, 1996, 1998, 2000. *The Almanac of American Politics*. Washington, D.C.: National Journal Inc.
- Barr, D. A. 2008. *Health Disparities in the United States: Social Class, Race, Ethnicity, and Health*. Baltimore: Johns Hopkins University Press.
- Barrows, H. 1923. Geography as Human Ecology. *Annals of the Association of American Geographers*. XIII (1):1-1.
- Bazan, E.B. 2005. Robert T. Stafford Disaster Relief and Emergency Assistance Act: Legal Requirements for Federal and State Roles in Declarations of an Emergency or a Major Disaster. CRS Report for Congress. *Congressional Research Service*. Order Code RL 33090.

- Bea, K. 2006. Update-Federal Stafford Act Disaster Assistance: Presidential Declarations, Eligible Activities, and Funding. CRS Report for Congress. *Congressional Research Service*. Order Code RL 33053.
- Bea, K. 2007 The Formative Years:1950-1978 in *Emergency Management: The American Experience, 1900-2005*. Rubin, C.B. ed. Fairfax: Public Entity Risk Institute.
- Beavers, C. 2009. Kocher, Benson Out as NFIP Administrators in Lawrence. *Disclosure*. <http://www.disclosurenews.com/2009/05/20/kocher-benson-out-as-nfip-administrators-in-lawrence/>
- Beekman, A.T.F., de Beurs, E., van Balkom, A.J.L.M., Deeg, D.J.H., van Duck, R., and W. van Tilberg, W. 2000. Anxiety and Depression in Later Life: Co-occurrence and Communality of Risk Factors. *American Journal of Psychiatry*. 157(1):89-95.
- Benight, C. C., Ironson, G., Klebe, K., Carver, C., Wynings, C., Greenwood, D., Burnett, K., Baum, A. and N. Schneiderman. 1999. Conservation of Resources and Coping Self-efficacy Predicting Distress Following a Natural Disaster: A Causal Model Analysis Where the Environment Meets the Mind. *Anxiety, Stress and Coping*. 12:107–126.
- Berg, Z. 2014. Quinn Announces State Tornado Relief Package. *Journal Star*. <http://www.pjstar.com/article/20140305/NEWS/140309433>
- Best, C., Eckhardt-Henn, A., Diener, G., Bense, S., Breuer, P. and M. Dieterich. 2006. Interaction of Somatoform and Vestibular Disorders. *Journal of Neurology, Neurosurgery and Psychiatry*. 77:658–664.
- Birkland, T. and S. Waterman. 2008. Is Federalism the Reason for Policy Failure in Hurricane Katrina? *The Journal of Federalism*. 38(4):692-714.
- Bland, S. L., Valoroso, L., Stranges, S., Strazzullo, P., Farinero, E. and M. Trevisan. 2005. Long-term Follow-up of Psychological Distress Following Earthquake Experiences among Working Italian Males: A Cross-sectional Analysis. *Journal of Nervous and Mental Disease*. 193:420-423.
- Bohman, J. 1997. Pluralism, Indeterminacy and the Social Sciences: Reply to Ingram and Meehan. *Human Studies* 20:441–458.
- Bolin, R. 1985. Disaster Characteristics and Psychosocial Impacts in *Disasters and Mental Health: Selected Contemporary Perspectives*. B.J. Sowder ed. Rockville, MD: National Institute of Mental Health.
- Boman B. 1979. Behavioural Observations on the Granville Train Disaster and the Significance of Stress for Psychiatry. *Social Science and Medicine*. 13:463–471.

- Bonanno, G. 2004. Trauma, and Human Resilience: Have We Underestimated the Human Capacity to Thrive After Extremely Aversive Events? *American Psychologist*. 59(1)20-28.
- Borrell-Carrio, F., Suchman, A.L. and R.M. Epstein. 2004. The Biopsychosocial Model 25 Years Later: Principles, Practice, and Scientific Inquiry. *Annals of Family Medicine* 2(6): 576-582.
- Brown, J.T. 2012. FEMA's Community Disaster Loan Program: History, Analysis, and Issues for Congress. *Congressional Research Service*.  
<http://www.fas.org/sgp/crs/homesecc/R42527.pdf>
- Brown, J.T., McCarthy, F.X. and E.C. Liu. 2013. Analysis of the Sandy Recovery Improvement Act of 2013 Congressional Research Service.  
<https://www.fas.org/sgp/crs/misc/R42991.pdf>
- Brown, L. M., J. Shiang and B. Bongar. 2003. Crisis Intervention In *Handbook of Psychology: Volume 8: Clinical Psychology*. eds. Stricker, G. and T. A. Widiger. Hoboken, NJ: John Wiley and Sons, Inc.
- Brown, L. M., Rothman, M., and F. Norris. 2007. Issues in Mental Health Care for Older Adults during Disasters. *Generations*. 31(4):25–30.
- Brown, M.D. and T. Schwarz. 2011. *Deadly Indifference-The Perfect (Political) Storm-Hurricane Katrina, The Bush White House, and Beyond*. Lanham, MD: Taylor Trade Publishing.
- Bruce, S. E., Yonkers, K. A., Otto, M. W., Eisen, J. L., Weisberg, R. B., Pagano, M., Shea, M.T. and M.B. Keller. 2005. Influence of Psychiatric Comorbidity on Recovery and Recurrence in Generalized Anxiety Disorder, Social Phobia, and Panic Disorder: A 12-year Prospective Study. *American Journal of Psychiatry*. 162(6):1179–1187.
- Buchanan, J.M. and G. Tullock. 1962. *The Calculus of Consent*. Ann Arbor: University of Michigan Press.
- Bureau of Economic Analysis. 2012. 2012 Total Taxable Resources Estimates. Department of Commerce. Internal Revenue Service.
- Bureau of Labor Statistics. 2014. Labor Force Data by County, 2008 Annual Averages.  
<http://www.bls.gov/lau/laucnty08.txt>
- Burkle, F.M. 1996. Acute-phase Mental Health Consequences of Disasters: Implications for Triage and Emergency Medical Services. *Annals of Emergency Medicine*. 28:119-128.

- Burton, L. C., Skinner, E. A., Uscher-Pines, L., Lieberman, R., Leff, B., Clark, R., Qilu, Y., Lemke, K. W. and J. P. Weiner. 2009. Health of Medicare plan Enrollees at 1 Year after Hurricane Katrina. *The American Journal of Managed Care*. 15 (1): 13-22.
- Business Information Center. 2010. Community Development Assistance Program. [http://ienconnect.custhelp.com/app/answers/detail/a\\_id/564/~community-development-assistance-program-\(cdap\)](http://ienconnect.custhelp.com/app/answers/detail/a_id/564/~/community-development-assistance-program-(cdap))
- Byers, A.L., and K. Yaffe. 2011. Depression and Risk of Developing Dementia. *Nature Reviews Neurology*.7:323-31.
- Camacho, T.C., Strawbridge, W.J., Cohen, R.D., and G.A. Kaplan. 1993. Functional Ability in the Oldest Old. Cumulative Impact of Risk Factors from the Preceding Two Decades. *Journal of Aging and Health*. 5:439–454.
- Catalog of Federal Domestic Assistance. 2014. Federal Disaster Assistance to Individuals and Households in Presidential Declared Disaster Areas. <https://www.cfda.gov/index?s=program&mode=form&tab=step1&id=f6da1d45810866420c3fc67b94e35a4a>
- Catalog of Federal Domestic Assistance. 2014a. Presidential Declared Disaster Assistance to Individuals and Households - Other Needs. <https://www.cfda.gov/?s=program&mode=form&tab=step1&id=3a9eb3aa7274c099ab8b7c36e2585a00>
- Catalog of Federal Domestic Assistance. 2014b. Community Development Block Grants/Entitlement Grants. <https://www.cfda.gov/index?s=program&mode=form&tab=step1&id=eb2e402e3c148e762a45cf0d3602b996>
- Catalog of Federal Domestic Assistance. 2014c. Community Development Block Grants/State's program and Non-Entitlement Grants in Hawaii. <https://www.cfda.gov/index?s=program&mode=form&tab=step1&id=7b6e19a6a0f8478ecca28228e161ed6f>
- Catalog of Federal Domestic Assistance. 2014d. Special Programs for the Aging\_ Title III, Part B\_ Grants for Supportive Services and Senior Centers. <https://www.cfda.gov/index?s=program&mode=form&tab=core&id=d987cee2acf8a4f524c0fcb7419d73a8>
- Catalog of Federal Domestic Assistance. 2014e. Emergency Loans. <https://www.cfda.gov/index?s=program&mode=form&tab=step1&id=0ad8fe2dafb907cd778e7ff13f088b7b>

- Catalog of Federal Domestic Assistance. 2014f. HOME Investments Partnership Program.  
<https://www.cfda.gov/index?s=program&mode=form&tab=step1&id=b2a237eb6ef33922702620ee858d9e6e>
- Catalog of Federal Domestic Assistance. 2014g. Mental Health Disaster Assistance and Emergency Mental Health.  
<https://www.cfda.gov/index?s=program&mode=form&tab=step1&id=883384669334a14ebde9709be69f864f>
- Catalog of Federal Domestic Assistance. 2014i. Emergency Food and Shelter National Board Program.  
<https://www.cfda.gov/index?s=program&mode=form&tab=core&id=f644c07a2ab1a2958ccfba4488482c2a>
- Catalog of Federal Domestic Assistance. 2014j. Supplemental Revenue Assistance Program.  
<https://www.cfda.gov/index?s=program&mode=form&tab=core&id=535bd99515920db41ce7ddaef20178b5>
- Catalog of Federal Domestic Assistance. 2014k. Very Low-Income Housing Repair Loans and Grants.  
<https://www.cfda.gov/index?s=program&mode=form&tab=core&id=0c4f76491bd0c2310f7337020d8d4b28>
- Catalog of Federal Domestic Assistance. 2014l. Rural Business Opportunity Grants.  
<https://www.cfda.gov/index?s=program&mode=form&tab=core&id=b0f7f627794290f852c637afe0be2709>
- Catalog of Federal Domestic Assistance. 2014m. Social Services Block Grant.  
<https://www.cfda.gov/index?s=program&mode=form&tab=core&id=b0f7f627794290f852c637afe0be2709>
- Cebula, R. 2004. Expressiveness and Voting: Alternative Evidence. *Atlantic Economic Journal*. 32(3): 216-221.
- Cenac, A., Sparfel, A., Amiel-Lebigre, F., Cleuziou, A., Penneç, Y., Le Goff, P. and D. Mottier. 2002. Effect of Stressful Life Events on Clinical Development of Temporal Arteritis and/or Polymyalgia Rheumatica. *Presse Med*. 31(19):873-9.
- Chambliss, S. 2013. Statement from Senator Saxby Chambliss.  
<http://www.chambliss.senate.gov/public/index.cfm>
- City of Harrisburg. 2014. About Harrisburg. <http://thecityofharrisburgil.com/about-harrisburg/>
- Clary, B.B. 1985. The Evolution and Structure of Natural Hazard Policies. *Public Administration Review*. 45:20-28.



- Cline, B.L. 2012. *More History, Mystery, and Hauntings of Southern Illinois*. Rockford: Black Oak Media, Inc.
- CMS. 2014. Medicare Enrollment - Aged Beneficiaries: as of July 2008.  
<http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/MedicareEnrpts/Downloads/08Aged.pdf>
- CNBC. 2013. You Disgust Me, Christie Tells Boehner in Storm Over Aid.  
<http://www.cnbc.com/id/100349457>
- Code of Federal Regulations. 2002. *Emergency Management and Assistance*. Office of the Federal Register: National Archives and Records Administration. 44:431-433.  
<http://www.gpo.gov/fdsys/pkg/CFR-2002-title44-vol1/pdf/CFR-2002-title44-vol1.pdf>
- Cohen, B.E., Gima, K., Bertenthal, D., Kim, S., Marmar, C.R. and K.H. Seal. 2010. Mental Health Diagnoses and Utilization of VA Non-Mental Health Medical Services among Returning Iraq and Afghanistan Veterans. *Journal of General Internal Medicine*. 25(1):18-24.
- Cohen, M.D. and W.W. Ginsburg. 1990. Polymyalgia Rheumatica. *Rheumatic Diseases Clinics of North America*. 16(2):325-339.
- Colantonio, A., Kasl, S.V. and A. M. Ostfeld. 1992. Depressive Symptoms and Other Psychosocial Factors as Predictors of Stroke in the Elderly. *American Journal of Epidemiology*. 136(7):884-894.
- Compson, M.L. 2003. Historical Estimates of Total Taxable Resources for U.S. States, 1981-2000. *Publius: The Journal of Federalism*. 33(2):55-72.
- Cook, J.M. 2001. Post Traumatic Stress in Older Adults. *PTSD Research Quarterly*. 12(3).
- Creamer, M. and R. Parslow. 2008. Trauma Exposure and Posttraumatic Stress Disorder in the Elderly: A Community Prevalence Study. *American Journal of Geriatric Psychiatry*. 16(10):853-856.
- Culli, T. 2008. Area Rains Result in Numerous Road Closings and Floodings. *Mt Vernon Register-News*. <http://www.register-news.com/local/x2143191094/Area-rain-results-in-numerous-road-closings-and-flooding/?state=taberU>
- Culli, T. 2009. Campgrounds to Re-open at Rend Lake. *Mt Vernon Register-News*.  
<http://www.register-news.com/local/x2143203112/Campgrounds-to-re-open-at-Rend-Lake/print?mobRedir=false>

- Cutter, S. 2006. The Geography of Social Vulnerability: Race, Class, and Catastrophe. <http://understandingkatrina.ssrc.org/Cutter/>
- Cutter, S. L., Boruff, B. J. and W.L. Shirley. 2003. Social Vulnerability to Environmental Hazards. *Social Science Quarterly*. 84(2):242–261.
- Cutter, S.L. and C. Emrich. 2005. Are Natural Hazard and Disaster Losses in the U.S Increasing? *EOS, Transaction, American Geophysical Union*. 86(41): 381, 388-389.
- Cutter, S. L. and C. Finch. 2008. Temporal and Spatial Changes in Social Vulnerability to Natural Hazards. *Proceedings of the National Academy of Sciences*. 105(7): 2301–2306.
- Danbom, D.B. 2006. *Born in the Country: A History of Rural America, Second Edition*. Baltimore: The John Hopkins Press.
- Daniels, S. 2010. Exchanging Scope of Disaster for Political Responsiveness in U.S. Disaster Decisions: 1953-2009. Presented at the 2010 Annual Meeting of the Western Political Science Association, San Francisco, CA. April 1—4 2010.
- Dauber, M.L. 2013. *The Sympathetic State: Disaster Relief and the Origins of the American Welfare State*. Chicago: University of Chicago Press.
- Davidson, J. R., Stein, D. J., Shalev, A. Y. and R. Yehuda. 2004. Posttraumatic Stress Disorder: Acquisition, Recognition, Course, and Treatment. *The Journal of Neuropsychiatry and Clinical Neurosciences*. 16(2):135–147.
- Dawood, M Y., L A. Lumley, C L. Robison, G A. Saviolakis, and J. L. Meyerhoff. 2004. Accelerated Barnes Maze Test in Mice for Assessment of Stress Effects on Memory. *Annals of the New York Academy of Sciences*. 1032:304-307.
- Delta Regional Authority, 2013. A New Economic Model: Rethinking the Delta 2008-2013 Regional Development Plan. [http://www.dra.gov!/userfiles/editor/docs/DRA\\_Regional\\_Development\\_Plan.pdf](http://www.dra.gov!/userfiles/editor/docs/DRA_Regional_Development_Plan.pdf)
- DeNeal, B. 2012. Tornado-battered Ridgway may see none of FEMA 'cookie'. Daily Register/Daily Journal 14 March. <http://www.sj-r.com/archive/x1612621778/Tornado-battered-Ridgway-may-see-none-of-FEMA-cookie>
- Department of Commerce. 2011. Policy Guidance for Disaster Assistance Under Magnuson-Stevens Act 312(a) and Interjurisdictional Fisheries Act 308(b) and 308(d).
- Department of Homeland Security 2008. National Response Framework. <http://www.fema.gov/pdf/emergency/nrf/nrf-core.pdf>

- Department of Homeland Security. 2008a. FEMA's Crisis Counseling Assistance and Training Program; State of Florida's Project H.O.P.E. [http://www.dhs.gov/xoig/assets/mgmttrpts/OIG\\_08-96\\_Sep08.pdf](http://www.dhs.gov/xoig/assets/mgmttrpts/OIG_08-96_Sep08.pdf)
- Department of Homeland Security. 2011a. National Preparedness Goal. <http://www.fema.gov/pdf/prepared/npg.pdf>
- Department of Homeland Security. 2011b. National Disaster Recovery Framework. <http://www.fema.gov/pdf/recoveryframework/ndrf.pdf>
- Department of Homeland Security. 2011c. FEMA Public Assistance Funds Awarded to Henderson County, Illinois. [http://www.oig.dhs.gov/assets/GrantReports/OIG\\_DD-11-22\\_Sep11.pdf](http://www.oig.dhs.gov/assets/GrantReports/OIG_DD-11-22_Sep11.pdf)
- Department of Homeland Security. 2013. Notice of Adjustment of Disaster Grant Amounts. <http://www.fema.gov/media-library-data/1382982574145-a5c307d4f7309d9632e6ca6d0ec65671/Large+Project+Threshold+FY2014.pdf>
- Desbiens N.A., Mueller-Rizner, N., Virnig, B. and J. Lynn. 2001. Stress in Caregivers of Hospitalized Oldest Old. *The Journals of Gerontology: Series A. Biological Sciences*. 56(4): M231-M235.
- Disaster Mitigation Act 2000. 2000. Public Law 106-390. October 30, 2000. Stat. 1552.
- Dixon, P. 1991. Vicarious Victims of a Maritime Disaster. *British Journal of Guidance & Counselling*. 19(1): 8-12.
- Downton, M.W., and R. A. Pielke. 2001. Discretion Without Accountability: Politics, Flood Damage, and Climate. *Natural Hazards Review*. 2(4):157-166.
- Drinker, F. E. 1918. *Horrors of Tornado Flood and Fire*. Harrisburg, PA: The Minter Company.
- Du Bois, W. E. B. ed., 1928. The Flood, the Red Cross and the National Guard. *The Crisis- A Record of the Darker Races*. New Years: 5-7.
- Duckworth, D.H. 1991. Facilitating Recovery from Disaster-Work Experiences. *British Journal of Guidance & Counselling*.19(1):13-22.
- Duffy, S.Q. 2004. Substance Use and Mental Disorder Discharges from U.S. Community Hospitals in the Early 1990s, Revisited, Health Services Utilization by Individuals with Substance Abuse and Mental Disorders. *SAMHSA-Office of Applied Studies*. <http://oas.samhsa.gov/HSR/ch3.htm>

- Durbin, D. 2013. Durbin Announces \$1.6 Million in Disaster Relief Funds for Harrisburg. <http://www.durbin.senate.gov/public/index.cfm/pressreleases?ID=349edb4d-49a4-48cc-b26e-568509d113bd>
- Dutta-Gupta, I., Pavetti, L. and I. Finch. 2012. Eliminating Social Services Block Grant Would Weaken Services for Vulnerable Children, Adults, and Disabled. Center on Budget and Policy Priorities. <http://www.cbpp.org/files/5-3-12bud.pdf>
- Dynes, R. 1997. The Lisbon Earthquake in 1755: *Contested Meanings in the First Modern Disaster*. Preliminary Paper #255. University of Delaware, Disaster Research Center.
- Dyson, M. E. 2006. *Come Hell or High Water: Hurricane Katrina and the Color of Disaster*. New York: Basic Civitas Books.
- Economic Development Administration. 2012. Announcement of Federal Funding Opportunity. Executive Summary. FY 2012 Disaster Relief Opportunity. [http://www.eda.gov/pdf/FY2012\\_Disaster\\_Relief\\_Opportunity\\_FFO\\_FINAL.pdf](http://www.eda.gov/pdf/FY2012_Disaster_Relief_Opportunity_FFO_FINAL.pdf)
- Ehrenreich, J. H., and S. McQuaide. 2001. Coping with Disasters: A Guidebook to Psychosocial Intervention. <http://www.medbox.org/preview/528c702e-eedc-4e57-ac20-5ae71fcc7b89/doc.pdf>
- Ehrlich, P. and R. Ornstein. 1989. *New World, New Mind: Moving Toward Conscious Evolution*. Los Altos: Malor Books.
- Elliott, J.R. and J. Pais. 2006. Race, Class, and Hurricane Katrina: Social Differences in Human Responses to Disaster. *Social Science Research* 35(2): 295–321.
- Engel, G. 1977. The Need for a New Medical Model: A Challenge for Bio-Medicine. *Science* 196:129-136.
- Erikson, K. 1976. *Everything in its Path: Destruction of Community in the Buffalo Creek Flood*. New York: Simon and Schuster.
- Everett, M. 1913. *Tragic Story of America's Greatest Disaster- Tornado, Flood and Fire in Ohio, Indiana, Nebraska and Mississippi Valley*. Chicago: J. S. Ziegler Company.
- Faille, S. 2013. Rep. Mulvaney Releases Statement on Hurricane Sandy Supplemental Relief Amendments. *Mick Mulvaney U.S. Congressman 5<sup>th</sup> District of South Carolina* [http://mulvaney.house.gov/index.php?option=com\\_content&view=article&id=228:rep-mulvaney-releases-statement-on-hurricane-sandy-supplemental-relief-amendments&catid=16](http://mulvaney.house.gov/index.php?option=com_content&view=article&id=228:rep-mulvaney-releases-statement-on-hurricane-sandy-supplemental-relief-amendments&catid=16)

- Farinella, M. 2012. Conservation of Resources Theory: Losses are More Powerful than Gains. *Politics of the Mind-The Science and Psychology Behind Effective Political Messaging*. <http://politicsofthemind.com/2012/12/30/conservation-of-resources-theory-losses-are-more-powerful-than-gains/>
- Fasol, T. 2008. Flood Victims Left High and Dry. *The Southern*. [http://thesouthern.com/news/article\\_69de7b55-34a5-5e60-a600-32990223d802.html](http://thesouthern.com/news/article_69de7b55-34a5-5e60-a600-32990223d802.html)
- Fasol, T. 2008a. West Frankfort Sewage Plant Still Cleaning Up after Flood. *The Southern*. [http://thesouthern.com/news/local/west-frankfort-sewage-plant-still-cleaning-up-after-flood/article\\_072ce632-439f-5eb1-8eb2-c4cfb00e3e1a.html](http://thesouthern.com/news/local/west-frankfort-sewage-plant-still-cleaning-up-after-flood/article_072ce632-439f-5eb1-8eb2-c4cfb00e3e1a.html)
- Federal Register. 1999. Disaster Assistance; Factors Considered When Evaluating a Governor's Request for a Major Disaster Declaration. 64(169):47699. <http://www.disastersrus.org/fema/3AC94FNLF.R.pdf>
- Federal Register. 2001. Substance Abuse and Mental Health Services Administration: Mental Health and Substance Abuse Emergency Response Criteria. 66(197). FR Doc No: 01-25451. <http://www.gpo.gov/fdsys/pkg/FR-2001-10-11/html/01-25451.htm>.
- Federal Register. 2008. Illinois; Amendment No. 7 to Notice of a Major Disaster Declaration.. <http://www.gpo.gov/fdsys/pkg/FR-2008-08-18/html/E8-19016.htm>
- Federal Register. 2013. Notice of Adjustment of Statewide Per Capita Indicator for Recommending a Cost Share Adjustment. 78(29):9935. <http://www.gpo.gov/fdsys/pkg/FR-2013-02-12/pdf/2013-03078.pdf>
- Federal Register. 2013a. Notice of Adjustment of Countywide Per Capita Impact Indicator. 78(208):64231-64232. <http://0-www.gpo.gov.librus.hccs.edu/fdsys/pkg/FR-2013-10-28/pdf/FR-2013-10-28.pdf>
- Federal Register. 2013b. Notice of Adjustment of Statewide Per Capita Impact Indicator. 78(208): 64232. <http://0-www.gpo.gov.librus.hccs.edu/fdsys/pkg/FR-2013-10-28/pdf/FR-2013-10-28.pdf>
- Federal Register. 2013c. Notice of Maximum Amount of Assistance Under the Individuals and Households Program. 78(209):64523. <http://www.gpo.gov/fdsys/pkg/FR-2013-10-29/pdf/2013-25626.pdf>
- Federal Register. 2014. Amendment to the Public Assistance Program's Simplified Procedures Project Thresholds. 79(38):10685-10686. <http://www.gpo.gov/fdsys/pkg/FR-2014-02-26/pdf/2014-04220.pdf>
- FEMA. 2003. Texas Loss of the Space Shuttle Columbia (EM-3171). <http://www.fema.gov/disaster/3171>

- FEMA. 2004. Public Affairs Field Guide for Joint Information Center Operations.  
<http://www.fbcoem.org/external/content/document/1528/257620/1/FEMAfieldguide.pdf>
- FEMA. 2005. Disaster Assistance: A Guide to Recovery Programs.  
<http://www.fema.gov/library/viewRecord.do?id=2152>
- FEMA. 2005a. Preliminary Damage Assessment for Individual Assistance Operations Manual. (9327.1-PR). <http://www.ok.gov/OEM/documents/FEMA-PDA%20SOP%20SM%203-26-05.pdf>
- FEMA. 2007. Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended, 42 U.S.C. 5121-5207, and Related Authorities.  
[http://www.fema.gov/pdf/about/stafford\\_act.pdf](http://www.fema.gov/pdf/about/stafford_act.pdf)
- FEMA. 2007a. IS-292. Disaster Basics. Background of Federal Disaster Assistance.  
<http://www.hsdl.org/?view&did=485277>
- FEMA. 2008. Public Affairs Field Guide. Joint Field Office Operations.  
[http://www.au.af.mil/pace/handbooks/fema\\_pa\\_field\\_guide.pdf](http://www.au.af.mil/pace/handbooks/fema_pa_field_guide.pdf)
- FEMA. 2008a. Help After a Disaster - Applicant's Guide to the Individuals & Households Program. [http://www.fema.gov/pdf/assistance/process/help\\_after\\_disaster\\_english.pdf](http://www.fema.gov/pdf/assistance/process/help_after_disaster_english.pdf)
- FEMA . 2008c. Preliminary Damage Assessments Reports.  
[http://www.fema.gov/rebuild/recover/pda\\_reports.shtm](http://www.fema.gov/rebuild/recover/pda_reports.shtm)
- FEMA. 2009. Hazard Mitigation Grant Program. [http://www.fema.gov/media-library-data/20130726-1708-25045-9805/hazard\\_mitigation\\_grant\\_program\\_brochure.pdf](http://www.fema.gov/media-library-data/20130726-1708-25045-9805/hazard_mitigation_grant_program_brochure.pdf)
- FEMA. 2009a. The Road to Recovery 2008.  
[http://www.fema.gov/pdf/rebuild/ltrc/2008\\_report.pdf](http://www.fema.gov/pdf/rebuild/ltrc/2008_report.pdf)
- FEMA. 2010. SBA Application? The Key To Disaster Funding. <http://www.fema.gov/news-release/2010/06/21/sba-applicationthe-key-disaster-funding>
- FEMA. 2010a. Unit Three: Overview of Federal Disaster Assistance in *A Citizens Guide to Disaster Assistance*. Emmitsburg: Emergency Management Institute.
- FEMA. 2010b. Crisis Counseling Assistance and Training Program.  
[http://www.fema.gov/pdf/media/factsheets/2009/dad\\_crisis\\_counseling.pdf](http://www.fema.gov/pdf/media/factsheets/2009/dad_crisis_counseling.pdf)
- FEMA. 2011. Political and Policy Basis of Emergency Management- Session5: Executive Policy and Political Issues. *Emergency Management Institute*.  
<http://training.fema.gov/emiweb/edu/politic.asp>

- FEMA. 2011a. Disaster Declaration Process Fact Sheet.  
[http://www.fema.gov/pdf/media/factsheets/dad\\_disaster\\_declaration.pdf](http://www.fema.gov/pdf/media/factsheets/dad_disaster_declaration.pdf)
- FEMA. 2012 . Disaster Process Fact Sheet. <http://www.fema.gov/declaration-process-fact-sheet>
- FEMA. 2012a. Preliminary Damage Assessment for Individual Assistance Operations Manual. (9327.2-PR). [http://www.fema.gov/media-library-data/20130726-1856-25045-5553/ia\\_pda\\_manual\\_and\\_forms.pdf](http://www.fema.gov/media-library-data/20130726-1856-25045-5553/ia_pda_manual_and_forms.pdf)
- FEMA. 2012b. Discovery Report. Saline River Watershed, 05140204.  
<http://www.illinoisfloodmaps.org/DFIRMpdf/discovery/saline/SalineDiscoveryReport.pdf>
- FEMA. 2012c. FEMA-1771-DR-IL, Henderson County, Emergency Levee Repairs and Dewatering, Project Worksheet (PW) 1524 v2. <https://www.fema.gov/appeal/219616>
- FEMA. 2013. Disasters Declared by Year. *FEMA*. <http://www.fema.gov/disasters/grid/year>
- FEMA. 2013a. Freedom of Information Act Request, FEMA 13-146 and 2013-FEFO-00246. Disaster Financial Status Report. Available on request from FEMA.
- FEMA. 2013b. Public Assistance Insurance Requirements and Duplication of Benefits Issues. <http://www.fema.gov/media-library-data/20130919-1121-5011-0545/transcripts20130919-5011-g9pkpy.txt>
- FEMA. 2013c. About the Agency. <http://www.fema.gov/about-agency>
- FEMA. 2013d. Public Assistance Guide. <http://www.fema.gov/public-assistance-local-state-tribal-and-non-profit/public-assistance-guide-0#Categories%20of%20Work>
- FEMA. 2013e. Disaster Survivor Assistance. <https://www.hsdl.org/?view&did=748115>
- FEMA. 2013f. Non-Stafford Act Recovery Guide - Developing and Coordinating Resources. [http://www.fema.gov/media-library-data/20130726-1910-25045-8797/non\\_stafford\\_act\\_recovery\\_guide.pdf](http://www.fema.gov/media-library-data/20130726-1910-25045-8797/non_stafford_act_recovery_guide.pdf)
- FEMA. 2014. Many Good Reasons to Apply to SBA. <http://www.fema.gov/news-release/2014/01/16/many-good-reasons-apply-sba>
- FEMA. 2014a. Declaration Process Fact Sheet. FEMA.gov. <http://www.fema.gov/declaration-process-fact-sheet>
- FEMA. 2014b. Assistance to Individuals and Households Fact Sheet. <http://www.fema.gov/public-assistance-local-state-tribal-and-non-profit/recovery-directorate/assistance-individuals-and>

- FEMA. 2014c. Illinois Severe Storms and Flooding (DR-1771).  
<http://www.fema.gov/disaster/1771>
- FEMA. 2014d. Illinois Severe Storms and Flooding (DR-1747).  
<http://www.fema.gov/disaster/1747>
- FEMA. 2014e. FEMA Awards \$6,415,688 Grant to City of West Frankfort: Hazard Mitigation Grant Program funds Will be Used to Make Sewer Treatment Plant Improvements.  
<http://www.fema.gov/news-release/2014/03/24/fema-awards-6415688-grant-city-west-frankfort-hazard-mitigation-grant>
- Ferraro, R. F. 2003. Psychological Resilience in Older Adults following the 1997 Flood. *Clinical Gerontologist*. 26(3):139-143.
- Fitzgerald, S. 2012. Post-Tornado Housing Help Now Available. *The Southern*.  
[http://m.thesouthern.com/news/local/post-tornado-housing-help-now-available/article\\_a4ae588c-bb51-11e1-b0b1-0019bb2963f4.html](http://m.thesouthern.com/news/local/post-tornado-housing-help-now-available/article_a4ae588c-bb51-11e1-b0b1-0019bb2963f4.html)
- Flint, C. 2000. Electoral Geography and the Social Construction of Space: The Example of the Nazi Party in Baden, 1924–1932. *GeoJournal*. 51:145–156
- Foa, E. B., Stein, D. J. and A.C. McFarlane. 2006. Symptomatology and Psychopathology of Mental Health Problems after Disaster. *Journal of Clinical Psychiatry*. 67(Suppl. 2):15–25.
- Foley, T. and W. Rudman. 2004. *Untangling the Web: Congressional Oversight and the Department of Homeland Security*. Center for Strategic and International Studies, Washington, D.C.
- Forgette, R. 2005. Partisan Stratification and Electoral Party Polarization: When and Why Does Redistricting Matter? *The Midwest Political Science Association, Palmer House Hilton, Chicago, Illinois* [http://www.allacademic.com/meta/p86060\\_index.html](http://www.allacademic.com/meta/p86060_index.html)
- Fothergill, A. and L. Peek . 2004. Poverty and Disasters in the United States: A Review of Recent Sociological Findings. *Natural Hazards*. 32:89–110.
- Fox, J. C., Blank, M., Berman, J., and V.G. Rovnyak. 1999. Mental Disorders and Help Seeking in a Rural Impoverished Population. *International Journal of Psychiatry in Medicine*. 29: 181–195.
- Freedly, J. R., Shaw, D. L., Jarrell, M. P., and C.R. Masters. 1992. Towards an Understanding of the Psychological Impact of Natural Disasters: An Application of the Conservation of Resources Stress Model. *Journal of Traumatic Stress*. 5(3):441–454.



- Friend, G. 1994. Out Of The Mud: Sustainable Re-development of Flood-damaged Towns. *Good Medicine*.
- Frisch, S.A. 2006. *Committee Assignment Politics in the U.S. House of Representatives*. Norman: University of Oklahoma Press.
- Fritz, C. 1961. Disasters. In *Contemporary Social Problems*, eds. R. K. Merton and R. A. Nisbet. New York: Harcourt Brace.
- FSA. 2011. SURE 2008 - 2011 YTD Eligible Primary Counties and Contiguous Counties. [https://www.fsa.usda.gov/Internet/FSA\\_File/sure\\_county\\_list\\_08-11.pdf](https://www.fsa.usda.gov/Internet/FSA_File/sure_county_list_08-11.pdf)
- Furman, J.M., Balaban, C.D., Jacob, R.G. and D.A. Marcus. 2005. Migraine-Anxiety Related Dizziness (MARD): A New Disorder? *Journal of Neurology, Neurosurgery and Psychiatry*. 76:1-8.
- Gamm, L.G., Stone, S. and S. Pittman. 2003. Mental Health and Mental Disorders – A Rural Challenge: A Literature Review in *Rural Healthy People 2010: A Companion Document to Healthy People 2010*. Volume 2. College Station (TX): Supported by the Texas A&M University System Health Science Center, School of Rural Public Health, Southwest Rural Health Research Center.
- GAO. 1998. Testimony- Before the Subcommittee on Water Resources and Environment, Committee on Transportation and Infrastructure, House of Representatives-Disaster Assistance: Information on Federal Costs and Approaches for Reducing Them. GAO/T-RCED-98-139.
- GAO. 2001. Report to the Subcommittee on VA, HUD, and Independent Agencies, Committee on Appropriations, U.S. Senate-Disaster Assistance: Improvement Needed in Disaster Declaration Criteria and Eligibility Assurance Criteria. GAO-01-837.
- Gardner, J. 1998. The American Experiment. *Council for Excellence in Government*. [http://www.pbs.org/johngardner/sections/writings\\_speech\\_2.html](http://www.pbs.org/johngardner/sections/writings_speech_2.html)
- Garesche, W. A. 1902. *Complete Story of the Martinique and St. Vincent Horrors*. L. G. Stahl.
- Garrett, T.A., and R.S. Sobel 2003. The Political Economy of FEMA Disaster Payments. *Economic Inquiry*. 41(3): 496-509.
- Gasper, J.T. 2013. The Politics of Denying Aid: An Analysis of Disaster Declaration Turndowns. <http://www.andrew.cmu.edu/user/gasper/WorkingPapers/turndowns.pdf>

- Gaul, G.M., Morgan, D. and Cohen S. 2006. No Drought Required for Federal Drought Aid. Washington Post 18 July: A01. <http://www.washingtonpost.com/wp-dyn/content/article/2006/07/17/AR2006071701237.html>
- George Mason University. 2013. The Public Policy Process and Critical Infrastructure/Domestic Security Policy-Syllabus. *Center for Infrastructure Protection and Homeland Security*. [http://cip.gmu.edu/archive/ModifiedGraduateDegreeCourse1\\_PublicPolicyProcess.pdf](http://cip.gmu.edu/archive/ModifiedGraduateDegreeCourse1_PublicPolicyProcess.pdf)
- Giddens, A. 1986. *The Constitution of Society: Outline of the Theory of Structuration*. University of California Press.
- Gigerenzer, G. 1997. Bounded Rationality: Models of Fast and Frugal Inference. *Swiss Journal of Economics and Statistics*. 133(2):201–218.
- Go, A.S., Mozaffarian D., Roger, V.L., Benjamin, E.J., Berry, J.D., Borde,n W.B., Bravata, D.M., Dai, S., Ford, E.S., Fox, C.S., Franco, S., Fullerton, H.J., Gillespie, C., Hailpern , S.M., Heit, J.A., Howard, V.J., Huffman, M.D., Kissela, B.M., Kittner, S.J., Lackland, D.T., Lichtman, J.H., Lisabeth, L.D., Magid, D., Marcus, G.M., Marelli, A., Matchar, D.B., McGuire, D.K., Mohler, E.R., Moy, C.S., Mussolino, M.E., Nichol, G., Paynter, N.P., Schreiner, P.J., Sorlie, P.D., Stein, J., Turan, T.N., Virani, S.S., Wong, N.D., Woo, D., Turner, M.B.; on behalf of the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart Disease and Stroke Statistics—2013 Update: A Report from the American Heart Association. *Circulation*. 127:e6-e245.
- Gornick, M.E., Eggers, P.W., Reilly, T.W., Mentnech, R.M., Fitterman, L.K., Kucken, L.E. and B.C. Vladeck. 1996. Effects of Race and Income on Mortality and Use of Services among Medicare Beneficiaries. *New England Journal of Medicine*. 335:791–99.
- Gove, W.R. 1994. Why We Do What We Do: A Biopsychosocial Theory of Human Motivation. *Social Forces*. 73(2):363-394.
- Government Accountability Office. 2012. Federal Disaster Assistance: Improved Criteria Needed to Assess a Jurisdiction’s Capability to Respond and Recover on Its Own. GAO-12-838.
- Grachev, I.D., Fredickson, B.E. and A.V. Apkarian. 2001. Dissociating Anxiety from Pain: Mapping the Neuronal Marker N-acetyl Aspartate to Perception Distinguishes Closely Interrelated Characteristics of Chronic Pain. *Molecular Psychiatry*. 6(3):256–260.
- Green, B.L., Lindy, J.D., Grace, M.C., Gleser, G.C., Leonard, A.C., Korol, M. and C. Winget. 1990. Buffalo Creek Survivors in the Second Decade: Stability of Stress Symptoms. *American Journal of Orthopsychiatry*. 60(1):43-54.
- Green, N. C. 1900. *The Story of the Galveston Hurricane*. Baltimore: R.H. Woodward Co.

- Gum, A.M., King-Kallimanis, B. and R. Kohn. 2009. Prevalence of Mood, Anxiety, and Substance—Abuse Disorders for Older Americans in the National Comorbidity Survey Replication. *American Journal of Geriatric Psychiatry*. 17:769–781.
- Gunnin, L. 2008. Residents Affected by Illinois Flooding Go Home for Now Flood Waters Beginning to Subside; More Rain Expected. Yahoo Contributor Network. <http://voices.yahoo.com/residents-affected-illinois-flooding-go-home-for-1320747.html?cat=12>
- Gur, A., Cevik, R., Sarac, A.J., Colpan, L. and S. Em. 2004. Hypothalamic–Pituitary–Gonadal Axis and Cortisol in Young Women with Primary Fibromyalgia: The Potential Roles of Depression, Fatigue, and Sleep Disturbance in the Occurrence of Hypocortisolism. *Annals of the Rheumatic Diseases*.63:1504-1506.
- Haas, J.E., Kates, R. and M. Bowden. 1977. *Reconstruction Following Disaster*. Cambridge: MIT Press.
- Hagerty, C.L and J.L. Ramseur. 2010. Deepwater Horizon Oil Spill: Selected Issues for Congress. *Congressional Research Service*. R41262. <http://www.fas.org/sgp/crs/misc/R41262.pdf>
- Halstead, M. 1900. *Galveston: The Horrors of a Stricken City*. Chicago: American Publishers Association.
- Hamilton, A. 1775. The Farmer Refuted in *The Papers of Alexander Hamilton*. Syrett, H.C. ed. New York: Columbia University Press.
- Harris, T., Kovar, M.G., Suzman, R., Kleinman, J.C. and J.J. Feldman. 1989. Longitudinal Study of Physical Ability in the Oldest Old. *American Journal of Public Health*. 79:698-702.
- Harvey, D. 2000. Cosmopolitanism and the Banality of Geographical Evils. *Public Culture*.12(2):529–564.
- Hauenstein, E. 2003. No Comfort in the Rural South: Women Living Depressed. *Archives of Psychiatric Nursing*. 17(1):3-11.
- Hazelwood, K.M. and T.J. Bazan. 2010. *Federal Funds to State Agencies FY 2008–FY 2010 Annual Report to the Illinois General Assembly*. Nineteenth Edition. Publication No. 351. Legislative Research Unit.
- Hay, A.M. 1995. Concepts of Equity, Fairness and Justice in Geographical Studies. *Transactions of the Institute of British Geographers, New Series*. 20(4):500-508.
- Haynie, D.A., Berg, S., Johansson, B., Gatz, M., and S.H. Zarit. 2001. Symptoms of Depression in the Oldest Old: A Longitudinal Study. *Journal of Gerontology: Series B. Psychological Sciences and Social Sciences*. 56B:111–P118.

- HCUP CCS. 2014. Healthcare Cost and Utilization Project (HCUP) Agency for Healthcare Research and Quality, Rockville, MD. [www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp](http://www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp).
- Health Services Research and Development Center. 2011. *The Johns Hopkins ACG Case-Mix System, Version 10.0*. Baltimore: The Johns Hopkins University.
- Heartland News. 2008. Low-Interest Loans Available in 19 Southern Illinois Counties after Flood. <http://www.wistv.com/story/8068268/low-interest-loans-available-in-19-southern-illinois-counties-after-flood>
- Helgason, T., Tomasson, H. and T. Zoega. 2004. Antidepressants and Public Health in Iceland: Time Series Analysis of National Data. *British Journal of Psychiatry*. 184:157-162.
- Herman, E. 1995. *The Romance of American Psychology: Political Culture in the Age of Experts*. Berkeley: University of California Press.
- Herrmann, C., Brand-Driehorst, S., Kaminsky, B., Leibing, E., Staats, H. and U. Ruger. 1998. Diagnostic Groups and Depressed Mood as Predictors of 22-month Mortality in Medical Inpatients. *Psychosomatic Medicine*. 60:570-7.
- Hevern, E. 2011. Teams Assessing Flood Damage in Cairo. *Southeast Missourian*. <http://www.semissourian.com/story/1730506.html>
- Hobfoll, S.E. 1988. *The Ecology of Stress*. Washington, DC: Hemisphere.
- Hobfoll, S.E. 1989. Conservation of Resources: A New Attempt at Conceptualizing Stress. *American Psychologist*. 44(3):513-524.
- Hobfoll, S.E. 2001. The Influence of Culture, Community, and the Nested-Self in the Stress Process: Advancing Conservation of Resources Theory. *Applied Psychology: An International Review*. 50(3):337-369.
- Hobfoll, S.E. and A.P. Jackson. 1991. Conservation of Resources in Community Intervention. *American Journal of Community Psychology*. 19(1):111-121.
- Holman, E.A. and R.C. Silver. 2011. Health Status and Health Care Utilization Following Collective Trauma: A 3-year National Study of the 9/11 Terrorist Attacks in the United States. *Social Science and Medicine*. 73:483-490.
- Homan, J. 2008. Harrisburg Chose not to Participate in National Flood Program. *The Southern*. [http://thesouthern.com/news/breaking/article\\_f00ae21d-3828-5fe6-b450-caa5f7d8b59c.html#ixzz1acclAu9q](http://thesouthern.com/news/breaking/article_f00ae21d-3828-5fe6-b450-caa5f7d8b59c.html#ixzz1acclAu9q)
- Homeland Security Presidential Directive/HSPD-21. 2007. *The White House*. <http://georgewbush-whitehouse.archives.gov/news/releases/2007/10/20071018-10.html>

- Horney, J.A., MacDonald, P.D.M., Van Willigen, M. and J.S. Kaufman. 2011. The Importance of Effect Measure Modification When Using Demographic Variables to Predict Evacuation. *Risk Hazards & Crisis in Public Policy*. Manuscript 1084.
- Housing Assistance Council. 2006. CDBG Works for Rural Communities. *Rural Voices*. [http://www.ssorg.org/forms/HAC\\_Article.pdf](http://www.ssorg.org/forms/HAC_Article.pdf)
- Housing Assistance Council. 2012. HOME Works for Rural Communities. *Rural Voices*. 17(1). <http://www.ruralhome.org/storage/documents/rv-spring2012-web.pdf>
- Hoyt, D. R., Conger, R. D., Gaffney Valde, J. and Weihs, K. Psychological Distress and Help Seeking in Rural America. *American Journal of Community Psychology*. 25(4):449–470.
- HVRI SHELDUS. Spatial Hazards Events and Losses for the United States. <http://webra.cas.sc.edu/hvri/products/sheldus.aspx>.
- Hughes, J. S., Averill, R. F., Eisenhandler, J., Goldfield, N. I., Muldoon, J., Neff, J. M. and J. C. Gay. 2004. Clinical Risk Groups (CRGs): A Classification System for Risk-Adjusted Capitation-Based Payment and Health Care Management. *Medical Care*. 42(1):81–90.
- Hulse, C. 2011. Federal Austerity Changes Disaster Relief. *New York Times*. <http://www.nytimes.com/2011/08/31/us/politics/31disaster.html>
- Human Rights Education Associates. 2003. The Rights of the Aged. [http://www.hrea.org/index.php?base\\_id=162](http://www.hrea.org/index.php?base_id=162)
- Hurtado, J. 2008. Jeremy Bentham and Gary: Utilitarianism and Economic Imperialism. *Journal of the History of Economic Thought*. 30(3): 335-357.
- Husted, T. and D. Nickerson. 2013. Political Economy of Presidential Disaster Declarations and Federal. *Public Finance Review*. 42:35-57.
- Ignatieff, M. 2005. The Way We Live Now: The Broken Contract. *New York Times* [http://www.nytimes.com/2005/09/25/magazine/25wwln.html?\\_r=0](http://www.nytimes.com/2005/09/25/magazine/25wwln.html?_r=0)
- Illinois Association of Community Action Associations. 2009. Illinois 2009 Community Services Block Grant (CSBG) Report. <http://www.iacaanet.org/documents/CSBGReportFinalFinal.pdf>
- Illinois Department of Commerce and Economic Opportunity. 2009. *State of Illinois Action Plan. Supplemental CDBG Disaster Recovery 1800 (Ike) Funding from the Supplemental Appropriations Act*. Public Law 110-329, 2008.

- Illinois Department of Commerce and Economic Opportunity. 2009a. Delta Regional Authority, Illinois Five-Year Plan. State of Illinois.  
[http://www.dra.gov!/userfiles/editor/docs/IL\\_2009%20DRA%20Plan.pdf](http://www.dra.gov!/userfiles/editor/docs/IL_2009%20DRA%20Plan.pdf)
- Illinois Department of Human Services. 2008. Crisis Counseling Services for Area Flood Victims. <http://www.dhs.state.il.us/page.aspx?item=37357>
- Illinois Department of Public Health. 2013. Illinois Behavioral Risk Factor Surveillance System. County Prevalence Data.  
[http://app.idph.state.il.us/brfss/countydata.asp?selTopicCounty=hlthstat&areaCounty=Putlaski\\_77&show=freq&yrCounty=4&form=county&yr=&area=&selTopic=](http://app.idph.state.il.us/brfss/countydata.asp?selTopicCounty=hlthstat&areaCounty=Putlaski_77&show=freq&yrCounty=4&form=county&yr=&area=&selTopic=)
- Illinois Government News Network. 2008. Governor Blagojevich's Request for Agricultural Disaster Declaration Approved - Declaration will Assist Farmers in 91 Illinois Counties.  
<http://www3.illinois.gov/PressReleases/ShowPressRelease.cfm?SubjectID=3&RecNum=7003>
- Illinois Government News Network. 2008a. Governor Blagojevich Announces Nearly \$1 Million in Grants to Address Local Flooding Concerns-Grants to Support Critical Repairs in Alexander and Union Counties.  
<http://www3.illinois.gov/PressReleases/ShowPressRelease.cfm?SubjectID=2&RecNum=7251>
- Illinois Government News Network. 2009. Governor Pat Quinn Announces Federal Assistance for Illinoisans Recovering from Last Year's Severe Weather - Disaster Assistance Program Providing \$30 million to Help Families in 29 Counties Rebuild and Recover.  
<http://www3.illinois.gov/PressReleases/ShowPressRelease.cfm?SubjectID=2&RecNum=7444>
- Illinois Government News Network. 2013. Governor Quinn Announces \$6.6 Million in Infrastructure Investments in Southern Illinois Communities-Part of \$14 Million for Critical Public Works and Low-Income Home Rehabilitation Projects.  
<http://www3.illinois.gov/PressReleases/ShowPressRelease.cfm?SubjectID=5&RecNum=11675>
- Illinois Housing Development Authority. 2013. New Statewide Program Helps Homeowners Afford Critical Home Repairs.  
[http://www.ihda.org/about/documents/93013\\_IHDAEmergencyRepairSOUTHERN.pdf](http://www.ihda.org/about/documents/93013_IHDAEmergencyRepairSOUTHERN.pdf)
- Illinois Housing Development Authority. 2014. About Us. <http://www.ihda.org/about/index.htm>
- Illinois State Treasurer. 2014. Opportunity Illinois Disaster Recovery Loan Program.  
<http://www.willcountyema.org/PDFs/FAQDisasterRecovery.pdf>

- Inder, K.J., Lewin, T.J. and B.J. Kelly. 2012. Factors Impacting on the Well-Being of Older Residents in Rural Communities. *Perspectives in Public Health*. 132(4):182-191.
- Ishii, T., Hosoda, Y. and K. Maeda K. 1980. Cause of Death in the Extreme Aged - A Pathologic Survey of 5106 Elderly Persons 80 Years Old and Over. *Age and Ageing*. 9(2):81-89.
- Johnson, W. F. 1889. *History of the Johnstown Flood*. Edgewood Publishing Co.
- Johnson, K. 2012. Hip Fractures on the Rise in the Extreme Elderly. *Medscape Medical News*. <http://www.medscape.com/viewarticle/765604>
- Kaiser Family Foundation. 1999. *Race & Ethnic Differences in Access to Medical Care: A Synthesis of the Literature*. Menlo Park, CA: Henry J. Kaiser Family Foundation; Prepared by the Morehouse Medical Treatment and Effectiveness Center for the Henry J Kaiser Family Foundation.
- Kane, T. 2013. One Year after Tornado, Harrisburg, Ridgway Mayors Look to the Future. Daily Register.com 1 March. <http://www.dailyregister.com/article/20130301/NEWS/130309895>
- Kaufman, B. E. 1999. Emotional Arousal as a Source of Bounded Rationality. *Journal of Economic Behavior & Organization*. 38:135-144.
- Kernell, S. 1977. Presidential Popularity and Negative Voting: An Alternative Explanation of the Midterm Congressional Decline of the President's Party. *The American Political Science Review*. 71(1):44-66.
- Kenyon, C A. 2000. Hormones and Stress: The Pituitary-Adrenal Axis in Learning and Memory. University of Plymouth-Dept of Psychology. <http://www.flyfishingdevon.co.uk/salmon/year1/stressho.htm>
- Kilijanek, T. S., and T. Drabek. 1979. Assessing Long-term Impacts of a Natural Disaster: A Focus on the Elderly. *The Gerontologist*. 19(6):555-565.
- Klein, N. 2007. *The Shock Doctrine: The Rise of Disaster Capitalism*. New York: Picador
- Klein, E. 2011. The Sad, Hypocritical Retirement of Evan Bayh. *The Washington Post*, 15 March. [http://www.washingtonpost.com/blogs/wonkblog/post/the-sad-hypocritical-retirement-of-evan-bayh/2011/03/10/AB4MZzY\\_blog.html](http://www.washingtonpost.com/blogs/wonkblog/post/the-sad-hypocritical-retirement-of-evan-bayh/2011/03/10/AB4MZzY_blog.html)
- Kingdon, J.H. 2003. *Agendas, Alternatives, and Public Policies*. New York: Longman.
- Kleinberg, E. 2003. *Black Cloud: The Deadly Hurricane of 1928*. New York: Carroll & Graf Publishers.

- Klinenberg, E. 2002. *Heat Wave: A Social Autopsy of Disaster in Chicago*. Chicago: The University of Chicago Press.
- Knobloch, D.M. 2005. Moving a Community in the Aftermath of the Great 1993 Midwest Flood. *Journal of Contemporary Water Research and Education*. 130:41-45.
- Knowles, S.G. 2011. *The Disaster Experts: Mastering Risk in Modern America*. Philadelphia: University of Pennsylvania Press.
- Korszun, A., Papadopoulos, E., Demitrack, M., Engleberg, C. and L. Crofford. 1998. The Relationship between Temporomandibular Disorders and Stress-Associated Syndromes. *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology and Endodontology*. 86(4):416-20.
- Korte, G. 2011. FEMA Stretched Numbers to Avert Funding Crisis. *USA Today*.  
<http://usatoday30.usatoday.com/news/washington/story/2011-09-27/FEMA-disaster-funding/50575534/1>
- Kousky, C. and L. Shabman. 2012. The Realities of Federal Disaster Aid: The Case of Floods. *Resources For The Future*. Issue Brief 12-02.
- Kousky, C., Michel-Kerjan, E.O., and P. A. Raschky. 2013. Does Federal Disaster Assistance Crowd Out Private Demand for Insurance? Working Paper #2013-10. *Risk Management and Decision Processes Center*. The Wharton School, University of Pennsylvania.
- Krause, N. 1987. Exploring the Impact of a Natural Disaster on the Health and Psychological Well-being of Older Adults. *Journal of Human Stress*. 13:61-69
- Kristenson, M., Eriksen, H.R., Sluiter, J.K., Starke, D., and H. Ursin. 2004. Psychobiological Mechanisms of Socioeconomic Differences in Health. *Social Science and Medicine*. 58: 1511–1522.
- Kroenke, K., Wood, D.R., Mangelsdorff, A.D., Meier, N.J. and J.B. Powell. 1988. Chronic Fatigue in Primary Care. Prevalence, Patient Characteristics, and Outcome. *JAMA*. 206:929-34.
- Krueger, A.B. 2005. *At FEMA, Disasters and Politics Go Hand in Hand*. The New York Times.  
[http://www.nytimes.com/2005/09/15/business/15scene.html?pagewanted=all&\\_r=0](http://www.nytimes.com/2005/09/15/business/15scene.html?pagewanted=all&_r=0)
- Kusenbach, M. 2006. Patterns of Neighboring: Practicing Community in the Parochial Realm. *Symbolic Interaction*. 29(3):279-306.
- Lambiase, M.J., Kubzansky, L.D. and R.C. Thurston. 2014. Prospective Study of Anxiety and Incident Stroke. *Stroke*. 45: 438-443



- Landis, M. 1998. Let Me Next Time be 'Tried by Fire: Disaster Relief and the Origins of the American Welfare State, 1789-1874. *Northwestern Law Review*. 92(3).
- Lau, D.T., Kasper, J.D., Potter, D.E., Lyles, A. and R.G. Bennett. 2005. Hospitalization and Death Associated with Potentially Inappropriate Medication Prescriptions among Elderly Nursing Home Residents. *Archives of Internal Medicine*.165: 68–74.
- Lau, R.R. 1985. Two Explanations for Negativity Effects in Political Behavior. *American Journal of Political Science*. 29(1):119-138.
- Lawrence, S. A., and B.J. McCulloch. 2001. Rural Mental Health and Elders: Historical Inequities. *The Journal of Applied Gerontology*. 20(2):144-169.
- Lee, R. T., and B.E. Ashforth. 1996. A Meta-Analytic Examination of the Correlates of the Three Dimensions of Job Burnout. *Journal of Applied Psychology*. 81:123-133.
- Lenze, E.J. 2003. Comorbidity of Depression and Anxiety in the Elderly. *Current Psychiatry Reports*. 5(1): 62-67.
- Lerner, W. 1975. Historical Statistics of the United States, Colonial Times to 1970.Part 1. Bureau of the Census. <http://purl.access.gpo.gov/GPO/LPS55561>
- Letvak, S. 2002. The Importance of Social Support for Rural Mental Health. *Issues in Mental Health Nursing*. 23(3):249-261.
- Lewis, J. D. transl. 1890. *The Letters of the Younger Pliny*. London: Kegan Paul, Trench, Kubner & Co., Ltd.
- Liang, N.J., Shih, Y.T., Shih, F.Y., Wu, H.M., Wang, H.J., Shi, S.F., Liu, M.Y. and B.B. Wang. 2001. Disaster Epidemiology and Medical Response in the Chi-Chi Earthquake in Taiwan. *Annals of Emergency Medicine*. 38(5):549–55.
- Lindsay, B.R. 2010. The SBA Disaster Loan Program: Overview and Possible Issues for Congress. *Congressional Research Service*. R41309. [http://assets.opencrs.com/rpts/R41309\\_20100629.pdf](http://assets.opencrs.com/rpts/R41309_20100629.pdf)
- Lindsay, B.R. and F.X. McCarthy. 2012. Stafford Act Declarations 1953-2011: Trends and Analyses, and Implications for Congress. Congressional Research Service. R42702. <http://www.fas.org/sgp/crs/homsec/R42702.pdf>
- Lindsay, B. and J. Murray. 2010. Disaster Relief Funding and Emergency Supplemental Appropriations, Congressional Research Service. R40708. <https://www.fas.org/sgp/crs/misc/R40708.pdf>

- Linton, S.J. 2000. A Review of Psychological Risk Factors in Back and Neck Pain. *Spine*. 25(9):1148-1156.
- Liu, E.C. 2008. Flood Insurance Requirements for Stafford Act Assistance. Congressional Research Service. RS22945. <http://research.policyarchive.org/18839.pdf>
- Loewen, J. 2005. *Sundown Towns: A Hidden Dimension of American Racism*. New York: The New Press.
- Lofland, L. 1998. *The Public Realm: Exploring the City's Quintessential Social Theory*. Piscataway: Aldine Transaction.
- Louisiana Department of Insurance. 2010. RE: Revised Criteria-Stafford Act Certifications for Louisiana. [http://ldi.state.la.us/Whats\\_New/StaffordAct-Obama.PDF](http://ldi.state.la.us/Whats_New/StaffordAct-Obama.PDF)
- Lumsden, C. J. 1983. Cultural Evolution and the Devolution of Tabula Rasa. *Journal of Social and Biological Structures*. 6(2):101-114.
- Lutgendorf, S K., Antoni, M.H., Ironson, G., Fletcher, M.A., Penedo, F., Baum, A., Schneiderman, N. and N. Klimas. 1995. Physical Symptoms of Chronic Fatigue Syndrome are Exacerbated by the Stress of Hurricane Andrew. *Psychosomatic Medicine* 57: 310-323.
- Lynch, K. 2012. Social Services Block Grant: Background and Funding. Congressional Research Service. 7-5700. <http://www.fas.org/sgp/crs/misc/94-953.pdf>
- Madakasira S. and K.F. O'Brien. 1987. Acute Posttraumatic Stress Disorder in Victims of a Natural Disaster. *Journal of Nervous and Mental Disorders* 175:286-90.
- Marks, E. S. and C. E., Fritz. 1954. Human Reactions in Disaster Situations. *National Opinion Research Center*. Chicago: University of Chicago .
- Marshall, L. 1913. *The True Story of our National Calamity of Flood, Fire and Tornado*. L.T. Myers.
- Marx, K. 1857. Karl Marx's Outline of the Critique of Political Economy (Grundrisse). <http://www.marxists.org/archive/marx/works/1857/grundrisse/ch01.htm>
- Marx, K. 1875. Critique of the Gotha Programme in *Marx/Engels Selected Works Volume 3*. Moscow: Progress Publishers.
- Massey, D. 1994. *Space, Place, and Gender*. Minneapolis: University of Minnesota Press.
- May, P.J. 1985. *Recovering from Catastrophes: Federal Disaster Relief Policy and Politics*. Westport: Greenwood.

- Mayer, J.D. 1996. The Political Ecology of Disease as One New Focus for Medical Geography *Progress in Human Geography*. 20(4):441-456.
- Mayer, J.D. and M.S. Meade. 1994. A Reformed Medical Geography Reconsidered. *The Professional Geographer*. 46(1):103-106.
- Mayer, E.A. 2000. The Neurobiology of Stress and Gastrointestinal Disease. *Gut* 47:861–869.
- Maynard, C. and G.B. Cox. 1998. Psychiatric Hospitalization of Persons with Dual Diagnoses: Estimates from Two National Surveys. *Psychiatric Services*. 49:1615–1617.
- McCarthy, F.X. 2010. FEMA Disaster Cost-Shares: Evolution and Analysis. *Congressional Research Service*. R41101. [http://assets.opencrs.com/rpts/R41101\\_20100309.pdf](http://assets.opencrs.com/rpts/R41101_20100309.pdf)
- McCarthy, F.X. 2011. FEMA's Disaster Declaration Process: A Primer. *Congressional Research Service*. RL34146. <http://www.fas.org/sgp/crs/homsec/RL34146.pdf>
- McCarthy, F.X. 2011a. Federal Stafford Act Disaster Assistance: Presidential Declarations, Eligible Activities, and Funding. Congressional Research Service. RL33053. <http://www.fas.org/sgp/crs/homsec/RL33053.pdf>
- McCoy, K. 2008. FEMA Denies Disaster Relief to Southern Illinois. *Mt. Vernon Register-News*. <http://register-news.com/local/x2143192398/FEMA-denies-disaster-relief-to-Southern-Illinois>
- McCreight, S. 2009. Catalog of State Assistance to Local Governments. Thirteenth Edition. Publication No. 347. Illinois General Assembly. <http://ilga.gov/commission/lru/SALG.pdf>
- McEwen, B. 2000. Allostasis and Allostatic Load: Implications for Neuropsychopharmacology. *Neuropsychopharmacology*. 22(1):108-124.
- McGlown, K.J. and P. Robinson. 2011. *Anticipate, Respond, Recover: Healthcare Leadership and Catastrophic Events (American College of Healthcare Executives Management Series)*. Chicago: Health Administration Press.
- McEwen BS, Gianaros PJ. 2011. Stress- and Allostatic-Induced Brain Plasticity. *Annual Review of Medicine*. 62:431–45.
- McGuirk, P. 2011. Policy Research as Critical Praxis. *Dialogues in Human Geography*. 1(2):233–237.
- Meade, M. S. 1977. Medical Geography as Human Ecology: The Dimension of Population Movement. *Geographical Review*. 67:379-93.

- Mechakra-Tahiri, D.S., Dubé, M., Zunzunegui, M.V., Préville, M., Berbiche, D. and J. Brass. 2013. Pattern of Change of Depressive Disorder over a One-Year Period among Community-Dwelling Older Adults in Québec. *Depression Research and Treatment*.
- Mechanic, D., McAlpine, D. D. and M. Olfson. 1998. Changing Patterns of Psychiatric Inpatient Care in the United States, 1988–1994. *Archives of General Psychiatry*. 55:785–791.
- Mendes, E. and J. Wilke. 2013. Americans' Confidence in Congress Falls to Lowest on Record. *Gallup Politics*. [http://www.gallup.com/poll/163052/americans-confidence-congress-falls-lowest-record.aspx?utm\\_source=add\\_this&utm\\_medium=addthis.com&utm\\_campaign=sharing](http://www.gallup.com/poll/163052/americans-confidence-congress-falls-lowest-record.aspx?utm_source=add_this&utm_medium=addthis.com&utm_campaign=sharing)
- Miller, B. 1992. Collective Action and Rational Choice: Place, Community, and the Limits to Individual Self-Interest. *Economic Geography*. 68(1):22-47.
- Miskel, J.F. 2008. *Disaster Response and Homeland Security: What Works, What Doesn't*. Palo Alto: Stanford University Press.
- Mizyed, I., Fass, S.S. and R. Fass. 2009. Review Article: Gastro-Oesophageal Reflux Disease and Psychological Comorbidity. *Alimentary Pharmacology and Therapeutics*. 29:351–58.
- Morris, A.J. 2011. Psychic Aftershocks: Crisis Counseling and Disaster Relief Policy. *History of Psychology*. 14(3):264-286.
- Morris, C. 1906. *The San Francisco Calamity by Earthquake and Fire*. Philadelphia: The John C. Winston Co.
- Moss, D. 1999. Courting Disaster? The Transformation of Federal Disaster Policy since 1803 in *The Financing of Catastrophe Risk*. Froot, K.A. ed. Chicago: University of Chicago Press.
- Moss, M., Schellhamer, C., and D.A. Berman. 2009. The Stafford Act and Priorities for Reform. *Journal of Homeland Security and Emergency Management* 6(1).
- Muirhead, R. 2003. In Defense of Partisanship. *2003 Annual Meeting of the American Political Science Association*. American Political Science Association.
- Muirhead, R. 2010. Can Deliberative Democracy be Partisan? *Critical Review: A Journal of Politics and Society*. 22(2-3):129-157.
- Munich Reinsurance Company. 2013. 2012 Natural Catastrophe Year in Review. [http://www.munichre.com/site/corporate/get/documents\\_E1674687591/mr/assetpool.shared/Documents/5\\_Touch/\\_NatCatNews/2012-natural-catastrophe-year-in-review-en.pdf](http://www.munichre.com/site/corporate/get/documents_E1674687591/mr/assetpool.shared/Documents/5_Touch/_NatCatNews/2012-natural-catastrophe-year-in-review-en.pdf)

- Musgrave, J. 1996. Welcome to New Egypt. *American Weekend*.  
<http://www.illinoishistory.com/egypt.htm>
- Nakagawa, Y. and R. Shaw. 2004. Social Capital: A Missing Link to Disaster Recovery. *International Journal of Mass Emergencies and Disasters*. 22(1):5-34.
- National Association for State Community Services Programs. 2014. CSBG.  
<http://www.nascsp.org/CSBG.aspx>
- National Center for Higher Education Management Systems Information Center for State Higher Education Policymaking and Analysis. 2007. State Tax Capacity - Total Taxable Resources Per Capita.  
<http://www.higheredinfo.org/dbrowser/index.php?year=1992&level=nation&mode=map&state=0&submeasure=132>
- National Center for PTSD. 2013. Understanding PTSD.  
[http://www.ptsd.va.gov/public/understanding\\_ptsd/booklet.pdf](http://www.ptsd.va.gov/public/understanding_ptsd/booklet.pdf)
- National Institute of Mental Health. 2010. The National Institute of Mental Health Strategic Plan. <http://www.nimh.nih.gov/about/strategic-planning-reports/index.shtml>
- National Park Service. 2007. 1906 earthquake: Chinese displacement.  
<http://www.nps.gov/prsf/historyculture/1906-earthquake-chinese-treatment.htm>
- National Research Council Committee on Population Expert Meeting. 2009. Advancing Behavioral and Social Research on the Elderly in Disasters. *The National Academies*.  
[http://www.nia.nih.gov/sites/default/files/meeting-report\\_2.pdf](http://www.nia.nih.gov/sites/default/files/meeting-report_2.pdf)
- National Rural Health Association. 2013. HHS Report on Critical Access Hospitals Misses the Mark. *Rural Health Voices*. <http://blog.ruralhealthweb.org/2013/08/hhs-report-on-critical-access-hospitals-misses-the-mark-2/>
- Nelson, R.J. 2005. *An Introduction to Behavioral Endocrinology*. 3rd ed. Sunderland, MA: Sinauer Associates.
- Neugebauer, V., Li, W., Bird, G.C. and J.S. Han. 2004. The Amygdala and Persistent Pain. *The Neuroscientist*. 10:221–234.
- Nicholson, R.A., Houle, T.T., Rhudy, J.L. and P.J. Norton. 2007. Psychological Risk Factors in Headache. *Headache*. 47:413–426.
- Nilsson, B. 2010. *The Immune System in the Oldest-Old Clinical and Immunological Studies in the NONA Immune Cohort*. Linköping : Linköping University Electronic Press.

- Norris, D.W. 2012. Board Approves FEMA, State Grant to Buy Out Floodplain Land. *The Southern*. [http://thesouthern.com/news/local/board-approves-fema-state-grant-to-buy-out-floodplain-land/article\\_440c4f88-1813-11e2-8584-001a4bcf887a.html](http://thesouthern.com/news/local/board-approves-fema-state-grant-to-buy-out-floodplain-land/article_440c4f88-1813-11e2-8584-001a4bcf887a.html)
- Norris, F. H. and S. A. Murrell. 1988. Prior Experience as a Moderator of Disaster Impact on Anxiety Symptoms in Older Adults. *American Journal of Community Psychology*. 16 (5): 665-683.
- Norris, F. H., Phifer, J.F. and K. Kaniasty. 2001. Individual and Community Reactions to the Kentucky Floods: Findings from a Longitudinal Study of Older Adults in *Individual and Community Responses to Trauma and Disaster*. eds. R. J. Ursano, B. G. McCaughey and C. S. Fullerton. Cambridge, MA: Cambridge University Press.
- Norris, F. H., Friedman, F. J., Watson, P. J. , Byrne, C. M., Diaz, E. and K. Kaniasty. 2002. 60,000 Disaster Victims Speak: Part I. An Empirical Review of the Empirical Literature, 1981-2001. *Psychiatry*. 65 (3): 207-239.
- Norris, F. H., Friedman, F. J. and P. J. Watson. 2002. 60,000 Disaster Victims Speak: Part II. Summary and Implications of the Disaster Mental Health Research. *Psychiatry*. 65 (3): 240-260.
- Norris, F.H., Stevens, S.P., Pfefferbaum, B., Wyche, K.F. and R.L. Pfefferbaum. 2008. Community Resilience as a Metaphor, Theory, Set of Capacities, and Strategy for Disaster Readiness. *American Journal of Community Psychology*. 41:127–150.
- Noyes, R. 2001. Comorbidity in Generalized Anxiety Disorder. *Psychiatric Clinics of North America*. 24(1):41-55.
- Office of the Assistant Secretary for Preparedness and Response. 2008. Summary of HHS Disaster Behavioral Health Assets and Capabilities. <http://www.phe.gov/Preparedness/planning/abc/Documents/sum-hhs-disasterbehavioralhealth.pdf>
- Office of Emergency Preparedness. 1972. *Report to Congress: Disaster Preparedness*. Washington, D.C.: U.S. Government Printing Office.
- Office of Sustainability. 2009. *Long Term Recovery Council Final Report to Governor Pat Quinn & the People of Illinois: Aftermath of the Floods of June 2008 & Recommendations for Long-term Economic Recovery*. University of Illinois at Urbana-Champaign. [http://sustainability.illinois.edu/pdfs/LTRC\\_Final\\_Report\\_\(121509\)\\_red.pdf](http://sustainability.illinois.edu/pdfs/LTRC_Final_Report_(121509)_red.pdf)
- O’Keefe J.H., Poston, W.S., Haddock, C.K., Moe, R.M. and W. Harris. 2004. Psychosocial Stress and Cardiovascular Disease: How to Heal a Broken Heart. *Comprehensive Therapy*. 30(1):37-43.

- Okura, K. P. 1975. Mobilizing in Response to a Major Disaster. *Community Mental Health Journal*. 11(2): 136-143.
- Oregon State University. 2004. Federal Disaster Assistance Program. <http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/20369/em8871-e.pdf>
- Oliver-Smith, A. 1999. "What is a Disaster?": Anthropological Perspectives on a Persistent Question in *The Angry Earth: Disaster in Anthropological Perspective*. Oliver-Smith, A. and S. Hoffman, eds. New York: Routledge pp 29-30.
- Omer, I. 2006. Evaluating Accessibility Using House-Level Data: A Spatial Equity Perspective. *Computers, Environment and Urban Systems*. 30:254–274
- Oskin, B. 2014. Thanks to Active New Madrid Fault Zone, Midwest Earthquake Risk Still Looms. Live Science. <http://www.weather.com/news/science/thanks-active-new-madrid-fault-zone-midwest-earthquake-risk-still-looms-20140124>
- Painter, W.L. 2012. Offsets, Supplemental Appropriations, and the Disaster Relief Fund: FY1990-FY2013. Congressional Research Service. R42458. <http://www.fas.org/sgp/crs/misc/R42458.pdf>
- Painter, W.L. and J.T. Brown. 2013. FY2013 Supplemental Funding for Disaster Relief. *Congressional Research Service*. R42869. <http://www.fas.org/sgp/crs/misc/R42869.pdf>
- Pais, J.F. and J.R. Elliott. 2008. Places as Recovery Machines: Vulnerability and Neighborhood Change after Major Hurricanes. *Social Forces*. 86(4):1415-1453.
- Panagiotakos, D.B., Chrysohoou, C., Siasos, G., Zisimos, K., Skoumas, J., Pitsavos, C. and C. Stefanadis. 2011. Sociodemographic and Lifestyle Statistics of Oldest Old People (>80 years) Living in Ikaria Island: The Ikaria Study. *Cardiology Research and Practice*. 1: 679187.
- Pease, S. J. 1928. *Mail Story of the Flood*. Concord: Concord Press.
- Pelling, M. and K. Dill. 2010. Disaster Politics: Tipping Points for Change in the Adaptation of Sociopolitical Regimes. *Progress in Human Geography*. 34(1):21-37.
- Perlstein, R. 2001. *Before the Storm: Barry Goldwater and the Unmaking of the American Consensus*. New York: Hill and Wang.
- Peterson, P. 1995. *The Price of Federalism*. Washington, D.C.: The Brookings Institution.

- Phifer, J., Kaniasty, K.Z. and F.H. Norris. 1988. The Impact of Natural Disaster on the Health of Older Adults: A Multiwave Prospective Study. *Journal of Health and Social Behavior*. 29(3):65-78.
- Phifer, J.F. and F.H. Norris. 1989. Psychological Symptoms in Older Adults Following Natural Disaster: Nature, Timing, Duration, and Course. *Journal of Gerontology: Social Sciences*. 44(6):S207-217.
- Pickel, A. 2005. The Habitus Process: A Biopsychosocial Conception. *Journal for the Theory of Social Behavior*. 35(4): 437-461.
- Platt, R. 1999. *Disasters and Democracy-The Politics of Extreme Natural Events*. Washington: Island Press.
- Pleis, J.R., Lucas, J.W. and B.W. Ward. 2009. *Summary Health Statistics for U.S. Adults: National Health Interview Survey, 2008*. National Center for Health Statistics. Vital Health Statistics. 10(242).
- Pliny and W. Melmoth. 1809. *The Letters of Pliny the Consul with Occasional Remarks by William Melmoth*. Esq. Boston: E. Larkin, No. 47, Cornhill.
- Plonczynski, D.J., Yao, P., Hartman, J., West, M. Salacinski, A. and M. Mannion. 2013. Interpersonal and Background Influences on Health Promotion of Older Rural Adults. *Journal of Rural Community Psychology*. E15(1).
- Pottick, K.J., McAlpine, D.D. and R.B. Andelman. 2000. Changing Patterns of Psychiatric Inpatient Care for Children and Adolescents in General Hospitals, 1988-1995. *American Journal of Psychiatry*. 157:1267-1273.
- Property Claim Services. 2014. Your Primary Source of Information on Catastrophes in North America. <http://www.verisk.com/property-claim-services/>
- ProPublica. 2014. Recovery Tracker. <http://projects.propublica.org/recovery/locale/illinois>
- Pryor, E. B. 1988. *Clara Barton: Professional Angel*. Philadelphia: University of Pennsylvania Press.
- Public Health Emergency. 2010. Pandemic and All Hazards Preparedness Act. <http://www.phe.gov/preparedness/legal/pahpa/pages/default.aspx>
- Qin, H. and C. Flint. 2008. *Southern Illinois Agriculture*. Department of Natural Resources and Environmental Sciences. University of Illinois at Urbana-Champaign. pp 1-5.



- Quarantelli, E.L. 1984. *An Assessment of Conflicting Views on the Consequences of Community Disasters for Mental Health*. University of Delaware Disaster Research Center- Preliminary Paper No. 89.
- Quarantelli, E. L. 1988. The NORC Research on the Arkansas Tornado: A Fountainhead Study. *International Journal of Mass Emergencies and Disasters*. 66 (3): 283-310.
- Quattrone, G.A. and A. Tversky. 1988 Contrasting Rational and Psychological Analyses of Political Choice. *The American Political Science Review*. 82(3):719-736.
- Rawls, J. 1993. *Political Liberalism*. New York: Columbia University Press.
- Reacher, M., McKenzie, K., Lane, C., Nichols, T., Kedge, I., Iversen, A., Hepple, P., Walter, T., Laxton, C. and J Simpson. 2004. Health Impacts of Flooding in Lewes: a Comparison of Reported Gastrointestinal and Other Illness and Mental Health in Flooded and Non-Flooded Households. *Communicable Disease and Public Health*. 7(1):1-8.
- Reeves, A. 2011. Political Disaster: Unilateral Powers, Electoral Incentives, and Presidential Disaster Declarations. *The Journal of Politics*. 73(4):1-10.
- Richardson, J. 1897. *A Compilation of the Messages and Papers of the Presidents*. New York: Bureau of National Literature and Art.
- Robert Wood Johnson Foundation. 2013. County Health Rankings & Roadmaps. Health Factors. <http://www.countyhealthrankings.org/our-approach/health-factors>
- Robinson, J.W. 2007. Regression Tree Boosting to Adjust Health Care Cost Predictions for Diagnostic Mix. *HSR: Health Services Research*. 43(2):755-772.
- Rohde, D. 2012. A Year When Government Failed Us. *Reuters*. <http://blogs.reuters.com/david-rohde/2012/12/28/a-year-when-government-failed-us/>
- Rost, K., Fortney, J., Fischer, E. and J., Smith. 2002. Use, Quality, and Outcomes of Care for Mental Health: The Rural Perspective. *Medical Care Research and Review*. 59:231-265.
- Rothkopf, D. 2013. Ho-hum Reaction to Shutdown Says it All. CNN Opinion. [http://www.cnn.com/2013/10/04/opinion/rothkopf-shutdown-depression/index.html?hpt=hp\\_t4](http://www.cnn.com/2013/10/04/opinion/rothkopf-shutdown-depression/index.html?hpt=hp_t4)
- Roy-Byrne, P.P., Davidson, K.W., Kessler, R.C., et al. 2008. Anxiety Disorders and Comorbid Medical Illness. *General Hospital Psychiatry*. 30(3):208-225.
- Rozdilsky, J. 2012. City as Sandbox for Green Building. *Natural Hazards Observer*. XXXVI(5):7-10.

- Rubin, C.B., 2009. Long Term Recovery from Disasters-The Neglected Component of Emergency Management. *Journal of Homeland Security and Emergency Management*. 6(1).
- Rubin, C.B. and J. Colle. 2012. What Keeps Me Up at Night. *Natural Hazards Observer*. XXXVII(2).
- Rupasinha, A. and S.J. Goetz. 2008.US County-Level Social Capital Data, 1990-2005. The Northeast Regional Center for Rural Development. Penn State University, University Park, PA, [http://nercrd.psu.edu/Social\\_Capital/index.html](http://nercrd.psu.edu/Social_Capital/index.html)
- Russell, T. H. 1913. *Story of the Great Flood and Cyclone Disasters*. T.H. Morrison.
- Sachdev, A. 2011. Illinois Among Worst States to Do Business: Survey. *Chicago Tribune News*. [http://articles.chicagotribune.com/2011-09-19/news/chi-illinois-among-worst-states-to-do-business-survey-20110919\\_1\\_business-climates-cme-group-illinois](http://articles.chicagotribune.com/2011-09-19/news/chi-illinois-among-worst-states-to-do-business-survey-20110919_1_business-climates-cme-group-illinois)
- Sack, R. 1997. *Homo Geographicus: A Framework for Action, Awareness and Moral Concern*. Baltimore: John Hopkins University Press.
- Saczynski J.S., Beiser, A., Seshadri, S., Auerbach, S., Wolf, P.A. and R. Au. 2010. Depressive Symptoms and Risk of Dementia: The Framingham Heart Study. *Neurology*. 75:35–41.
- Salkowe, R. 2010. Access to Quality: Poverty, Race, and Medicaid Related Health Care Disparities in Hillsborough County, Florida in *Spatial & Environmental Injustice in an American Metropolis: A Study of Tampa Bay, Florida*. Chakraborty, J. and M.M.Bosman eds. Amherst: Cambria Press.
- Salkowe, R. 2010. *Slippery Like Oil: Presidential Power and Disaster Decision Making*. Panelist. 35th Annual Natural Hazards Research and Application Workshop. Natural Hazards Center. Boulder, Colorado.
- Salkowe, R. 2012. Past Disaster Experiences and Behavioral Health Outcomes in *Behavioral Health Response to Disasters*. Teasley, M. and J. Framingham, eds. New York: CRC Press –Taylor & Francis Group.
- Salkowe, R. and J. Chakraborty. 2009. Federal Disaster Relief in the U.S.: The Role of Political Partisanship and Preference in Presidential Disaster Declarations and Turndowns. *Journal of Homeland Security and Emergency Management*. 6(1).
- Salkowe, R. and J. L. Framingham. 2012. Government Roles and Responsibilities in Disaster Behavioral Health Response and Recovery in *Behavioral Health Response to Disasters*. Teasley, M. and J. Framingham, eds. New York: CRC Press –Taylor & Francis Group.

- Salkowe, R., G. A. Tobin and S. E. Bird. 2006. Calamity, Catastrophe & Horror: Representation of Natural Disaster 1885-2005. *Papers of the Applied Geography Conferences*. 29: 196-205
- Sandefur, M. 2008. County OKs Delay of Due Date for Flood Victims. *Benton Evening News.com*. <http://www.bentoneveningnews.com/article/20080723/NEWS/307239926>
- Sapolsky, R. 2002. Endocrinology of the Stress Response in *Behavioral Endocrinology*. 2nd ed. Becker, J.B., Breedlove, M., Crews, D. and M. M. McCarthy, eds. Cambridge: The MIT Press. 409-449.
- Sareen, J., Cox, B.J., Clara, I. and G.J.G. Asmundson. 2005. The Relationship between Anxiety Disorders and Physical Disorders in the U.S. National Comorbidity Survey. *Depression and Anxiety*. 21:193–202.
- Sartorius, N., Ustun, T.B., Lecrubier, Y. and H.U. Wittchen. 1996. Depression Comorbid with Anxiety: Results from the WHO Study on Psychological Disorders in Primary Health Care. *British Journal of Psychiatry*. 168(Suppl 30):38–43.
- Sayer, A. 1982. Explanation in Economic Geography: Abstraction versus Generalization. *Progress in Human Geography*. 6:69-87
- Sayers, S.L., Hanrahan, N., Kutney, A., Clarke, S.P., Reis, B.F. and B. Riegel. 2007. Psychiatric Comorbidity and Greater Hospitalization Risk, Longer Length of Stay, and Higher Hospitalization Costs in Older Adults with Heart Failure. *Journal of the American Geriatrics Society*. 55:1585–1591.
- Scanlon, J. 2013. So What Do We Really Learn from Experience. *Natural Hazards Observer*. 38(3):11-13
- Schmidtlein, M, Finch, C. and S. Cutter. 2008. Disaster Declarations and Major Hazard Occurrences in the U.S. *The Professional Geographer*. 60(1):1-14.
- Schoevers, R.A., Deeg, D.Jj, van Tilburg, W. and A.T. Beekman. 2005. Depression and Generalized Anxiety Disorder: Co-Occurrence and Longitudinal Patterns in Elderly Patients. *American Journal of Geriatric Psychiatry*. 13(1):31-39.
- Scott, J. 2000. Rational Choice Theory in *Understanding Contemporary Society: Theories of the Present*. Browning, G., Halcli, A. and F. Webster eds. Sage Publications.
- Seignourel, P.J., Kunik, M.E., Snow, L., Wilson, N. and M. Stanley. 2008. Anxiety in Dementia: A Critical Review. *Clinical Psychology Review*. 28:1071–1082.
- Selye, H. 1946. The General Adaptation Syndrome and the Diseases of Adaptation. *Journal of Clinical Endocrinology* 6:117-230.

- Shapiro, M., Kvern, B., Watson, P., Guenther, L., McElhaney, J. and A. McGeer. 2011. Update on Herpes Zoster Vaccination: A Family Practitioner's Guide. *Canadian Family Physician*. 57(10):1127-31.
- Shonkoff, J. P., Boyce, W. T., and McEwen, B. S. 2009. Neuroscience, Molecular Biology, and the Childhood Roots of Health Disparities: Building a New Framework for Health Promotion and Disease Prevention. *Journal of the American Medical Association*. 301: 2252–2259.
- Sigurdsson, H. and S. Carey. 2002. The Eruption of Vesuvius in A.D. 79 in *The Natural History of Pompeii*. eds. Jashemski, W.F. and F. G. Meyer. Cambridge: Cambridge University Press.
- Simon, H. 1957. A Behavioral Model of Rational Choice in *Models of Man, Social and Rational: Mathematical Essays on Rational Human Behavior in a Social Setting*, ed. H. Simon. New York: John Wiley and Sons, Inc.
- Simon, H.A. 1978. Rationality as Process and as Product of Thought. *American Economic Review*. 68(2):1-16.
- Simon, H.A. 1990. Invariants of Human Behavior. *Annual Revue of Psychology*. 41:1–19
- Simpich, F. 1927. The Great Mississippi Flood of 1927. *The National Geographic Magazine*. LII (3): 243-289.
- Small Business Administration. 2013. Disaster Preparedness and Recovery Plan. <http://www.sba.gov/sites/default/files/Disaster%20Recovery%20Plan%202013.pdf>
- Small Business Administration. 2014. Disaster Loan Fact Sheets. <http://www.sba.gov/category/navigation-structure/loans-grants/small-business-loans/disaster-loans/disaster-loans-fact-sheets>
- Smith. A. 1761. *The Theory of Moral Sentiments*. London: A. Millar.
- Smith, A. 1776. *An Inquiry into the Nature and Causes of the Wealth of Nations*. Edinburgh.
- Smith, A. 2009. County Board Votes to Remove NFIP Administrators. *Daily Record Online Edition*. <http://www.lawdailyrecord.com/main.asp?SectionID=14&SubSectionID=16&ArticleID=6038>

- Smith, G. and D. Wenger. 2007. Sustainable Disaster Recovery Operationalizing an Existing Agenda in *Handbook of Disaster Research*. Rodriguez, H., Quarantelli, E.L. and R.R. Dynes. Ed. New York: Springer. p.234.
- Smith, G.W. 1912. *A History of Southern Illinois. A Narrative Account of its Historical Progress, its People, and its Principal Interests*. Chicago: Lewis Publishing Company.
- Smith, H. 2012. Timeline: Who Stole the American Dream.  
<http://hedricksmith.com/timeline-who-stole-the-american-dream/>
- Smith, H. B. 2006. Providing Mental Health Services to Clients in Crisis or Disaster Situations in Walz, G.R., Bleuer, J. and R. K. Yep, eds. *VISTAS: Compelling Perspectives on Counseling*. Alexandria, VA: American Counseling Association.
- Smith, K. 1992. *Environmental Hazards: Assessing Risk and Reducing Disaster*. London: Routledge.
- Smith, S. S., Roberts, J. M. and R. J. Vander Wielen. 2006. *The American Congress 4th edition*. New York: Cambridge Press p.18.
- Snowe, O. 2012. Our Future Depends on Government Working. *Olympia's List*  
<http://www.olympiaslist.org/>
- Sobel, R., Coyne, C., & Leeson, P. (2007). The Political Economy of FEMA: Did Reorganization Matter? *Journal of Public Finance and Public Choice*. 17(2-3):49-65.
- Soeteman, R.J.H., Yzermans, C J., Spreeuwenberg, P., Lagro-Janssen, T.A.L.M., van den Bosch, W.J.H.M. and J. van der Zee. 2008. Changes in the Pattern of Service Utilisation and Health Problems of Women, Men and Various Age Groups Following a Destructive Disaster: A Matched Cohort Study With a Pre-disaster Assessment. *BMC Family Practice*. 9(48).
- SRA International, Inc. 2008. Cultural Competency in Disaster Response: A Review of Current Concepts, Policies, and Practices. Report prepared for the Office of Minority Health. Rockville, MD: SRA International, Inc.  
<https://www.thinkculturalhealth.hhs.gov/pdfs/DisasterPersonneEnvironmentalScan.pdf>
- Starkweather, J. 2010. Categorical Variables in Regression: Implementation and Interpretation. University of North Texas.  
[http://www.unt.edu/rss/class/Jon/Benchmarks/CategoricalRegression\\_JDS\\_June2010.pdf](http://www.unt.edu/rss/class/Jon/Benchmarks/CategoricalRegression_JDS_June2010.pdf)
- State of Illinois. 2012. Disaster Housing: Annex I.  
[http://www.state.il.us/iema/disaster/pdf/IDRP/IDRP\\_AnnexI.pdf](http://www.state.il.us/iema/disaster/pdf/IDRP/IDRP_AnnexI.pdf)

- Stehr, S.D. 2006. The Political Economy of Urban Disaster Assistance. *Urban Affairs Review*. 41(4):492-500.
- Steinberg, T. 2006. *Acts of God: The Unnatural History of Natural Disaster in America*. Oxford: Oxford University Press.
- Stephens, G.R. and N. Wikstrom. 2007. *American Intergovernmental Relations-A Fragmented Federal Polity*. NY: Oxford University Press.
- Sturges, G. R. 1931. *United Masonic Relief*. Washington, D.C. The Masonic Service Association of the United States.
- Substance Abuse and Mental Health Services Administration. 2009. Crisis Counseling Assistance and Training Program. <http://store.samhsa.gov/shin/content//SMA09-4373/SMA09-4373.pdf>.
- Suetonius. 2007. *The Twelve Caesars*. transl. A. Thomson. Digireads.com
- Suls, J., and J. Bunde. 2005. Anger, Anxiety and Depression as Risk Factors for Cardiovascular Disease: The Problems and Implications of Overlapping Affective Dispositions. *Psychological Bulletin*. 131:260–301.
- Suzman, R. M., Willis, D. P. and K.G. Manton eds. 1992. *The Oldest Old*. New York: Oxford University Press.
- Sylves, R.T. 1998. Disasters and Coastal States: *A Policy Analysis of Presidential Declarations of Disaster 1953-1957*. DEL-SG-17-98. Newark, DE: University of Delaware, Sea Grant College Program.
- Sylves, R. 2008. *Disaster Policy and Politics- Emergency Management and Homeland Security*. Washington, DC: CQ Press.
- Sylves, R. and Z.I. Buzas. 2007. Presidential Disaster Declaration Decisions, 1953-2003: What Influences Odds of Approval? *State and Local Government Review*. 39(1):3-15.
- Sylves, R. and W.R. Cumming. 2004. FEMA's Path to Homeland Security: 1979-2003. *Journal of Homeland Security and Emergency Management* 1(2): Article 11:1-23.
- Sylves, R.T. and W.L. Waugh. 1996. *Disaster Management in the U.S. and Canada: The Politics, Policymaking, Administration and Analysis of Emergency Management*. Springfield: Charles C. Thomas Publisher Ltd.
- Talen, E., and L. Anselin. 1998. Assessing Spatial Equity: An Evaluation of Measures of Accessibility to Public Playgrounds. *Environment and Planning A* 30:595–613.

- Tang, C.S. 2007. Trajectory of Traumatic Stress Symptoms in the Aftermath of Extreme Natural Disaster-A Study of Adult Thai Survivors of the 2004 Southeast Asian Earthquake and Tsunami. *Journal of Nervous and Mental Disease*. 195(1):54-59.
- Tarcey, B. 2004. Flooding the Ballot Box: The Politics of Disaster. *Harvard Magazine*.
- Testa, A. 2009. Report: Poverty Escalating in Southern Illinois. *The Southern*.  
[http://thesouthern.com/news/report-poverty-escalating-in-southern-illinois/article\\_68bf7b0a-9c8b-5ec7-81fd-2f4861ea7feb.html](http://thesouthern.com/news/report-poverty-escalating-in-southern-illinois/article_68bf7b0a-9c8b-5ec7-81fd-2f4861ea7feb.html)
- Texas Health and Human Services Commission. 2013. Individual and Households Program Disaster Assistance Grants.  
[http://hhsportal.hhs.state.tx.us/ws\\_dappWeb/public/jsp/countyWebReport.jsp](http://hhsportal.hhs.state.tx.us/ws_dappWeb/public/jsp/countyWebReport.jsp)
- The Good Speed Publishing Co. 1887. History of Gallatin, Saline, Hamilton, Franklin and William Counties, Illinois. <http://www.carolyar.com/Illinois/SALINE/Saline152.htm>
- The Library of Congress. 2006. Post-Katrina Emergency Management Reform Act of 2006.  
<http://thomas.loc.gov/cgi-bin/bdquery/z?d109:SN03721:@@D&summ2=m&>
- The WHO World Mental Health Survey Consortium. 2004. Prevalence, Severity, and Unmet Need for Treatment in the World Health Organization World Mental Health Surveys. *Journal of the American Medical Association*. 291(21):2581-2590.
- Thomas, E.A. and S.K. Bowen. 2008. *Post-disaster Reconstruction: The Patchwork Quilt-A Creative Strategy for Safe and Long-term Post-disaster Rebuilding*. National Floodproofing Conference IV New Orleans, Louisiana.  
[http://www.floods.org/PDF/Post\\_Disaster\\_Reconstruction\\_Patchwork\\_Quilt\\_ET.pdf](http://www.floods.org/PDF/Post_Disaster_Reconstruction_Patchwork_Quilt_ET.pdf)
- Thomas, E.A., Jerolleman, A., Turner, T.L., Punchard, D. and S. Bowen. 2011. *Planning and Building Livable, Safe & Sustainable Communities- The Patchwork Quilt Approach*. Natural Hazard Mitigation Association.
- Thrift, N. 1985. Bear and Mouse or Bear and Tree? Anthony Giddens's Reconstitution of Social Theory. *Sociology*. 19: 609-623.
- Ticehurst, S., Webster, R.A., Carr, V.J. and T.J. Lewin. 1996. The Psychosocial Impact of an Earthquake on the Elderly. *International Journal of Geriatric Psychiatry*. 11: 943-951.
- Tierney, K. J. 2007. From the Margins to the Mainstream? Disaster Research at the Crossroads. *Annual Review of Sociology*. 33: 503-525.
- Titchener, J. L. and F. T. Kapp. 1976. Disaster at Buffalo Creek. Family and Character Change at Buffalo Creek. *American Journal of Psychiatry*. 133: 295-299.

- Townsend, A. 1950. Investigation of the Smog Incident in Donora, PA. and Vicinity. *American Journal of Public Health* 40: 183-189.
- Tuan, Y-F. 1978. *Space and Place: The Perspective of Experience*. Minneapolis: University of Minnesota Press.
- Tuan, Y-F. 1980. The Significance of the Artifact. *Geographical Review*. 70(4):462-472.
- Turner, E. H. 2000. *Clara Barton and the Formation of Public Policy in Galveston, 1900*. The Rockefeller Archive Center Publications Conference Proceedings.  
<http://www.rockarch.org/publications/conferences/turner.pdf>
- Tyler, S. 1906. *San Francisco's Great Disaster- Earthquake, Fire and Volcano in California and at Vesuvius*. Philadelphia: P.W. Ziegler Co.
- UNESCO. 2014. Cahokia Mounds State Historic Site. <http://whc.unesco.org/en/list/198>
- United States Department of Agriculture Farm Services Agency. 2012. Farm Loan Programs- Emergency Farm Loans.  
<https://www.fsa.usda.gov/FSA/webapp?area=home&subject=fmlp&topic=efl>
- United States Department of Agriculture. 2014. Food and Nutrition Service.  
[http://www.fns.usda.gov/sites/default/files/disaster\\_handout.pdf](http://www.fns.usda.gov/sites/default/files/disaster_handout.pdf)
- U.S. Census Bureau. 2009. Statistical Abstracts of the United States.  
<http://www.census.gov/compendia/statab/>
- U.S. Census Bureau. 2009a. Consolidated Federal Funds Report for Fiscal Year 2008. U.S. Government Printing Office. Washington, DC.
- U.S. Census Bureau. 2010. Consolidated Federal Funds Report for Fiscal Year 2009. U.S. Government Printing Office. Washington, DC.
- U.S. Census Bureau. 2011. Cumulative Estimates of Resident Population Change for Counties and County Rankings: April 1, 2000 to July 1, 2007.  
<https://www.census.gov/popest/data/counties/totals/2007/CO-EST2007-02.html>
- U.S. Census Bureau. 2011a. County Population Estimates by Demographic Characteristics - Age, Sex, Race, and Hispanic Origin; Updated Annually for States and Counties.  
<http://www.census.gov/popest/counties/asrh/>. 2010 Census of Population and Housing for places; updated every 10 years. <http://factfinder2.census.gov>
- U.S. Census Bureau. 2011b. U. S. Census Bureau, American Community Survey, 5-Year Estimates. Updated every year. <http://factfinder2.census.gov>



- USDA. 2011. USDA Rural Development Finds Available for Disaster Relief Efforts.  
<http://www.usda.gov/wps/portal/usda/usdahome?contentid=2008/06/0157.xml>
- USDA. 2011a. FACT SHEET: USDA Programs that Assist Individuals and Small Businesses.  
[http://www.rurdev.usda.gov/SupportDocuments/TX\\_USDADisasterReliefFactsheet.pdf](http://www.rurdev.usda.gov/SupportDocuments/TX_USDADisasterReliefFactsheet.pdf)
- USDA. 2011b. Illinois Agriculture.  
[http://www.nass.usda.gov/Statistics\\_by\\_State/Illinois/Publications/Farmfacts/farmfact.pdf](http://www.nass.usda.gov/Statistics_by_State/Illinois/Publications/Farmfacts/farmfact.pdf)
- USDA. 2014. Emergency Disaster Programs Administered by the Farm Service Agency.  
[http://www.fsa.usda.gov/Internet/FSA\\_File/disasterfsaprograms.pdf](http://www.fsa.usda.gov/Internet/FSA_File/disasterfsaprograms.pdf)
- USDA. 2014a. Rural Development Disaster Assistance.  
[http://www.rurdev.usda.gov/TX\\_DisasterAssistance.html](http://www.rurdev.usda.gov/TX_DisasterAssistance.html)
- USDA. 2014b. National Agricultural Statistics Service. Charts and Maps.  
[http://www.nass.usda.gov/Charts\\_and\\_Maps/Crops\\_County/#sb](http://www.nass.usda.gov/Charts_and_Maps/Crops_County/#sb)
- U.S. Department of the Army. 1972. *Wyoming Valley Flood Control, Susquehanna River, Pennsylvania*. Corps of Engineers. Baltimore, Md.
- U.S. Department of Health and Human Services. 2000. *Training Manual for Mental Health and Human Services Workers in Major Disasters, Second Edition*. Substance Abuse and Mental Health Services Administration. Washington, DC: SAMHSA.
- U.S. Department of Health and Human Services. 2004. *Mental Health Response to Mass Violence and Terrorism*. Substance Abuse and Mental Health Services Administration. Center for Mental Health Services.
- U.S. Department of Health and Human Services. 2009. National Health Security Strategy.  
<http://www.phe.gov/Preparedness/planning/authority/nhss/strategy/Documents/nhss-final.pdf>
- U.S. Department of Health and Human Services. 2010. Healthy People 2020: An Opportunity to Address Societal Determinants of Health in the United States.  
<http://www.healthypeople.gov/2010/hp2020/advisory/societaldeterminantshealth.htm#one>
- U.S. Department of Homeland Security. 2008. Fiscal Year 2009 Overview.  
<http://www.dhs.gov/xlibrary/assets/grant-program-overview-fy2009.pdf>

- U.S. Department of Housing and Urban Development. 2012. Community Development Block Grant Disaster Recovery (CDBG-DR) for 2011 Disasters. Frequently Asked Questions (FAQs).  
[http://portal.hud.gov/hudportal/HUD?src=/program\\_offices/comm\\_planning/community\\_development/programs/drsi](http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/community_development/programs/drsi)
- U.S. Department of Housing and Urban Development. 2014. HOME Investment Partnerships Program.  
[http://portal.hud.gov/hudportal/HUD?src=/program\\_offices/comm\\_planning/affordablehousing/programs/home/](http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/affordablehousing/programs/home/)
- U.S. House. 2006. *Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina. A Failure of Initiative*. Washington, DC: U.S. Government Printing Office.
- U.S. Small Business Administration. 2007. Designation of Economic Injury Disaster # 11163 in the State of ILLINOIS. Disaster Number IL-00012.  
<http://archive.sba.gov/disasternotices/IL-00012/IL00012-0.pdf>
- Vanitallie, T R. 2002. Stress: A Risk Factor for Serious Illness. *Metabolism*. 51:40-45.
- Viswanath. B., Maroky, A.S., Math, S.B., John, J.P., Benegal, V., Hamza, A. and S.K. Chaturvedi: Psychological Impact of the Tsunami on Elderly Survivors. *American Journal of Geriatric Psychiatry* 20:402–407.
- Vogel, R. 2012. Politics, Diversity and the Distribution of Federal Disaster Assistance. *Economics and Business Letters*. 1(2):37-42.
- Wachtendorf, T., R. Connell, and K. Tierney. 2002. *Disaster Resistant Communities Initiative: Assessment of the Pilot Phase-Year 3 Pilot Communities Report- Project # EMW-97-CA-0519. Report to the Federal Emergency Management Agency*. Newark: Disaster Research Center.
- Walsh, K.C. 2012. Putting Inequality in Its Place: Rural Consciousness and the Power of Perspective. *American Political Science Review*. 106(3):517-532.
- Wang, P. S., Lane, M., Olfson, M., Pincus, H.A., Wells, K.B. and K. C. Kessler. 2005. Twelve-Month Use of Mental Health Services in the United States: Results from the National Comorbidity Survey Replication. *Archives of General Psychiatry*. 62:629–640.
- Weber, L. and D.K. Hilfinger Messias. 2012. Mississippi Front-line Recovery Work after Hurricane Katrina: An Analysis of the Intersections of Gender, Race, and Class in Advocacy, Power Relations, and Health. *Social Science & Medicine*. 74(11):1833-1841.

- Whewell, W. 1840. *The Philosophy of the Inductive Sciences, Founded Upon Their History*. London: John W. Parker.
- White, G.F. 1945. *Human Adjustment to Floods*. Research Paper No 29. Chicago: University of Chicago Department of Geography.
- Whitehead, A.N. 1948. *Science and the Modern World*. Mentor, New York. p. 17.
- Whitaker, J.M. 2012. Disaster Unemployment Assistance (DUA). *Congressional Research Service*. RS22022.  
[http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1940&context=key\\_workplace](http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1940&context=key_workplace)
- Wilson, E.O. 1998. *Consilience: the Unity of Knowledge*. New York: Knopf.
- Wilson, R.S., Begeny, C.T., Boyle, P.A., Schneider, J.A., and D.A. Bennett. 2011. Vulnerability to Stress, Anxiety, and Development of Dementia in Old Age. *American Journal of Geriatric Psychiatry*. 19(4):327-34.
- Wisner, B., Blaikie, P., Cannon, T. and I. Davis. 2004. *At Risk: Natural Hazards, People's Vulnerability and Disasters*. New York: Routledge.
- Wisner, B and P. Walker. 2006. Getting Tsunami Recovery and Early Warning Right. *Open House International*. 31(1): 54-61.
- Wolf, M.R., Strachan, J.C. and D.M. Shea. Incivility and Standing Firm: A Second Layer of Partisan Division. *Political Science & Politics*.45:428-434.
- Wrightson, M.T., Curda, E.H., Keller, B.J., Lee, A. Krashevski, R.S. and J.C. Fastrup. 1996. *Federal Grants-Design Improvements Could Help Federal Resources Go Further*. GAO/AIMD-97-7 U.S. General Accounting Office.
- Xavier, F. M., Ferraz, M. P., Argimon, I., Trentini, C. M., Poyares, D., Bertollucci, P. H., Bisol L.W. and E.H. Moriguchi. 2002. The DSM-IV 'Minor Depression' Disorder in the Oldest-Old: Prevalence Rate, Sleep Patterns, Memory Function and Quality of Life in Elderly People of Italian Descent in Southern Brazil. *International Journal of Geriatric Psychiatry*. 17(2):107–116.
- Yi, Z., Yuzhi, L. and L. K. George. 2003. Gender Differentials of the Oldest Old in China. *Research on Aging*. 25(1):65-80.
- Zeng, Y. and J.W. Vaupel. 2002. Functional Capacity and Self-Evaluation of Health and Life of the Oldest Old in China. *Journal of Social Issues*. 58 (4):733-48.

## APPENDICES

### Appendix 1 2008 Illinois Disaster Declaration Request Correspondence

#### Appendix 1.1 Southern Illinois Gubernatorial Request April 8, 2008

April 8, 2008

The Honorable George W. Bush  
The President  
The White House  
Washington, D. C.

Through:

Edward Buikema  
Regional Administrator  
FEMA Region V  
536 South Clark, 6th Floor  
Chicago, IL 60605

Dear Mr. President:

Under the provisions of Section 401 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. §§ 5121-5206 (Stafford Act), and implemented by 44 CFR § 206.36, I request that you declare a major disaster for the State of Illinois as a result of severe storms that produced extremely heavy rain causing flooding in Southern Illinois beginning on March 17, 2008, and continuing. The most severe impact as a result of the storms and heavy rain is damage to residences and businesses in 15 counties. The impact to public infrastructure is significant, but cannot be fully assessed at this time due to standing water making areas inaccessible. Residences, businesses, roads, bridges, water control facilities and other public infrastructure have been damaged and/or destroyed. This flood is the fourth flood event in the past twelve months in Illinois that is of the magnitude to warrant Federal disaster assistance.

In response to the situation, and in accordance with Section 401 of the Stafford Act, I have taken appropriate action under State law and directed the execution of the Illinois Emergency

Operations Plan by proclaiming that a disaster exists in the State of Illinois on March 20, 2008. I specifically declared the following 19 counties as State disaster areas: Alexander, Fayette, Franklin, Gallatin, Hamilton, Hardin, Jackson, Jefferson, Johnson, Marion, Massac, Perry, Pope, Pulaski, Randolph, Saline, Union, White and Williamson. My proclamation of a State disaster aids the Illinois Emergency Management Agency (IEMA) in coordinating the State agency response to assist and support the local governments in the disaster area. The proclamation of disaster also authorizes the reassessment of real property damaged by the disaster and enables a request for Federal disaster assistance if it is determined necessary to effectively recover from the disaster.

The State of Illinois has developed a hazard mitigation plan that was approved by the Federal Emergency Management Agency (FEMA) in November of 2004. That plan has been updated and continues to be approved by FEMA. The State of Illinois continues to work with local governments in the affected area to promote participation in flood mitigation programs.

As the floodwaters receded, local emergency managers and county highway engineers provided IEMA with damage estimates. Based on the damage estimates, IEMA requested a Preliminary Damage Assessment (PDA) to determine the extent of damage to residences and businesses on March 31, 2008. This joint Federal, State and local assessment began on April 2 and continued through April 5. Attachment # 1 documents the number of residences impacted and the level of damage observed by the PDA teams.

The damage to public property cannot be fully assessed until the floodwaters have receded and the local public works and county highway departments can conduct an initial assessment. IEMA staff is advising the local officials on the process for assessing flood damaged publicly owned property and costs incurred for emergency response and debris removal. A PDA to assess public damage may be requested within the next two weeks.

I have determined that this incident is of such severity and magnitude that effective response and recovery is beyond the capabilities of the State and the affected local governments and that supplementary Federal assistance is necessary. I am specifically requesting Individual Assistance to include the Individuals & Households Program and Small Business Administration disaster loans for the following 15 counties: Alexander, Franklin, Gallatin, Jackson, Jefferson, Johnson, Marion, Massac, Perry, Pulaski, Randolph, Saline, Union, White and Williamson. I am also requesting Hazard Mitigation Assistance for all counties statewide. I reserve the right to request additional counties if residential and/or business damage is identified in counties not included in this request and if a PDA indicates the need for Federal assistance. I also reserve the right to request additional programs such as Public Assistance (PA) if it is determined necessary after completing additional damage assessments. Pending further assessments, Disaster Unemployment Assistance and Crisis Counseling may be identified as necessary.

Preliminary estimates of the types and amount of assistance needed under the Stafford Act are provided in Attachment # 2. Estimated requirements for assistance from certain Federal agencies under other statutory authorities are included as Attachment # 3.

IEMA opened the State of Illinois Emergency Operations Center (SEOC) to coordinate the response of State agencies to assist local governments in the response and recovery effort. Following is a brief description of the nature and type of assistance provided:

- \* Illinois Emergency Management Agency (IEMA) – Provided staff to coordinate activities at a Unified Area Command (UAC) established in the disaster area. All State emergency response field activity was coordinated from the UAC. IEMA Regional Office personnel worked directly with local emergency managers in the flooded counties.

IEMA also provided communication equipment to enhance communication within the disaster area and with the SEOC.

- \* Illinois State Police (ISP) - Mobilized additional officers to provide law enforcement support throughout the affected area. Tactical officers were staged in the area with boats and equipment to assist in rescue operations.

- \* Illinois Department of Natural Resources (IDNR) – Deployed ten Conservation Police Officers with five jon boats to assist in evacuations in Alexander, Pulaski and Saline counties. IDNR professional engineers conducted an assessment of the levee systems.

- \* Illinois Department of Transportation (IDOT) – Transported sandbags, pumps and other equipment to the disaster area.

- \* Illinois Department of Corrections (IDOC) – Provided inmates from correctional facilities to fill sandbags.

- \* Illinois Department of Public Health (IDPH) – Provided bottled water and portable toilets. IDPH staff monitored the long-term care facilities affected by flooding to ensure the safety of the residents. Coordination with water departments continues to ensure public awareness of water quality issues.

- \* Illinois Environmental Protection Agency (IEPA) – Assessed the impact of the flood on water and wastewater treatment plants. IEPA emergency personnel responded to a flood-related train derailment in Johnson County to assess the potential environmental impact.

- \* Illinois Department of Human Services (IDHS) – Opened a shelter at the Choate Mental Health Center in Anna to care for people displaced by the flood.

- \* American Red Cross (ARC) – Partnered with the State to open nine shelters to provide mass care, food and shelter.

State assistance to help the people and the local governments impacted by this disaster continues in the impacted counties. Currently, the focus is on removing debris from the flooded areas. As the recovery effort continues, State agency assistance will be coordinated by IEMA through the SEOC.

I certify that for this major disaster, the State and local governments will assume all applicable non-Federal shares of the costs required by the Stafford Act. Total State and local expenditures are currently expected to exceed \$62,077 for the Other Needs Assistance grants in accordance with the estimates of needed Federal assistance. This estimate, shown on Attachment #4, will greatly increase once the assessment of public damage and costs incurred by the State and local governments has been completed.

I anticipate the need for debris removal, which poses an immediate threat to lives, public health, and safety and therefore:

Pursuant to Sections 403 and 407 of the Stafford Act, 42 U.S.C. §§ 5170b & 5173, the State agrees to indemnify and hold harmless the United States of America for any claims arising from the removal of debris or wreckage for this disaster. The State agrees that debris removal from public and private property will not occur until the landowner signs an unconditional authorization for the removal of debris.

I have designated Andrew Velasquez III, Director of the Illinois Emergency Management Agency, as the State Coordinating Officer for this request. Director Velasquez will work with the Federal Emergency Management Agency in damage assessments and may provide further information or justification on my behalf.

Sincerely,

Rod R.  
Blagojevich  
Governor

Attachments: 1, 2, 3 & 4

**Attachment #1**  
**Residential Damage**

COUNTY	Affected	Minor	Major	Destroyed	Inaccessible	Total Impacted
Alexander	46	27	20	1	1	95
Franklin	16	13	17	0	0	46
Gallatin	0	0	7	0	39	46
Jackson	63	1	0	0	0	64
Jefferson	18	5	0	1	0	24
Johnson	12	3	1	1	0	17
Marion	2	2	2	0	0	6
Massac	1	3	6	0	0	10
Perry	13	0	0	2	0	15
Pulaski	0	2	53	7	0	62
Randolph	5	3	1	0	0	9
Saline	26	11	24	17	5	83
Union	39	9	13	6	0	67
White	0	0	0	3	0	3
Williamson	18	36	6	1	0	61
Total	259	115	150	39	45	608



Attachment #2

Estimated Requirements for Individual Requirements for Individual Assistance  
under the Stafford Act

	Assistance to Individuals and Households					Other Programs
	Temporary Housing	Repairs	Replacement	Permanent Housing Construction	Other Needs Assistance	(Disaster Unemployment Assistance, Legal Services, and Crisis Counseling)
Totals	\$106,920.00	\$2,649,206.00	\$681,696.00	\$0.00	\$248,308.00	TBD

**Attachment #3**

**Estimated Requirements for Small Business Administration Loans**

County	SBA Home Loans	SBA Business Loans
Alexander	24 major - \$471,000 69 minor - \$517,500	1 major - \$25,000 4 minor - \$250,000
Franklin	11 major - \$165,000 30 minor - \$60,000	1 major - \$20,000 2 minor - \$9,000
Gallatin	26 major - \$267,000 40 minor - \$160,000	0 major - \$ 0 8 minor - \$170,000
Jackson	6 major - \$68,000 60 minor - \$68,000	0 major - \$ 0 5 minor - \$55,000
Jefferson	1 major - \$30,000 27 minor - \$54,000	0 major - \$ 0 7 minor - \$15,000
Johnson	4 major - \$200,000 10 minor - \$35,000	6 major - \$680,000 3 minor - \$15,000
Marion	2 major - \$36,000 7 minor - \$21,000	0 major - \$ 0 2 minor - \$20,000
Massac	3 major - \$62,000 6 minor - \$35,000	0 major - \$ 0 1 minor - \$10,000
Perry	2 major - \$75,000 15 minor - \$90,000	0 major - \$0 0 minor - \$ 0
Pulaski	51 major - \$358,000 12 minor - \$38,000	2 major - \$1,030,000 2 minor - \$175,000
Randolph	0 major - \$ 0 7 minor - \$ 21,000	0 major - \$ 0 2 minor - \$150,000
Saline	33 major - \$715,000 46 minor - \$368,000	4 major - \$285,000 82 minor - \$4,100,000
Union	11 major - \$260,000 43 minor - \$Unknown	2 major - \$33,000 5 minor - \$Unknown
White	3 major - \$30,000 0 minor - \$ 0	0 major - \$ 0 0 minor - \$ 0
Williamson	24 major - \$415,000 37 minor - \$259,000	1 major - \$50,000 5 minor - \$45,000
Total	201 major - \$3,152,000 409 minor - \$1,726,500	17 major - \$2,123,000 128 minor - \$5,014,000

**Attachment #4**

**Governor's Certification**

I certify that for this current disaster, State and local government expenditures and obligations will include the non-Federal share of costs required by the Stafford Act. As stated in my basic letter, and based on information available at this time, tabulation of these estimated expenditures and obligations are as follows:

CATEGORY OF ASSISTANCE	AMOUNT	
	STATE	LOCAL
Individual Assistance:		
"Other Needs Assistance" under the Individuals and Household Program	\$62,077.00	\$0.00
Other (specify)		
<b>Total:</b>	\$62,077.00	\$0.00

**Appendix 1.2 Southern Illinois Gubernatorial Appeal of Denial May 23, 2008**

May 23, 2008

The Honorable George W. Bush  
The President  
The White House  
Washington, D. C.

Through:

Edward Buikema  
Regional Administrator  
FEMA Region V  
536 South Clark Street, 6<sup>th</sup> Floor  
Chicago, IL 60605

Dear Mr. President:

Pursuant to 44 CFR 206.46, I am appealing the April 28, 2008, denial of my April 8, 2008, request for a major disaster declaration for the State of Illinois. This appeal is based on additional damage to residences in four of the 15 counties that were included in my original request for Federal assistance through the Individual Assistance and Hazard Mitigation Assistance programs. This flood, which has resulted in homes in Gallatin County being inundated with water and mud for over 30 days, continues to present a disaster recovery situation that is beyond the capability of the State and affected local governments.

My original request for Federal disaster assistance was based on flood damages to residences in 15 counties. A joint Federal/State Preliminary Damage Assessment (PDA) was conducted April 2 – 5, 2008. During that PDA, it was noted by the assessment teams that some flooded residences in three counties were inaccessible due to standing flood water. Consequently, the extent of damage to those homes was impossible to determine at that time. Subsequent to the completion of the PDA conducted in April, the water slowly receded and local officials were able to identify additional residences that were destroyed or sustained major damage. The extent of damage to homes that remained flooded for weeks has increased.

As a result of the denial of Federal assistance to aid the people most severely impacted by the flooding in Southern Illinois, it was necessary for the Illinois Emergency Management Agency (IEMA) to request Federal Emergency Management Agency (FEMA) assistance in conducting a second PDA to verify the extent of damage to those homes that were inaccessible in April and to the damaged homes that were identified since the initial PDA. A PDA to accomplish this was conducted and the results are attached. The attachment details the number of residences and extent of damage identified for this disaster as of the conclusion of the PDA on May 21, 2008.

This flood, which began on March 17, 2008, is the fourth flood in Illinois since August 2007 that requires Federal assistance for an effective recovery. In August of last year, two separate flood events in northern and northeastern Illinois resulted in major disaster declarations for the purpose of providing assistance to people with flood damaged homes. In January 2008, two counties in north central Illinois flooded resulting in a major disaster declaration. This Southern Illinois flood is similar to those three federally declared floods in terms of the number of residences identified during the respective PDAs that sustained major damage or were destroyed. Following is a comparison of residential damage identified during PDAs in the three floods previously declared as major disasters and the two PDAs conducted for this current flood where the same type of Federal assistance has been requested:

- August 2007 (Stephenson & Winnebago County) – 128 homes with major damage or destroyed
- August 2007 (DeKalb, Grundy, Kane, Lake, LaSalle & Will counties) – 230 homes with major damage or destroyed
- January 2008 (Iroquois & Livingston counties) – 238 homes with major damage or destroyed
- Current flood (15 Southern Illinois counties) – 228 homes with major damage or destroyed

It is vitally important that the same type of Federal disaster assistance be made available to the people in all parts of Illinois who were severely impacted as a result of flooding last August, this past January and this spring. Federal assistance was requested and received in the previous three floods and it is needed now for the current flood.

It is the Federal assistance through the programs administered by FEMA that will help the people in Southern Illinois to recover from this devastating flood. The flooded area in the 15 counties has a population that is 48% low income. The most severely impacted areas have a population that is over 70% low income. Based on the information collected during the PDA for this appeal, the estimated cost to the State for the Other Needs Assistance Program will exceed \$70,699.

Andrew Velasquez III, Director of the Illinois Emergency Management Agency, will work with FEMA to provide additional information concerning this appeal if necessary.

Sincerely,

Rod R. Blagojevich  
Governor

**Residential Damage Identified and Assessed**  
as of May 21, 2008

COUNTY	Affected	Minor	Major	Destroyed	Total Impacted
Alexander	63	51	21	1	136
Franklin	24	17	18	0	59
Gallatin	1	1	14	22	38
Jackson	63	1	0	0	64
Jefferson	18	5	0	1	24
Johnson	12	3	1	1	17
Marion	2	2	2	0	6
Massac	1	3	6	0	10
Perry	13	0	0	2	15
Pulaski	0	2	53	7	62
Randolph	5	3	1	0	9
Saline	26	13	29	20	88
Union	39	9	13	6	67
White	0	0	0	3	3
Williamson	18	36	6	1	61
Total	285	146	164	64	659

## Appendix 1.3 Southern Illinois Presidential Denial of Appeal August 20, 2008

U.S. Department of Homeland Security  
500 C Street, SW  
Washington, DC 20472



**FEMA**

AUG 20 2008

The Honorable Rod R. Blagojevich  
Governor of Illinois  
207 State Capitol  
Springfield, Illinois 62706

Dear Governor Blagojevich:

This is in response to your May 23, 2008, appeal and May 27, 2008, addendum to your appeal for a major disaster declaration for the State of Illinois as a result of severe storms and flooding beginning on March 17, 2008, and continuing. You specifically requested Individual Assistance and Public Assistance for multiple counties and Hazard Mitigation for all counties.

After a thorough review of the information contained in your initial request and appeal, and based on the findings of the Preliminary Damage Assessments in the affected areas, we reaffirm our original statement that the damage was not of such severity and magnitude as to be beyond the capabilities of the State and affected local governments.

Therefore, I must inform you that your appeal is denied.

Sincerely,

A handwritten signature in black ink that reads "R. David Paulison".

R. David Paulison  
Administrator

[www.fema.gov](http://www.fema.gov)

## Illinois Severe Storms and Flooding – Denial of Appeal

### *Denied on August 20, 2008*

On April 8, 2008, Governor Rod R. Blagojevich requested a major disaster declaration due to severe storms and flooding beginning on March 17, 2008, and continuing. The Governor had requested a declaration for Individual Assistance for 15 counties and Hazard Mitigation for all counties. On April 28, 2008, the request was denied. The Governor appealed the denial on May 23, 2007, and on May 27, 2008, and requested Individual Assistance for 15 counties, Public Assistance for 21 counties, and Hazard Mitigation for all counties. During the periods of April 1-7, 2008, and May 19-23, 2008, joint Federal, State, and local Preliminary Damage Assessments (PDAs) were conducted in the requested counties and are summarized below. PDAs estimate damages immediately after an event and are considered, along with several other factors, in determining whether a disaster is of such severity and magnitude that effective response is beyond the capabilities of the State and the affected local governments, and that Federal assistance is necessary.<sup>1</sup>

On August 20, 2008, the Governor's appeal for a major disaster declaration was denied based on the determination that the damage was not of such severity and magnitude as to be beyond the combined capabilities of the State, affected local governments, and voluntary agencies.<sup>2</sup>

### **Summary of Damage Assessment Information Used in Determining Whether to Declare a Major Disaster**

#### **Individual Assistance**

- Total Number of Residences Impacted:<sup>3</sup> 659
  - Destroyed - 64
  - Major Damage - 164
  - Minor Damage - 146
  - Affected - 285
- Percentage of insured residences:<sup>4</sup> (6%)
- Percentage of low income households:<sup>5</sup> (56%)
- Percentage of elderly households:<sup>6</sup> (17%)
- Total Individual Assistance cost estimate: \$4,967,628

#### **Public Assistance**

- Primary Impact: Damage to roads and bridges
- Total Public Assistance cost estimate: \$12,594,277
- Statewide per capita impact:<sup>7</sup> \$1.01
- Statewide per capita impact indicator:<sup>8</sup> \$1.24
- Countywide per capita impact: Alexander County (\$185.97), Fayette County (\$6.24), Franklin County (\$8.14), Gallatin County (\$161.99), Hamilton County (\$33.79), Hardin County (\$11.88), Jackson County (\$5.50), Jasper County (\$6.07), Johnson County (\$42.29), Marion County (\$33.50), Massac County (\$33.41), Perry County (\$5.89), Pope County (\$190.40), Pulaski County (\$128.89), Randolph County (\$4.73), Richland County

(\$22.05), Saline County (\$58.37), Union County (\$58.69), Wayne County (\$7.82), White County (\$19.42), and Williamson County (\$3.55)

- Countywide per capita impact indicator:<sup>9</sup> \$3.11

---

<sup>1</sup> The preliminary damage assessment (PDA) process is a mechanism used to determine the impact and magnitude of damage and resulting needs of individuals, businesses, public sector, and community as a whole. Information collected is used by the State as a basis for the Governor's request for a major disaster or emergency declaration, and by the President in determining a response to the Governor's request (44 CFR § 206.33).

<sup>2</sup> When a Governor's request for major disaster assistance under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended (Stafford Act) is under review, a number of primary factors are considered to determine whether assistance is warranted. These factors are outlined in FEMA's regulations (44 CFR § 206.48). The President has ultimate discretion and decision making authority to declare major disasters and emergencies under the Stafford Act (42 U.S.C. § 5170 and § 5191).

<sup>3</sup> Degree of damage to impacted residences:

- o Destroyed – total loss of structure, structure is not economically feasible to repair, or complete failure to major structural components (e.g., collapse of basement walls/foundation, walls, or roof);
- o Major Damage – substantial failure to structural elements of residence (e.g., walls, floors, foundation), or damage that will take more than 30 days to repair;
- o Minor Damage – home is damaged and uninhabitable, but may be made habitable in short period of time with repairs; and
- o Affected – some damage to the structure and contents, but still habitable.

<sup>4</sup> By law, Federal disaster assistance cannot duplicate insurance coverage (44 CFR § 206.48(b)(5)).

<sup>5</sup> The presence of special populations, such as low-income, the elderly, or the unemployed may indicate a greater need for assistance (44 CFR § 206.48(b)(3)).

<sup>6</sup> Ibid (44 CFR § 206.48(b)(3)).

<sup>7</sup> Based on State population in the 2000 Census.

<sup>8</sup> Statewide Per Capita Impact Indicator for FY08, *Federal Register*, October 1, 2007.

<sup>9</sup> Countywide Per Capita Impact Indicator for FY08, *Federal Register*, October 1, 2007.



## Appendix 1.4 Southern Illinois SBA Declaration September 2, 2008

Billing Code 8025-01-P

U.S. SMALL BUSINESS ADMINISTRATION

Disaster Declaration # 11412 and # 11413

ILLINOIS Disaster # IL-00014

AGENCY: U.S. SMALL BUSINESS ADMINISTRATION

ACTION: Notice

SUMMARY: This is a notice of an Administrative declaration of a disaster for the State of ILLINOIS dated 09/02/2008

INCIDENT: Severe Storms and Flooding

INCIDENT PERIOD: 03/17/2008 through 04/30/2008

EFFECTIVE DATE: 09/02/2008

PHYSICAL LOAN APPLICATION DEADLINE DATE: 11/03/2008

ECONOMIC INJURY (EIDL) LOAN APPLICATION DEADLINE DATE: 06/02/2009

ADDRESSES: Submit completed loan applications to :  
 U.S. SMALL BUSINESS ADMINISTRATION  
 PROCESSING AND DISBURSEMENT CENTER  
 14925 KINGSPORT ROAD  
 FORT WORTH, TX 76155

FOR FURTHER INFORMATION CONTACT: Alan Escobar, Office of Disaster Assistance,  
 U.S. Small Business Administration, 409 3rd Street, SW, Suite 6050, Washington, DC 20416

SUPPLEMENTARY INFORMATION: Notice is hereby given that as a result of the Administrator's disaster declaration, applications for disaster loans may be filed at the address listed above or other locally announced locations.

The following areas have been determined to be adversely affected by the disaster:

Primary Counties:

ALEXANDER	GALLATIN	PULASKI	SALINE
WILLIAMSON			

Contiguous Counties:

ILLINOIS			
FRANKLIN	HAMILTON	HARDIN	
JACKSON	JOHNSON	MASSAC	
POPE	UNION	WHITE	
INDIANA			
POSEY			
KENTUCKY			
BALLARD	MCCRACKEN	UNION	
MISSOURI			
CAPE GIRARDEAU	MISSISSIPPI	SCOTT	

The Interest Rates are:

HOMEOWNERS WITH CREDIT AVAILABLE ELSEWHERE	5.500
HOMEOWNERS WITHOUT CREDIT AVAILABLE ELSEWHERE	2.750
BUSINESSES WITH CREDIT AVAILABLE ELSEWHERE	8.000
BUSINESSES & SMALL AGRICULTURAL COOPERATIVES WITHOUT CREDIT AVAILABLE ELSEWHERE	4.000
OTHER (INCLUDING NON-PROFIT ORGANIZATIONS) WITH CREDIT AVAILABLE ELSEWHERE	5.250
BUSINESSES AND NON-PROFIT ORGANIZATIONS WITHOUT CREDIT AVAILABLE ELSEWHERE	4.000

Appendix 1.5 Gubernatorial Request (DR-1747) January 18, 2008



OFFICE OF THE GOVERNOR  
207 STATE HOUSE, SPRINGFIELD, ILLINOIS 62706

ROD R. BLAGOJEVICH  
GOVERNOR

January 18, 2008

The Honorable George W. Bush  
The President  
The White House  
Washington, D. C.

Through:

Edward Bulkema  
Regional Administrator  
FEMA Region V  
536 South Clark, 6<sup>th</sup> Floor  
Chicago, IL 60605

Dear Mr. President:

Under the provisions of Section 401 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. §§ 5121-5206 (Stafford Act), and implemented by 44 CFR § 206.36, I request that you declare a major disaster for the State of Illinois as a result of severe storms that occurred on January 7 & 8, 2008 and the subsequent flooding along rivers and streams. The most severe impact as a result of the flooding is in the City of Pontiac in Livingston County and in the City of Watseka in Iroquois County. Unincorporated areas of both counties were also impacted by the rising waters of the Iroquois River and Vermillion River.

In response to the situation, and in accordance with section 401 of the Stafford Act, I have taken appropriate action under State law and directed the execution of the Illinois Emergency Operations Plan by proclaiming that a disaster exists in the State of Illinois on Wednesday, January 9, 2008. I specifically declared Iroquois County and Livingston County as State disaster areas. My proclamation of a State disaster aids the Illinois Emergency Management Agency (IEMA) in coordinating the State agency response to assist and support the local governments in the disaster area. The proclamation of disaster also authorizes the reassessment of real property damaged by the disaster and enables a request for federal disaster assistance if determined necessary.

The State of Illinois has developed a hazard mitigation plan that was approved by the Federal Emergency Management Agency (FEMA) in November of 2004. That plan has been

updated and those updates have also been approved by FEMA.

As the floodwaters receded, damage assessment teams from IEMA quickly responded to both impacted counties to assist local officials in conducting an initial damage assessment. IEMA damage assessors identified over 250 homes with floodwater over the first floor. In less than one day, it was apparent that the disaster was of the magnitude that warranted an assessment of damages by FEMA and the U. S. Small Business Administration (SBA). On Monday, January 14, 2008, IEMA contacted FEMA and requested a joint Federal, State, and local survey of the damaged areas. The Preliminary Damage Assessment (PDA) began at noon on Tuesday, January 15, 2008 and continued for four days. At the onset of the PDA, spreadsheets listing the addresses and the observed level of flooding in the impacted residences were provided by IEMA to the FEMA damage assessors. Preliminary assessments indicated the most severe impacts were to homes and businesses near the Vermilion River in Livingston County and the Iroquois River in Iroquois County. Attachment # 1 documents the number of homes impacted and the level of damage observed by the PDA teams.

The damage to public property cannot be fully assessed until the floodwaters have completely receded and the local public works and county highway departments can conduct an initial assessment. IEMA staff is advising the local officials on the damage assessment process for assessing flood damaged publicly owned property and the costs incurred for emergency response and debris removal by local governments. A PDA to assess public damage will likely be requested within the next two weeks.

This disaster is a result of a rare, but not unprecedented, winter-time severe storm that is more typical of the spring severe weather that annually impacts the State of Illinois. On January 7 & 8, the temperatures exceeded sixty degrees in most of the State. Severe storms occurred from the Illinois - Wisconsin border south through Central Illinois. The flooding that occurred as a result of the severe storms flowed into rivers that were already approaching flood stage due to the rapid melting of approximately five inches of snow that was in the watershed due to a winter storm the previous week. In the city of Watseka alone, nearly 600 individuals had to be rescued from their homes by rescue boat because the flood waters had risen to record levels. In less than a week following the spring-like storms, winter had returned with sub-freezing temperatures.

I have determined that this incident is of such severity and magnitude that effective response is beyond the capabilities of the State and the affected local governments and that supplementary Federal assistance is necessary. I am specifically requesting Individual Assistance to include the Individuals & Households Program and Small Business Administration disaster loans for Iroquois and Livingston counties. I am also requesting Hazard Mitigation Assistance for all counties statewide. I reserve the right to request additional programs, such as Public Assistance (PA), if it is determined necessary after completing additional damage assessments. Pending further assessments, Disaster Unemployment assistance may be identified as necessary. I also reserve the right to request that additional counties be included.

Preliminary estimates of the types and amount of assistance needed under the Stafford Act are provided in Attachment # 2. Estimated requirements for assistance from certain Federal

agencies under other statutory authorities are included as Attachment # 3.

IEMA opened the State of Illinois Emergency Operations Center (SEOC) to coordinate the response of Illinois state agencies to assist local governments. A complete narrative (with photos) describing the nature of the State's response effort is included in Attachment # 4. I am also enclosing a CD with additional photos of the State response and recovery effort. State assistance to help the people and the local governments impacted by this disaster continues in both counties. Currently, the focus is on removing debris from the flooded areas. As the recovery effort continues, State agency assistance will be coordinated by IEMA through the SEOC.

I certify that for this major disaster, the State and local governments will assume all applicable non-Federal shares of the costs required by the Stafford Act. Total State and local expenditures are expected to exceed \$119,500 in accordance with the estimates of needed Federal assistance. This estimate, shown on Attachment # 5, will increase once the assessment of public damage and costs incurred by the State and local governments has been completed.

I anticipate the need for debris removal, which poses an immediate threat to lives, public health, and safety and therefore:

Pursuant to Sections 403 and 407 of the Stafford Act, 42 U.S.C. §§ 5170b & 5173, the State agrees to indemnify and hold harmless the United States of America for any claims arising from the removal of debris or wreckage for this disaster. The State agrees that debris removal from public and private property will not occur until the landowner signs an unconditional authorization for the removal of debris.

I have designated Andrew Velasquez III, Director of the Illinois Emergency Management Agency, as the State Coordinating Officer for this request. Director Velasquez will work with the Federal Emergency Management Agency in damage assessments and may provide further information or justification on my behalf.

Sincerely,

  
Rod R. Blagojevich  
Governor

Attachments: 1, 2, 3, 4 & 5  
Enclosure: CD

**Attachment #1**  
**Residential Damage**

	Single Family	Multi-family	Mobile Home	Total
Affected	55	0	42	97
Minor	254	12	0	266
Major	116	2	0	118
Destroyed	1	0	0	1
<b>Total Impacted</b>	<b>426</b>	<b>14</b>	<b>42</b>	<b>482</b>

	Affected	Minor	Major	Destroyed	Total Impacted
Iroquois	31	150	64	1	246
Livingston	66	116	54	0	236
<b>Total</b>	<b>97</b>	<b>266</b>	<b>118</b>	<b>1</b>	<b>482</b>

**Attachment #2**

**Estimated Requirements for Individual Requirements for Individual Assistance  
under the Stafford Act**

	Assistance to Individuals and Households					Other Programs
	Temporary Housing	Repairs	Replacement	Permanent Housing Construction	Other Needs Assistance	(Disaster Unemployment Assistance, Legal Services, and Crisis Counseling)
Totals	\$244,800	\$1,145,000	\$19,000	\$0	\$478,000	TBD

**Attachment #3**

**Estimated Requirements for Small Business Administration Loans**

**Iroquois and Livingston Counties**

	<b>SBA Home Loans</b>	<b>SBA Business Loans</b>	<b>Total</b>
Estimated Loan Approvals	404	18	422
Estimated Amount of Loan Approvals	\$6,581,564	\$948,366	\$7,529,930

**Attachment # 4**

**IEMA  
State Emergency Operations Center (SEOC)  
Narrative of Activity – January 2008 Flooding**

Prepared by Scott Gauvin – SEOC Manager

**IEMA/SEOC – Illinois Emergency Management Agency – State Emergency  
Operations Center**

Beginning on Monday evening, January 7<sup>th</sup>, IEMA staffed the State Emergency Operations Center (SEOC) with IEMA staff. Unseasonably warm weather brought severe weather, heavy rains and tornadoes into Illinois. At that time, the SEOC began communicating with counties who were affected and the Illinois Department of Natural Resources, Office of Water Resources and the National Weather Service concerning the rising waters, warning and advisories that were posted as a result of the severe weather.

On Wednesday morning, the SEOC was staffed again by IEMA personnel after reports of flooding began to be reported to the IEMA Communication Center from Iroquois County. The SEOC dispatched IEMA regional staff to Watseka to begin to coordinate efforts with local responders.

By the end of the day, the SEOC was staffed by ISP, IDOT-H, CMS, IDNR, and ARC.

The SEOC deployed IDNR jon boats and officers to maintain order and to assist in the evacuation of residents in Watseka. ISP, IDOT & IEMA provided personnel to assist in the coordination of activities and resources. IEMA also deployed regional staff to the SEOC to supplement the SEOC staff during the event.

At the height of the flooding in both Pontiac and Watseka, IEMA had three personnel in Watseka and two personnel in Pontiac.

FEMA self-dispatched to the SEOC as well as forwarded two personnel to Watseka.

IEMA was requested to supply two municipalities (Mahomet – Champaign County & Kankakee – Kankakee County) 10,000 sandbags a piece. IDOT transported the bags to Mahomet and Kankakee County picked up their sandbags.

Throughout the course of the week the SEOC was staffed for a total of five days to provide coordination amongst the state agencies listed above and to assist in providing resources to the communities in need.

While staffed, the SEOC coordinated the release of press releases and helpful public information on the proper safety measures that should be followed during the clean-up after a flood.



IEMA continually coordinated with IDNR Office of Water Resources throughout the event to obtain the latest flooding information (current levels, crests and projections). This information was passed on to the state agencies involved, IEMA Regional Coordinators and to local ESDA's either affected or who could be potentially affected.

Currently, IEMA still has personnel on the ground in both locations, continuing to assist local units of government in their recovery effort.

#### **ARC – American Red Cross**

The American Red Cross responded to flooding in both Iroquois and Livingston counties that caused hundreds of individuals to be evacuated from their homes.

The Iroquois County Chapter of the American Red Cross opened a shelter at the Trinity Lutheran Church located at 1658 East Walnut in Watseka, Illinois. Since the shelter was established, there has been 326 reported overnight shelter stays. The shelter remains open at this present time. The American Red Cross has provided over 1,398 meals and snacks to those in the affected area. Two American Red Cross Emergency Response Vehicles (ERVs) provide mobile feeding during the day throughout the community in the affected areas. A Bulk Distribution Center has been established at the Methodist Church in Watseka, where community residents can come and pick up clean-up kits (mops, buckets, brooms, disinfectant cleaner and gloves) and comfort kits (personal hygiene products). To date over 280 clean-up kits and over 90 comfort kits have been distributed to those residents impacted by the flood. American Red Cross continues to provide mass care support to members of the community affected by flooding on the Iroquois River. The American Red Cross opened a Service Center beginning on Wednesday, January 16 in Watseka, Illinois.

The American Red Cross provided mass care support to a city operated shelter at the Pontiac Parks and Recreation Center located at 900 North Elm in Pontiac, Illinois. Since the shelter was established there were 81 total reported overnight stays. The shelter is now reported closed. The American Red Cross has provided over 1,765 meals and snacks to those in the affected area. Two American Red Cross ERVs provide mobile feeding during the day throughout the community in the affected areas. Residents have been able to pick up clean-up and comfort kits at various food pantries around the community of Pontiac. To date over 620 clean-up kits and over 20 comfort kits have been distributed to those residents impacted by the flood. American Red Cross continues to provide mass care support to members of the community affected by flooding on the Vermilion River. The American Red Cross has opened and is operating a Service Center in Pontiac, Illinois.

#### **ISP – Illinois State Police**

Beginning January 9, 2007 through today, January 15, 2008 Illinois State Police (ISP) District 21 assisted the Watseka Police Department with incident command, traffic control, and law enforcement.

Captain Ralph McClellan and Lt. Jeff Blair participated in the incident command structure, and assisted in the coordination of State Resources in meetings beginning January 9 and running through January 11, 2008

From January 9 through January 15, 2008, ISP District 21 troopers were assigned around-the-clock to assist Watseka Police Officers with traffic control and patrol duties.

District 21 incurred 40 hours of regular patrol loss and 105.5 hours of overtime assisting the Watseka Police Department.

At this time the Watseka Police Chief no longer requires our on-going assistance, but has made a request for additional personnel if unforeseen circumstances arise.

#### **IDOT – Illinois Department of Transportation**

IDOT responded to the Watseka and Pontiac floods with equipment and manpower to assist each jurisdiction with road closures and detour routes.

IDOT crews assisted with construction of a water diverting apparatus to protect State Buildings.

IDOT is and will be assisting in Debris Management activities as the water recedes and clean up begins. IDOT is scheduled to provide equipment starting January 16 in Pontiac and January 22 in Watseka to assist locals in their clean-up efforts.

IDOT provided 15 barricades and transported IEMA sandbags during the event. IDOT also provided personnel for various coordination meetings throughout the event both in Watseka and Pontiac.

IDOT's costs are estimated at over \$20,000 per day.

#### **IDNR – Illinois Department of Natural Resources**

##### **Office of Water Resources**

The Office of Water Resources (OWR) started providing flood information to the State Emergency Operations Center (SEOC) on January 8, 2008. Significant rainfall throughout the State caused river and stream levels to rise rapidly. In particular, OWR was concerned about Watseka, IL. The Iroquois River was predicted to reach record flood levels and this information was reported to the SEOC. The SEOC repeatedly informed Iroquois County and Watseka authorities of the flooding concerns identified by the OWR.

At 4:15 a.m. on January 9<sup>th</sup>, Iroquois County ESDA notified the SEOC and requested assistance. OWR personnel were dispatched to the Watseka area to monitor and provide river level information directly to the SEOC. In addition, OWR personnel were dispatched to Pontiac to provide information on the Vermilion River.

OWR has also been asked by the SEOC to provide a flood area "work-up" on the Watseka Area. The information will document the extent of the flood damaged areas and provide State and Federal Authorities with accurate water levels.

#### Office of Law Enforcement

On January 9<sup>th</sup>, the SEOC was activated and requested assistance from the Office of Law Enforcement (OLE). Seven Conservation Police Officers (CPO's), four jon boats and a command trailer were sent to Watseka. Conservation Police assisted in evacuation and security patrols.

Conservation Police were detailed by the SEOC to conduct an aerial survey of the flooding in Iroquois County. An Illinois Department of Transportation Helicopter was sent to Memorial Hospital in Watseka, where a Conservation Police Captain and the Watseka Police Chief conducted the survey. The information (including CD recording) was relayed to the SEOC.

Conservation Police provided transportation (via boats) for the Nicor Gas Company. The gas company shut off gas to numerous houses as a precaution.

Conservation Police also provided night time security boat patrols with local authorities. Two CPO's were teamed up with Watseka Police and Iroquois County Sheriff's Deputies. They patrolled Watseka, enforcing "dusk to dawn" curfew restrictions implemented by local authorities.

Conservation Police have been requested to provide boat security patrols through January 13<sup>th</sup> in Watseka. They have assisted in the evacuation/rescue of 580 people and 80 pets from 260 homes.

#### **IDOT-A- Illinois Department of Transportation - Aeronautics**

IDOT-A provided the utility helicopter H9 with crew and flir/video recording capability to assist local law enforcement and State officials assess and document flooding activity and damage in the Iroquois and Livingston County areas. Flew local law enforcement and IDNR law enforcement and provided a digital video recording of the flooding situation.

IDOT-A provided helicopter transportation (utilizing Sikorsky Helicopter H2) for IEMA Director and other State employees for aerial flooding assessment in the Livingston and Iroquois County area and to meet with local officials to hear concerns and coordinate State assistance.

#### **IDOA - Illinois Department of Agriculture**

The Illinois Department of Agriculture made contacts for the sheltering of pets displaced by the flooding event. Specifically, the local Animal Control Offices, the Humane Society of the United States, as well as an organization entitled, "Noah's Wish", from

Madison County were approached for possible assistance. All of these groups offered assistance with sheltering the affected pets. To our knowledge, all evacuated pets received needed care in the flooded areas.

**IDPH – Illinois Department of Public Health**

1/9/08

IDPH began monitoring the partially activated SEOC through GROOVE at about 1:30 PM. Sugar Creek Care Center Nursing in Watseka took on 2 feet of water inside; all medical equipment was removed and the gas and electricity shut off. All 30 residents were evacuated (5 to Sheldon Health Care Center, 25 to Watseka Health Care Center) and monitored by IDPH Long Term Care Staff. The residents were formally admitted to the other facilities and are not expected to return to Sugar Creek in the near future. Emergency drinking water procurement procedures were updated and confirmed, but these resources were not requested. IEMA requested IDPH activate the St. Francis (Peoria EMS Region 2) RMERT team and it was deployed to work with the Pontiac Fire Department. They dealt with 1 fatality – a 35 year old male electrocution regarding a residential sump pump; transported 3 wheelchair-bound patients from the emergency shelter to a nursing home, and a fire confined to a bedroom with no casualties.

1/10/08

IMERT was put on alert by IDPH in case long-term services were needed as they were training in Champaign at the time. IDPH pre-prepared safety and recovery information for floods was provided to IEMA for the public and responders in the morning. IDPH checked with St James Hospital in Pontiac, Iroquois Hospital in Watseka and Morris Hospital in Morris who all reported no problems anticipated due to the flooding problems. IDPH updated and confirmed portable sewage disposal treatment procurement information, but these resources were not requested. IDPH coordinated with IEMA PIO on a press release.

1/11/08

IDPH told IMERT to stand down. RMERT was released and returned to Peoria. Tetanus immunization information was requested and supplied to local health departments in Champaign-Urbana and Iroquois County. IDPH supplied ICS forms to Ford-Iroquois County Health Department.

1/14/08

IEMA requested 200 doses of tetanus vaccine for Livingston County Health Department (LCHS) after the LCHD had already borrowed vaccine from a local hospital and exhausted their own supply. IDPH borrowed doses from the IDPH Immunization Program IPC and delivered them by 4:00 PM. Vaccine replacement procedures updated and confirmed between IDPH, LHD, and IEMA.

**CMS – Central Management Services**

CMS Primary Liaison monitored Groove workspace from launch to January, 10. CMS provided information to IEMA on sandbag vendor contacts.

CMS Division of Vehicles garage in Watseka reported flooding early morning of January 10.

Primary Liaison manned CMS station at SEOC on January 10, 11, and 14, until released by IEMA.

Division of Vehicles staff in Watseka stayed on-site (office area did not flood) to secure facility and protect equipment as much as possible. Fuel pumps were shut down to prevent additional water damage. On January 11, as water receded, staff performed clean-up and had garage bays operational by Monday, January 14. Diesel fuel pumps restored to operation also on January 14. Gasohol pumps still off due to water contamination, but a vendor has been called to rectify.

**IEPA – Illinois Environmental Protection Agency**

IEPA provided the SEOC with technical recommendations as well as deployed personnel to the Watseka area to check on the status of some potential haz-mat issues.

IEPA assessed area Waste Water Treatment Facilities on their impact from the flooding.

## Appendix 1.6 Gubernatorial Appeal (DR-1747) of Denial February 21, 2008



OFFICE OF THE GOVERNOR  
207 STATE HOUSE, SPRINGFIELD, ILLINOIS 62706

**ROD R. BLAGOJEVICH**  
GOVERNOR

February 21, 2008

The Honorable George W. Bush  
The President  
The White House  
Washington, D. C.

Through:

Edward Buikema  
Regional Administrator  
FEMA Region V  
536 South Clark, 6<sup>th</sup> Floor  
Chicago, IL 60605

Dear Mr. President:

Pursuant to 44 CFR 206.46, I am appealing your denial of my request for a major disaster declaration for the State of Illinois as a result of flooding in Iroquois and Livingston counties, dated January 18, 2008. This appeal is based on additional severe damage to residences that has been identified by local officials in their continuing inspections of property in their jurisdictions. It is also based on the changing and ongoing impact that the cold weather flood has had on the homes of the people who are most in need.

Within a week of when the flood along the Iroquois and Vermilion rivers began, the Illinois Emergency Management Agency (IEMA) sent damage assessment teams to the disaster area. As the flood water began to recede, IEMA worked with local officials to collect information on the extent and magnitude of the disaster in terms of damage to homes and businesses. It was immediately apparent that hundreds of families were in need of assistance that could only be made available through the Federal Emergency Management Agency (FEMA). In an effort to demonstrate the need for Federal assistance, IEMA requested that FEMA join State and local emergency management personnel in assessing the damage. FEMA quickly responded to provide their expertise in assessing flood damaged property.

Some flood damaged homes remained inaccessible during the assessment process and others had sustained relatively minor damage that within weeks, although unknown to the damage assessors at that time, was destined to turn into major damage. The change in the extent of damage to individual structures was primarily a result of the duration of the flood water that remained in the homes, the lack of furnace heat to dry the structures and the impact of additional flooding that occurred along the Iroquois River during the first week of February. As local officials continued to assess damage and inspect individual homes, it became apparent that the level and extent of damage observed during the joint Federal, State and local Preliminary Damage Assessment (PDA) that was conducted on January 15-18, 2008, did not accurately reflect the true impact of this flood disaster. Although the best information available at the time was collected during the PDA, the ongoing assessment by local officials has resulted in better information that provides an accurate accounting of the true impact. The additional time for local officials to receive damage information from homeowners and renters after the flood water completely receded has resulted in more detailed and comprehensive damage information. This additional damage information is apparently needed for FEMA to identify the need for a major disaster to be declared.

On receipt of your denial of my request for federal disaster assistance, IEMA immediately contacted emergency management personnel in Iroquois and Livingston counties to advise them that it would be necessary to submit an appeal using the new and additional damage information that they had been collecting. In a cooperative effort, IEMA worked with local officials and community leaders in Iroquois and Livingston counties, the cities of Pontiac and Waukega and the villages of Milford and Woodland to develop a plan for documenting the damage information. Assistance from FEMA in conducting a re-assessment of the flood damaged homes was requested and received. The re-assessment of the disaster damage identified 98 additional homes in Iroquois County that sustained major damage and an additional 88 that sustained minor damage. In Livingston County, an additional 21 homes with major damage were identified and 70 additional homes with minor damage. The results of the re-assessment are shown in the attachment to this letter.

Families in both counties continue to be in alternate housing due to the unsafe condition of their homes. Other people are living in their homes which are not considered safe and sanitary. This incident continues to be of such severity and magnitude that effective response is beyond the capabilities of the State and the affected local governments and supplementary Federal assistance is still necessary to help the people who are most in need. Individual Assistance to include the Individuals & Households Program and Small Business Administration disaster loans are specifically needed for Iroquois and Livingston counties. People remain unemployed as a result of this disaster and therefore, Disaster Unemployment Assistance is necessary. Hazard Mitigation Assistance for all counties statewide is needed to reduce the impact of future flood disasters.

Andrew Velasquez III, Director of the Illinois Emergency Management Agency, is working with the FEMA Region V Administrator and is providing ongoing information

related to damage assessment and the developing affect of this disaster on the impacted communities. Director Velasquez will continue to provide additional information as necessary.

Sincerely,

A handwritten signature in black ink, appearing to read "Rod R. Blagojevich". The signature is written in a cursive style with a large initial "R".

Rod R. Blagojevich  
Governor



**PRELIMINARY DAMAGE ASSESSMENT**

Completed on  
February 18, 2008

**Residential Damage Identified and Assessed as of February 18, 2008**

	Affected	Minor	Major	Destroyed	Total Impacted
Iroquois	158	238	162	1	559
Livingston	182	186	75	0	443
Total	340	424	237	1	1002

**Estimated Requirements for Individual Assistance under the Stafford Act**

	Assistance to Individuals and Households					Other Programs (Disaster Unemployment Assistance, Legal Services, and Crisis Counseling)
	Temporary Housing	Repairs	Replacement	Permanent Housing Construction	Other Needs Assistance	
Totals	\$171,600	\$4,973,620	\$28,200	\$0	\$424,193	TBD

## Appendix 1.7 Presidential Disaster Declaration (DR-1747) March 7, 2008

### Illinois Severe Storms and Flooding – FEMA-1747-DR

#### *Declared March 7, 2008*

On February 21, 2008, Governor Rod R. Blagojevich appealed the denial of his request for a major disaster declaration due to severe storms and flooding beginning on January 7, 2008, and continuing. The Governor requested a declaration for Individual Assistance for Iroquois and Livingston Counties and Hazard Mitigation for all counties. During the periods of January 15-18, 2008, and February 14-18, 2008, joint Federal, State, and local Preliminary Damage Assessments (PDAs) were conducted in the requested counties and are summarized below. PDAs estimate damages immediately after an event and are considered, along with several other factors, in determining whether a disaster is of such severity and magnitude that effective response is beyond the capabilities of the State and the affected local governments, and that Federal assistance is necessary.<sup>1</sup>

On March 7, 2008, President Bush declared that a major disaster exists in the State of Illinois. This declaration made Individual Assistance requested by the Governor available to affected individuals and households in Iroquois and Livingston Counties. This declaration also made Hazard Mitigation Grant Program assistance requested by the Governor available for hazard mitigation measures statewide.<sup>2</sup>

#### **Summary of Damage Assessment Information Used in Determining Whether to Declare a Major Disaster**

##### **Individual Assistance**

- Total Number of Residences Impacted:<sup>3</sup> 1,002
  - Destroyed - 1
  - Major Damage - 237
  - Minor Damage - 424
  - Affected - 340
  
- Percentage of insured residences:<sup>4</sup> (24%)
- Percentage of low income households:<sup>5</sup> (26%)
- Percentage of elderly households:<sup>6</sup> (17%)
  
- Total Individual Assistance cost estimate: \$5,597,498

##### **Public Assistance - (Not requested)**

- Primary Impact: -
- Total Public Assistance cost estimate: N/A
- Statewide per capita impact:<sup>7</sup> -
- Statewide per capita impact indicator:<sup>8</sup> \$1.24
- Countywide per capita impact: N/A
- Countywide per capita impact indicator:<sup>9</sup> \$3.11

Appendix 1.8 Gubernatorial Request (DR-1771) June 13, 2008

1771



OFFICE OF THE GOVERNOR  
207 STATE HOUSE, SPRINGFIELD, ILLINOIS 62706

ROD R. BLAGOJEVICH  
GOVERNOR

June 13, 2008

The Honorable George W. Bush  
The President  
The White House  
Washington, DC

Through:

Edward Buikema  
Regional Administrator  
FEMA Region V  
536 South Clark Street, 6<sup>th</sup> Floor  
Chicago, IL 60605

Dear Mr. President:

Under the provisions of Section 401 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. §§ 5121-5206 (Stafford Act), and implemented by 44 CFR § 206.36, I request that you declare an expedited major disaster for the State of Illinois as a result of severe storms and flooding beginning on June 1, 2008, and continuing. Counties throughout the State are being affected by flooding and the threat of flooding as a result of heavy rainfall occurring in Illinois and in adjacent states that have watersheds impacting the State of Illinois. Severe flooding has already occurred in Clark, Coles, Crawford, Cumberland, Jasper and Lawrence counties in southeast Illinois. Major flooding along the Mississippi River is occurring and will increase as the floodwaters from Iowa crest and move downstream. The Illinois counties affected by the Mississippi River are Adams, Calhoun, Hancock, Henderson, Mercer, Pike and Rock Island.

The flooding in the State is severe and the current weather trend indicates that it will expand into additional counties as the flood water from Indiana, Iowa and Wisconsin moves downstream impacting Illinois. This flood event is the fifth major flood to impact the State of Illinois in the past eleven months. Three of those flood events were declared as major disasters and federal disaster assistance was provided. The most recent flood that occurred in Southern Illinois during March and April of this year resulted in a request for a major disaster declaration and the final decision on my request is pending a determination on an appeal. In addition to the flooding that has resulted in major disasters during the past year, Illinois also received an emergency declaration for record snowfall. Coping with these disasters has strained the ability of the State and affected local governments to recover from this ongoing flooding.



The flooding that will occur along the Mississippi River will approach the river levels experienced in 1993. During the 1993 flood, water treatment facilities were flooded and in some cases, put out of service. Supplying potable water to the people in the affected areas became a major operational concern. It is critical that potable water be available as part of a contingency plan dealing with public health. Generators are likely to be needed to maintain the operation of water plants and other facilities. Public water service has already been limited in the southeastern Illinois counties that are currently underwater. The removal of debris, particularly in areas where levees have breached, is expected to be an extensive operation. Technical assistance from the federal government will be necessary to ensure the proper handling of debris. The State and federal government must be proactive and have resources in place to effectively respond to this emergency.

In response to the situation, I have taken appropriate action under State law and directed the execution of the Illinois Emergency Operations Plan by proclaiming that a disaster exists in the State of Illinois and I declared Clark, Coles, Crawford, Cumberland, Jasper, and Lawrence counties as disaster areas on June 10, 2008, and I declared Adams, Calhoun, Hancock, Henderson, Mercer, Pike and Rock Island counties on June 13, 2008, in accordance with Section 401 of the Stafford Act.

The State of Illinois has developed a hazard mitigation plan which was updated and approved by the Federal Emergency Management Agency (FEMA) in November, 2007. The Illinois Natural Hazards Mitigation Plan includes flood mitigation projects that have been and are projected to be implemented in many of the areas that are currently flooding.

A Preliminary Damage Assessment (PDA) will be requested as soon as the flooded areas become accessible. I have determined that this incident is of such severity and magnitude that effective response is beyond the capabilities of the State and the affected local governments and that supplementary federal assistance is necessary. At this time, I am specifically requesting Direct Federal Assistance for the counties mentioned above. I anticipate that after completion of a PDA, Individual Assistance (including the Individuals and Households Program, Disaster Unemployment Assistance and Crisis Counseling); Public Assistance; Hazard Mitigation Assistance statewide; and Small Business Administration disaster loans will be requested. I reserve the right to request additional programs and additional counties as the expanded need for federal assistance is identified.

State and local resources are being used to alleviate the conditions of this disaster. The State Emergency Operations Center is activated with all agencies having responsibilities in flood fighting. Illinois Emergency Management Agency (IEMA) staff is on scene to assist local governments in coordinating response activities. IEMA staff conducted organizational flood fighting meetings with local officials at two locations along the Mississippi River. The State of Illinois has provided emergency response personnel from the Illinois State Police (ISP) and the Illinois Department of Natural Resources to assist local governments in rescue and evacuation. The ISP is also providing aerial monitoring of flooded areas. The Illinois Environmental Protection Agency and the Illinois Department of Public Health are providing technical assistance to local governments related to public and private drinking water supplies. Potable water has been provided to local governments. In preparation for the flooding on the Mississippi River, sandbags have been provided to counties, municipalities and drainage districts. The Illinois Department of Transportation is providing transportation of equipment and sandbags to impacted areas. The Illinois Department of Corrections inmates have been filling and placing sandbags to assist with the local flood fight.

Local governments and the American Red Cross are providing shelters as needed. Over 200 people were evacuated in the flooded southeastern Illinois counties. Along the Mississippi River, local governments are organizing volunteers to assist in the flood fight by filling sandbags and feeding emergency workers.

I certify that for this major disaster, the State and local governments will assume all applicable non-federal shares of costs required by the Stafford Act.

I request Direct Federal Assistance for work and services to save lives and protect property. The type of assistance requested is potable water, generators, technical assistance for debris removal and other resources that may be determined necessary as the flooding progresses. The specific quantity, size, geographic area to be served and specifications of equipment will be determined as more detailed information on the flooding is developed.

In accordance with 44 CFR § 206.208, the State of Illinois agrees that it will, with respect to Direct Federal Assistance:

1. Provide without cost to the United States all lands, easements and rights-of-ways necessary to accomplish the approved work;
2. Hold and save the United States free from damages due to the requested work, and shall indemnify the federal government against any claims arising from such work;
3. Provide reimbursement to FEMA for the non-federal share of the cost of such work in accordance with the provisions of the FEMA-State Agreement; and
4. Assist the performing federal agency in all support and local jurisdictional matters.

In addition, I anticipate the need for debris removal, which poses an immediate threat to lives, public health, and safety.

Pursuant to Sections 403 and 407 of the Stafford Act, 42 U.S.C. §§ 5170b & 5173, the State agrees to indemnify and hold harmless the United States of America for any claims arising from the removal of debris or wreckage for this disaster. The State agrees that debris removal from public and private property will not occur until the landowner signs an unconditional authorization for the removal of debris.

I have designated Andrew Velasquez III, Director of the Illinois Emergency Management Agency as the State Coordinating Officer for this request. Director Velasquez will work with the Federal Emergency Management Agency in damage assessment and may provide further information or justification on my behalf.

Sincerely,

  
Rod R. Blagojevich  
Governor

Appendix 1.8.1 Gubernatorial Request (DR-1771) Addendum June 20, 2008



OFFICE OF THE GOVERNOR  
207 STATE HOUSE, SPRINGFIELD, ILLINOIS 62706

ROD R. BLAGOJEVICH  
GOVERNOR

June 20, 2008

The Honorable George W. Bush  
The President  
The White House  
Washington D.C.

Through:

Edward Buikema  
Regional Administrator  
FEMA Region V  
536 South Clark Street, 6<sup>th</sup> Floor  
Chicago, IL 60605

Dear Mr. President:

This letter is an addendum to my June 13, 2008, request for an expedited major disaster declaration for the State of Illinois that was submitted under the provisions of Section 401 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act). As stated in my request letter, I specifically requested Direct Federal Assistance and reserved the right to request additional programs and counties after the completion of a damage assessment and as the need for federal assistance expands. This is a growing disaster that continues to be of such severity and magnitude that effective recovery is beyond the capabilities of the State and local governments.

As of this date, the current disaster in the State of Illinois resulting from severe storms and flooding has expanded into a catastrophe of unusual severity and magnitude and field damage assessments are not necessary to determine the need for supplemental federal assistance. I therefore specifically request Individual Assistance (including the Individuals and Households Program, Disaster Unemployment Assistance and Crisis Counseling) and Public Assistance for the following 21 counties: Adams, Calhoun, Clark, Coles, Crawford, Cumberland, Douglas, Edgar, Hancock, Henderson, Jasper, Jersey, Knox, Lake, Lawrence, Madison, Mercer, Pike, Rock Island, St. Clair and Winnebago. I also request Hazard Mitigation Assistance statewide. I reserve the right to request additional programs and counties if determined necessary.

I continue to take appropriate action under State law and directed the execution of the Illinois Emergency Operations Plan by proclaiming that a disaster exists and specifically declaring all counties mentioned in this request as disaster areas. All counties in the State are covered by the Illinois Natural Hazard Mitigation Plan that was last approved by FEMA in November 2007.

I appreciate the efforts by FEMA, the Army Corps of Engineers and other federal agencies in their support of the flood fight in Illinois. Even with the extensive sandbagging and reinforcement of the levees along Illinois rivers, there have been numerous breaches resulting in widespread flooding. This flooding has displaced over 2,000 people creating the need for temporary housing. Although the entire flood area has not been assessed on the ground due to inaccessibility, it is apparent that hundreds of homes have been destroyed or received major damage. The need for federal assistance exists now and waiting for the water to recede in order to conduct detailed damage assessments only delays the federal help that the people of Illinois need and deserve.

The costs incurred by the State and local governments to fight this flood and begin debris removal have been estimated to have already exceeded \$15 million and it is certain that the damage to public property will be in the tens of millions. The State agency flood fighting costs incurred to date and projected to June 30 are:

* Illinois Department of Corrections	\$294,607
* Illinois Department of Natural Resources	\$356,740
* Illinois Department of Public Health	\$257,750
* Illinois Department of Transportation	\$1,510,000
* Illinois Emergency Management Agency	\$1,730,540
* Illinois Environmental Protection Agency	\$78,303
* Illinois Emergency Medical Response Team	\$4,458
* Illinois National Guard	\$5,094,987
* Illinois State Police	\$74,040

Although the daily costs of fighting the historic flood may end by June 30, the costs to repair and/or rebuild the devastated infrastructure and remove the debris will rise above the State and local funds available for disaster recovery operations. It took years to recover from the 1993 flood and the recovery would not have been possible without federal assistance. Undoubtedly, recovery from this 2008 flood will not be possible without federal assistance.

One only has to consider the cost of the flood fight in 1993 along the Mississippi River and realizing that this year's flooding breached many of the same levees, flooded the same roads, deposited similar amounts of debris on public property and caused a public health emergency once again, to understand that a detailed assessment of public infrastructure is unnecessary to determine the need for federal assistance.


I continue to certify that for this major disaster, the State and local governments will assume all applicable non-federal shares of costs required by the Stafford Act.

I anticipate the need for debris removal, which poses an immediate threat to lives, public health and safety.

Pursuant to Sections 403 and 407 of the Stafford Act, 42 U.S.C. §§ 5170b & 5173, the State agrees to indemnify and hold harmless the United States of America for any claims arising from the removal of debris or wreckage for this disaster. The State agrees that debris removal from public and private property will not occur until the landowner signs an unconditional authorization for the removal of debris.

Andrew Velasquez III, Director of the Illinois Emergency Management Agency, continues to serve as the State Coordinating Officer for this disaster and is working with FEMA to fight this flood and provide the needed assistance to the people of Illinois. Director Velasquez will continue to provide information on damages and costs as they become available.

Sincerely,

  
Rod R. Blagojevich  
Governor



## Appendix 1.9 Presidential Disaster Declaration (DR-1771) June 24, 2008

### **Illinois Severe Storms and Flooding – FEMA-1771-DR**

#### *Declared June 24, 2008*

On June 13, 2008, Governor Rod R. Blagojevich requested an expedited major disaster declaration due to severe storms and flooding beginning on June 1, 2008, and continuing. The Governor requested direct Federal assistance for 13 counties. On June 20, 2008, Governor Blagojevich submitted an addendum and requested a declaration for Individual Assistance and Public Assistance for 21 counties and Hazard Mitigation for all counties. This event was of the severity and magnitude that the need for supplemental Federal assistance was determined to be necessary prior to the completion of joint Federal, State, and local Preliminary Damage Assessments (PDAs). Per 44 C.F.R. § 206.33(d) and § 206.36(d), the requirement for a joint PDA may be waived for those incidents of such unusual severity and magnitude that formal field damage assessments are not required to establish the need for supplemental Federal assistance under the Stafford Act.<sup>1</sup>

On June 24, 2008, President Bush declared that a major disaster exists in the State of Illinois. This declaration made emergency protective measures, limited to direct Federal assistance under the Public Assistance program requested by the Governor available to State and eligible local governments and certain private nonprofit organizations on a cost-sharing basis in response to the severe storms and flooding in Adams, Calhoun, Clark, Coles, Crawford, Cumberland, Hancock, Henderson, Jasper, Lawrence, Mercer, Pike, and Rock Island Counties.<sup>2</sup>

#### **Summary of Damage Assessment Information Used in Determining Whether to Declare a Major Disaster**

##### **Individual Assistance**

- Total Number of Residences Impacted:<sup>3</sup> N/A
  - Destroyed - -
  - Major Damage - -
  - Minor Damage - -
  - Affected - -
- Percentage of insured residences:<sup>4</sup> -
- Percentage of low income households:<sup>5</sup> -
- Percentage of elderly households:<sup>6</sup> -
- Total Individual Assistance cost estimate: N/A

##### **Public Assistance**

- Primary Impact: Emergency Protective Measures
- Total Public Assistance cost estimate: N/A
- Statewide per capita impact:<sup>7</sup> -
- Statewide per capita impact indicator:<sup>8</sup> \$1.24
- Countywide per capita impact: -
- Countywide per capita impact indicator:<sup>9</sup> \$3.11

## Appendix 2: IRB Approval



DIVISION OF RESEARCH INTEGRITY AND COMPLIANCE  
Institutional Review Boards, FWA No. 00001669  
12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799  
(813) 974-5638 • FAX (813) 974-5618

June 2, 2011

Richard Salkowe  
Geography  
4130 Carrollwood Village Dr  
Tampa, FL 33618

RE: **Expedited Approval** for Continuing Review  
IRB#: Pro00001044  
Title: Federal Disaster Declarations and Denials: Analyzing Spatial Equity in the  
Implementation of the Stafford Act

Study Approval Period: 7/2/2011 to 7/2/2012

Dear Dr. Salkowe,

On 6/2/2011 the Institutional Review Board (IRB) reviewed and **APPROVED** the above protocol **for the period indicated above**. It was the determination of the IRB that your study qualified for expedited review based on the federal expedited category number:

- (5) Research involving materials (data, documents, records, or specimens) that have been collected, or will be collected solely for nonresearch purposes (such as medical treatment or diagnosis).
- (6) Collection of data from voice, video, digital, or image recordings made for research purposes.
- (7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Consent Document(s):

[Informed Consent to Participate in Research .pdf](#) 6/2/2011 1:32 PM 0.02

Please note, if applicable, the **enclosed informed consent/assent documents are valid during the period indicated by the official, IRB-Approval stamp located on page one of the form**. Valid consent must be documented on a copy of the most recently IRB-approved consent form. Make copies from the enclosed original.

**Please reference the above IRB protocol number in all correspondence** regarding this protocol with the IRB or the Division of Research Integrity and Compliance. It is your responsibility to conduct this study in accordance with IRB policies and procedures and as approved by the IRB.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

A handwritten signature in black ink that reads "John A. Schinka, Ph.D." The signature is written in a cursive style with a large initial 'J' and 'S'.

John Schinka, PhD, Chairperson  
USF Institutional Review Board

Cc: Anna Davis, USF IRB Professional Staff



DIVISION OF RESEARCH INTEGRITY AND COMPLIANCE  
Institutional Review Boards, FWA No. 0000166  
12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-479  
(813) 974-5638 • FAX (813) 974-561

June 8, 2012

Richard Salkowe  
Geography  
4130 Carrollwood Village Dr  
Tampa, FL 33618

RE: **Expedited Approval** for Continuing Review  
IRB#: Pro00001044  
Title: Federal Disaster Declarations and Denials: Analyzing Spatial Equity in the  
Implementation of the Stafford Act

Study Approval Period: 7/2/2012 to 7/2/2013

Dear Dr. Salkowe,

On 6/7/2012 the Institutional Review Board (IRB) reviewed and **APPROVED** the above protocol **for the period indicated above**. It was the determination of the IRB that your study qualified for expedited review based on the federal expedited category number:

- (5) Research involving materials (data, documents, records, or specimens) that have been collected, or will be collected solely for nonresearch purposes (such as medical treatment or diagnosis).
- (6) Collection of data from voice, video, digital, or image recordings made for research purposes.
- (7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Protocol Document(s):  
[Dissertation\\_Proposal\\_Richard\\_Salkowe](#)

Consent Document(s):  
[Informed Consent to Participate in Research .pdf](#)

**We are aware that you had used an unapproved version of the valid consent form to consent subjects. This was determined to be not serious, non-continuing non-compliance, with no further action needed. Please refer to USF HRPP policy #601 which addresses the need to only use valid, USF IRB watermarked consent forms.**

Please note, if applicable, the **informed consent/assent documents are valid during the period indicated by the official, IRB-Approval stamp located on the form.** You are to use only the watermarked/stamped consent forms found under the "Attachment Tab" in the recruitment of participants. Make copies from the original.

**Please reference the above IRB protocol number in all correspondence** regarding this protocol with the IRB or the Division of Research Integrity and Compliance. It is your responsibility to conduct this study in accordance with IRB policies and procedures and as approved by the IRB.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,



John Schinka, PhD, Chairperson  
USF Institutional Review Board

## Appendix 3: Publication Permission Documents



# Copyright Agreement

1. The following agreement is effective if and when the Article submitted to be published by Walter de Gruyter GmbH/ Walter de Gruyter, Inc. (the "Publisher") is accepted.

2.1 The Author/Editor grants (for U.S. or U.K. government employees: to the extent transferable according to applicable law or regulations) to the Publisher the following rights to the Article, including any supplemental material, and any parts, extracts or elements thereof:

- the right to reproduce and distribute the Article in printed form, including print-on-demand;
- the right to produce prepublications, reprints, and special editions of the Article;
- the right to translate the Article into other languages;
- the right to reproduce the Article using photomechanical or similar means including, but not limited to photocopy, and the right to distribute these reproductions;
- the right to reproduce and distribute the Article electronically or optically on any and all data carriers or storage media – especially in machine readable/digitalized form on data carriers such as hard drive, CD-Rom, DVD, Blu-ray Disc (BD), Mini-Disk, data tape – and the right to reproduce and distribute the Article via these data carriers; the right to store the Article in databases, including online databases, and the right of transmission of the Article in all technical systems and modes; the right to make the Article available to the public or to closed user groups on individual demand, for use on monitors or other readers (including e-books), and in printable form for the user, either via the internet, other online services, or via internal or external networks.

2.2. The rights pursuant to clause 2.1 shall be granted as exclusive rights for the duration of the copyright, each unlimited in geographic scope. Should the Author wish to reproduce and distribute the Article elsewhere after one year following publication, the Author must obtain the written consent of the Publisher. Taking into account the interests on both sides, the Publisher shall not unreasonably withhold its consent. If the Article is submitted by the Editor, the Editor shall inform the Author(s) of this provision.

2.3. The Publisher may transfer the rights granted to it pursuant to clauses 2.1 and 2.2 in whole or in part to third parties, or may grant licenses to third parties to use rights to which it is entitled. Any claims from agreements between the Author and reprographic rights societies, in particular the German VG Wort, to which the Author is entitled shall remain unaffected.



2.4. The Author/Editor furthermore grants the Publisher the exclusive and permanent rights without any restriction as to content and territory for all forms of media of expression now known or that will be developed in the future. The grant of rights shall also extend to the exploitation of rights of use both in the Publisher's own publishing company and through the grant (including a partial grant) of rights to third parties in exchange for remuneration or free of charge.

### **3. Obligations of the Author/Editor**

The Author/Editor warrants that a) Author is the Author of the Article or, if Editor, Editor has properly and irrevocably acquired without restriction any and all rights in and to the Article to the extent as stated in clause 2.1.; b) Author/Editor is entitled without restriction to grant such rights to the Publisher; c) the Article is not libelous and does not infringe on any copyrights, performing rights, trademark rights, personal rights or any other third party rights or is otherwise unlawful; and d) the Article or substantial parts thereof have not been published elsewhere.

### **4. Retention of Rights**

The Author/Editor may deposit an Author-created version of the Article on Author's/Editor's funder's or funder's designated repository at the funder's request or as a result of a legal obligation, provided it is not made publicly available until 12 months after official publication. Author/Editor may not use the Publisher's PDF version, which is posted on [www.degruyter.com](http://www.degruyter.com), for the purpose of that deposit. Additionally, the Author/Editor may deposit the Publisher's PDF version of the Article on Author's/Editor's own website or Author's/Editor's institute's designated repository, provided it is not made publicly available until 12 months after official publication. Furthermore, the Author/Editor may only post the Article provided acknowledgement is given to the original source of publication and a link is inserted to the published Article on Publisher's website. The link must be accompanied by the following text: "The final publication is available at [www.degruyter.com](http://www.degruyter.com)". The Author/Editor is requested to use the appropriate DOI for the Article.

### **5. Backup Copy**

The Author/Editor shall be obliged to retain a back-up copy of the manuscript (data file and print out or PDF, as well as copy for illustrations).

### **6. Reversion of Rights**

All rights pursuant to clauses 2 to 4 shall revert to the Author should the Article be rejected during the publication process.

### **7. Proofreading**

Upon receiving the proofs, the Author/Editor agrees to promptly check the proofs carefully,

Copyright © 2011–2014 by Walter de Gruyter GmbH



**Confirmation Number: 11156398**  
**Order Date: 02/03/2014**

**Customer Information**

**Customer:** Richard Salkow  
**Account Number:** 3000624090  
**Organization:** Richard Salkow  
**Email:** rsalkow@mail.usf.edu  
**Phone:** +1 (813)9621356  
**Payment Method:** Invoice

**This not an invoice**

**Order Details**

**Behavioral Health Response to Disasters**

**Billing Status:**  
**N/A**

**Order detail ID:** 64419390  
**ISBN:** 9781439821237  
**Volume:**  
**Issue:**  
**Start page:**  
**Publisher:** CRC Press Taylor and Francis Group  
**Author/Editor:** Richard Salkow/ Julie Framingham,  
 Martell L. Teasley

**Permission Status:** **Granted**  
**Permission type:** Republish or display content  
**Type of use:** Republish in a thesis/dissertation  
**Job Ticket:** 500635415  
**Order License Id:** 3336600408406

**Requestor type:** Author of requested content  
**Format:** Electronic  
**Portion:** chapter/article  
**Number of pages in chapter/article:** 32  
**Title or numeric reference of the portion(s):** Chapter 1 and Chapter 3  
**Title of the article or chapter the portion is from:** Chapter 1-Past Disaster Experiences and Behavioral health Outcomes Chapter 3-Governmental Roles and Responsibilities in Disaster Behavioral Health Response and Recovery  
**Editor of portion(s):** Julie L. Framingham and Martell L. Teasley  
**Author of portion(s):** Chapter 1 Richard Salkow, Chapter 3 Richard Salkow and Julie Framingham  
**Volume of serial or monograph:** N/A  
**Page range of portion:** Chapter 1,3  
**Publication date of portion:** 04/23/2012  
**Rights for:** Main product  
**Duration of use:** Life of current edition  
**Creation of copies for the disabled:** no  
**With minor editing privileges:** yes



<b>For distribution to</b>	Worldwide		
<b>In the following language(s)</b>	Original language of publication		
<b>With incidental promotional use</b>	no		
<b>Lifetime unit quantity of new product</b>	0 to 499		
<b>Made available in the following markets</b>	academic PhD dissertation		
<b>The requesting person/organization</b>	Richard Salkowe PhD Candidate University of South Florida		
<b>Order reference number</b>			
<b>Author/Editor</b>	Richard Salkowe		
<b>The standard identifier</b>	reba3210		
<b>The proposed price</b>	0		
<b>Title</b>	Federal Disaster Declarations and Denials: Analyzing Spatial Equity in the Implementation of the Stafford Act		
<b>Publisher</b>	University of South Florida-ProQuest Dissertation		
<b>Expected publication date</b>	Aug 2014		
<b>Estimated size (pages)</b>	250		
<b>Note:</b> This item was invoiced through CCC's RightsLink service. <a href="#">More Info</a>			
<b>\$ 0.00</b>			
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;"><b>Total order items: 1</b></td> <td style="text-align: right;"><b>Order Total: \$0.00</b></td> </tr> </table>		<b>Total order items: 1</b>	<b>Order Total: \$0.00</b>
<b>Total order items: 1</b>	<b>Order Total: \$0.00</b>		

[Get Permission](#) | [License Your Content](#) | [Products And Solutions](#) | [Partners](#) | [Education](#) | [About Us](#)  
[Privacy Policy](#) | [Terms & Conditions](#)  
 Copyright 2014 Copyright Clearance Center