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THESIS

**BUILDING COMMUNITY CAPACITY
AND RESILIENCE THROUGH IMPROVEMENTS
IN ECONOMIC RECOVERY**

by

Kevin D. McMahan

September 2019

Co-Advisors:

Glen L. Woodbury
Lauren S. Fernandez (contractor)

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**BUILDING COMMUNITY CAPACITY AND RESILIENCE THROUGH
IMPROVEMENTS IN ECONOMIC RECOVERY**

Kevin D. McMahan
Colonel, United States Army National Guard
BS, University of Idaho, 1991
MPA, University of Idaho, 1993

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Approved by: Glen L. Woodbury
Co-Advisor

Lauren S. Fernandez
Co-Advisor

Erik J. Dahl
Associate Chair for Instruction
Department of National Security Affairs

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ABSTRACT

This research answers the following question: How does the United States improve economic recovery to mitigate the impacts a disaster has on a community? The thesis examines existing literature and insight from subject-matter experts to determine how the nation can improve economic recovery after a disaster to mitigate the overall impact on communities. Using the Delphi methodology, subject-matter experts from different levels of government, as well as the business sector, answered questions about the present status of knowledge, capabilities, and capacity of economic recovery. The Delphi information became the basis for a net assessment, which helped to create a shared understanding of U.S. capabilities and how they can counter or mitigate the overall impact of a nebulous and challenging problem. This assessment analyzed economic recovery using three broad categories: the National Disaster Recovery Framework, the operational environment, and governance. The research identified three problems hindering existing capabilities: limited unity of effort, unrealistic objectives, and a lack of emphasis on economic recovery. Addressing these areas would allow the nation to improve its preparedness capability and, more importantly, provide practitioners and stakeholders the tools to support the citizens they serve.

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LIST OF ACRONYMS AND ABBREVIATIONS

BA	business assistance
BPDL	business physical disaster loan
DHSEM	Division of Homeland Security and Emergency Management
EDALP	Expedited Disaster Assistance Loan Program
EIDL	economic injury disaster loan
EMD	Emergency Management Division
ERSF	economic recovery support function
ESF	emergency support function
FDRC	federal disaster recovery coordinator
FEMA	Federal Emergency Management Agency
GAO	Government Accountability Office
IA	individual assistance
IDAP	Immediate Disaster Assistance Program
LDRM	local disaster recovery manager
NDRF	National Disaster Recovery Framework
NGO	non-governmental organization
PA	public assistance
PDAP	Private Disaster Assistance Program
PDM	Pre-Disaster Mitigation
PPP	public-private partnership
RSF	recovery support function
SBA	Small Business Administration

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EXECUTIVE SUMMARY

Disasters in the form of weather patterns, earthquakes, and human-made catastrophes have become more frequent and severe in recent years. These events have a direct economic impact on communities. The losses incurred, in both the short and long term, can overwhelm a community long after the disaster subsides. For example, in 2017, the United States experienced several disasters that devastated communities, costing an estimated \$306 billion in damages.¹ To counter the economic effects disasters have on a community, improvements in economic recovery related to disasters must take place. Taking this action supports communities and the small businesses within them, which make up 99.8 percent of all businesses and employ nearly half of the U.S. workforce.² These improvements also support the ideas laid out in *Presidential Policy Directive 8: National Preparedness* and nest with the capitalistic ideas that are foundational to the country.³ To do otherwise places the nation at economic risk, thereby jeopardizing its way of life.

This thesis examines the concept of economic recovery and seeks to understand how the United States can improve economic recovery to mitigate the impacts a disaster has on a community. This examination provides insight for policymakers and community leaders to bring about improvements. To facilitate this effort, individuals from local, state, and federal governments and the business community were approached to share their insight and perspectives and to determine recommendations for improvement. The research employed a two-round Delphi survey. The information obtained from the surveys was then analyzed using a net assessment. The net assessment process, traditionally used by the Department of Defense to assess the threat of an adversary, helped to create a shared

¹ Umair Irfan and Brian Resnick, “Megadisasters Devastated America in 2017. And They’re Only Going to Get Worse,” Vox, March 26, 2018, <https://www.vox.com/energy-and-environment/2017/12/28/16795490/natural-disasters-2017-hurricanes-wildfires-heat-climate-change-cost-deaths>.

² *Disaster Recovery: Evaluating the Role of America’s Small Business in Rebuilding Their Communities: Hearing before the Committee on Small Business and Entrepreneurship*, Senate, 112th Cong., 1st sess., September 15, 2011, <https://www.govinfo.gov/content/pkg/CHRG-112shrg73458/pdf/CHRG-112shrg73458.pdf>.

³ Anne Glenzer, “PPD-8 Overview Presentation” (Washington, DC: Department of Homeland Security, January 16, 2013), https://www.fema.gov/media-library-data/20130726-1904-25045-2748/draft_ppd_8_eric_runnels_cfsc_20120928_fd_.pdf.

understanding of U.S. capabilities and how they can counter or mitigate the overall impact of a nebulous and challenging problem. The assessment also provides decision-makers with insight, so they can develop long-term solutions. The net assessment examined the National Disaster Recovery Framework, the operational environment that supports economic recovery and governance. Instead of using traditional criteria like risk or threat, the assessment focused on flexibility, standardization, and unity of effort as evaluation criteria. The research identified three issues hindering existing capabilities: limited unity of effort, unrealistic objectives, and a lack of emphasis on economic recovery. When one accounts for the total number of local, state, federal, and tribal governments throughout the nation, these issues limit the nation's ability to successfully support economic recovery. This thesis also concluded that the following recommendations would produce positive results.

- Adopt and publicize a universal definition of economic recovery
- Revise essential elements of economic recovery
- Implement Small Business Association loan programs
- Increase training opportunities for economic recovery
- Establish pre-disaster funding as a part of a mandated economic recovery plan
- Conduct additional research on economic recovery

Moreover, such steps would allow the nation to improve its preparedness capability and provide practitioners and stakeholders with the tools to support its citizens.

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I. INTRODUCTION

The chaotic and desperate pictures of hurricanes, wildfires, and flooding throughout the United States in 2017 shocked the public. These natural events caused \$306 billion in damages, making it the costliest year in U.S. history for natural and human-made disasters.¹ Disasters destroy or severely damage homes, businesses, and governmental infrastructures throughout the United States each year.² These annual hazards place a significant burden on state and federal budgets, displace individuals and businesses, and weaken community resilience.

The resiliency of a community is an important attribute that requires the commitment of a variety of stakeholders. Resiliency is the process of linking networked capacities that are robust and adaptive to create or maintain an environment that generates a positive outcome for the population following a disaster.³ Without it, the community faces a situation in which uncertainty can erode any possibility of surviving. Because of this uncertainty, therefore, it is economically and socially prudent for leaders to ensure their communities can rebound to a pre-disaster status or establish a new normal if a return to pre-disaster state is infeasible, as quickly as possible. In some cases, this new normal may require local leaders and the populous to determine whether they will commit precious resources to rebuild the community the way it was or make the difficult choice of not rebuilding at all. However, for the community to survive, these individuals must return the community—its businesses, government, and essential services—to standards that allow it to support the needs of its citizens. Otherwise, a spiraling effect may occur in which individuals who evacuated do not return soon. Without customers, businesses do not re-open promptly or fail altogether. This effect on businesses ripples across the community,

¹ Umair Irfan and Brian Resnick, “Megadisasters Devastated America in 2017. And They’re Only Going to Get Worse,” Vox, March 26, 2018, <https://www.vox.com/energy-and-environment/2017/12/28/16795490/natural-disasters-2017-hurricanes-wildfires-heat-climate-change-cost-deaths>.

² Brandon Miller, “US Shatters Record for Disaster Costs in 2017,” CNN, January 8, 2018, <https://www.cnn.com/2018/01/08/us/2017-costliest-disasters/index.html>.

³ Fran H. Norris et al., “Community Resilience as a Metaphor, Theory, Set of Capacities, and Strategy for Disaster Readiness,” *American Journal of Community Psychology* 41, no. 1/2 (March 2008): 131, <https://doi.org/10.1007/s10464-007-9156-6>.

and employment becomes scarce or non-existent, jeopardizing the community's long-term recovery.⁴ Without jobs, individuals who weathered the disaster migrate out of the area, and those who evacuated stay away. The loss of human capital, in turn, affects the local tax base, thereby hampering the local jurisdiction's ability to recover economically.⁵ For example, approximately 1.5 million were displaced from New Orleans following Hurricane Katrina, of which 47 percent of African Americans and 19 percent of whites never returned.⁶ Similar results regarding the loss of human capital took place in China following the 2008 earthquake in Wenchuan, which killed 69,226—another 17,923 were reported missing.⁷ This loss had a direct impact on the region and generated a 47 percent business interruption from 2008 to 2011, not to mention the recovery period was extended by more than a year.⁸ To counter this effect, a greater emphasis on building community capacity and resilience through improvements in economic recovery is paramount.

Unfortunately, this is not the current state of affairs. Each year, governments at the federal, state, local, and tribal levels spend significantly more time, funding, and effort in planning for disaster response than long-term economic recovery. A case in point is the *National Preparedness Report for 2014*—the annual report used to assess the nation's progress toward achieving the *National Preparedness Goal*. Each year, emergency management professionals rank-order the core capabilities from most proficient (rank of 1) to least proficient (higher ranking). In 2014, the core capability of *planning*, ranked 10

⁴ *Disaster Recovery: Evaluating the Role of America's Small Business in Rebuilding Their Communities: Hearing before the Committee on Small Business and Entrepreneurship*, Senate, 112th Cong., 1st sess., September 15, 2011, <https://www.govinfo.gov/content/pkg/CHRG-112shrg73458/pdf/CHRG-112shrg73458.pdf>.

⁵ Stephanie E. Chang and Adam Z. Rose, "Towards a Theory of Economic Recovery from Disasters," *International Journal of Mass Emergencies and Disasters* 32, no. 2 (August 2012): 173–74, <https://pdfs.semanticscholar.org/5f6d/8f07a1dc150d40ba50f335e779f3a111cfa5.pdf>.

⁶ Benjamin K. Sovacool, May Tan-Mullins, and Wokje Abrahamse, "Bloated Bodies and Broken Bricks: Power, Ecology, and Inequality in the Political Economy of Natural Disaster Recovery," *World Development* 110 (October 2018): 246–47, <https://doi.org/10.1016/j.worlddev.2018.05.028>.

⁷ Wei Xie et al., "Dynamic Economic Resilience and Economic Recovery from Disasters: A Quantitative Assessment," *Risk Analysis* 38, no. 6 (June 2018): 1309, <https://doi.org/10.1111/risa.12948>.

⁸ Xie et al., 1317.

out of 31 while *economic recovery* ranked 27 out of 31.⁹ Three years later, planning jumped to rank 4 out of 32 while economic recovery slipped to 31 out of 32.¹⁰ This example demonstrates that the emergency management community has assessed its proficiency in supporting economic recovery as needing significant improvement.

The funding to support this effort also provides excellent insight. During fiscal year 2015, planning received more than \$350 million in federal grants, which represents approximately 25 percent of the total pre-disaster funds made available to jurisdictions. Conversely, economic recovery received just under \$1 million, or less than 1 percent, during the same period.¹¹ One could surmise a portion of the \$350 million for planning went toward the development of long-term, comprehensive economic recovery development, yet economic recovery remains a “persistent challenge,” and business and economic continuity planning represents a significant gap.¹² This gap is highlighted by Christopher Atkinson and Alka Sapat, who note research continues to focus on the impact disasters have on individuals and government, not on impacts in the business sector.¹³ These examples demonstrate a lack of focus on or understanding of the importance of developing a long-term ability to overcome and endure the economic impacts of a disaster on a community. Therefore, this thesis examines economic recovery through the eyes of various stakeholders to determine critical lines of effort as opposed to an all-encompassing perspective to spur progress. The result is an improvement, not for improvement’s sake but for long-term resiliency of our communities and the individuals who live within them.

⁹ Federal Emergency Management Agency, *2014 National Preparedness Report* (Washington, DC: Department of Homeland Security, 2014), 15, 66-67, https://www.fema.gov/media-library-data/1409688068371-d71247cabc52a55de78305a4462d0e1a/2014_NPR_FINAL_082914_508v11.pdf

¹⁰ Federal Emergency Management Agency, *2017 National Preparedness Report* (Washington, DC: Department of Homeland Security, 2017), 17, https://www.fema.gov/media-library-data/1503926640648-0b64216b808eb42a93ba96fe8888d113/2017NationalPreparednessReport_508_COMPLIANT.pdf.

¹¹ Federal Emergency Management Agency, 10.

¹² Federal Emergency Management Agency, *2018 National Preparedness Report* (Washington, DC: Department of Homeland Security, 2018), 38, <https://www.hsdl.org/?abstract&did=818816>.

¹³ Christopher L. Atkinson and Alka K. Sapat, “Hurricane Wilma and Long-Term Business Recovery in Disasters: The Role of Local Government Procurement and Economic Development,” *Journal of Homeland Security and Emergency Management* 11, no. 1 (2013): 169–70, <https://doi.org/10.1515/jhsem-2013-0002>.

A. RESEARCH QUESTION

How do we improve economic recovery to mitigate the impacts a disaster has on a community?

B. RESEARCH DESIGN

This thesis analyzed economic recovery to identify where improvements are possible to mitigate the impacts of disasters. The Delphi and net assessment methodologies were used to generate insight and develop recommendations.

1. Delphi Method

The Delphi method was chosen as a methodology because economic recovery is ambiguous, nebulous, and hard to attain. The foundational aspect of this method is to “have an informed group present all the opinions and supporting evidence for consideration.”¹⁴ Although existing literature provides some insight into the opinions and evidence surrounding economic recovery, the real knowledge and ideas that produce tangible results exist within those individuals who have experienced or supported economic recovery efforts firsthand. Therefore, 14 subject-matter experts—nine non-federal and five federal participants, of which 89 percent categorized themselves as emergency management professionals—throughout the United States, so as not to generate a regional bias, answered questions on topics such as policy, practices, and organizational wisdom related to the larger conversation of economic recovery. These subject-matter experts come from a variety of fields including emergency management, the business sector, and government. The subject-matter experts represented large, medium, and small organizations, ensuring the output reflected different vantage points. The survey results provide insight into the role of organizations, the capacity and capability of these organizations, and the skillset each should have to work within the emergency management environment. Using the collective perspective and acumen of these subject-matter experts, Delphi helped to establish a refined conclusion that came about through a phased process.

¹⁴ Harold A. Linstone and Murray Turoff, *The Delphi Method: Techniques and Applications* (Boston: Addison-Wesley Publishing, 1975), 84.

The first phase of the Delphi process posed relevant questions to subject-matter experts to gain their perspective and insight. See Appendix C for a list of first-round questions. Their responses were assessed during the second phase to identify agreement and dissent, with an emphasis on analyzing disagreement to determine why it exists.¹⁵ The results from this assessment generated follow-on questions, which were incorporated into a second round of questions given to the subject-matter experts a month later—the third phase of the process. See Appendix D for a list of questions asked during the second round of questioning. Finally, the collective responses were assessed one last time, producing a condensed output that summarized the ideas of the group, thereby bringing about a shared understanding.

2. Net Assessment

Net assessment is a strategic methodology that requires an individual or group of individuals to think about a problem and diagnosis it. Aspects of the assessment include decomposition, examining a problem over extended periods as opposed to the short term, and understanding the unique dynamics of bureaucracies and their relationship to the problem.¹⁶ Developed during the Cold War, net assessments were used by the Department of Defense to evaluate national security challenges. To ensure a unified understanding of the problem, researchers may consider not only military capabilities but also industrial and financial capabilities.¹⁷ In simple terms, individuals look at the problem from different perspectives to identify aspects such as threats, capabilities, and other elements.¹⁸ Therefore, the net assessment refines the output generated by the Delphi method to create an understanding of a difficult problem. This assessment categorized the data and analyzed it to create opportunities to expand a community's capacity to recover from a disaster.

¹⁵ Linstone and Turoff, 5–6.

¹⁶ Paul Bracken, "Net Assessment: A Practical Guide," *Parameters* 36, no. 1 (Spring 2006): 92–97, <https://ssi.armywarcollege.edu/pubs/parameters/articles/06spring/bracken.pdf>.

¹⁷ Erik J. Dahl, "A Homeland Security Net Assessment Needed Now," *Strategic Studies Quarterly* 9, no. 4 (2015): 64–65, https://www.airuniversity.af.edu/Portals/10/SSQ/documents/Volume-09_Issue-4/Dahl.pdf.

¹⁸ Dahl, 71.

This analysis is prescriptive, meaning it provides new ideas, different perspectives, and recommendations, all with the notion of creating a fresh perspective to bring about change. The problem-solving approach has not generated sufficient results to date because economic recovery is difficult to categorize. Therefore, advancing the conversation to a different level requires a different vantage point. This research highlights these perspectives and will hopefully cause experts, stakeholders, academics, and others to conduct more exhaustive research to spawn progress. Although advances in economic recovery will not eliminate the total impact disasters have on communities, such advances could greatly improve the existing situation.

3. Constraints and Limitations of the Research

Although the overall assessment demonstrates three specific areas limiting the capability of economic recovery, the research represents a limited sample of practitioners and stakeholders. Academic constraints placed on the study generated a limitation, which in turn impacted the dataset used for the assessment. These impediments, therefore, restricted the development of a comprehensive, collective perspective.

Within the academic arena, the Naval Postgraduate School's Institutional Review Board established a constraint of surveying or interviewing no more than nine non-federal employees due to its interpretation of the Office of Management and Budget Paperwork Reduction Act.¹⁹ Its understanding of the act restricts a federal employee from engaging individuals outside the federal government because of the belief that doing so would cause an undue burden on these organizations and individuals. This constraint limited the number of candidates within the data pool used to create the assessment. Although it may have been practical to seek a larger pool of federal participants, it was infeasible because their responses would have skewed the data toward a federal viewpoint.

As this research focuses on improving economic recovery to mitigate the impacts a disaster has on a community, the local and state perspective must not be drowned out by that of the federal government. This perspective comes from the local community's

¹⁹ Lawrence Shattuck, email message to the author, January 25, 2019.

“primacy in preparing for and managing the response and recovery of its community,” which is shared and perpetuated throughout various government documents.²⁰ A larger data pool would have provided a far more comprehensive picture of the current status of the capability.

For example, the first Delphi survey went to 14 individuals representing local, state, and federal governments, as well as the business sector, of which only nine participants responded. This number equates with a 64 percent return. These numbers became even more restrictive during the second round of the survey. Once again, questions went to the same 14 individuals with the hope more individuals would participate. The return rate for the second round was 36 percent. Also, no federal participants responded, and only one business response was returned, albeit half completed. The small candidate pool and the associated low rate of return limited the research from making a conclusive determination that the responses were representative of the entire nation.

C. CONTRIBUTION TO RESEARCH

The study of economic recovery, specifically associated with the Federal Emergency Management Agency’s core capability, receives minimal emphasis. Although theoretical and statistical studies have discussed the overarching impact a disaster has on the economic viability of a community, little research has provided an overarching concept or framework to bring about improvements. Therefore, this research intends to examine the topic through an analytical study of subject-matter experts’ perspectives throughout all levels of government, the business sector, and academia to bring about change. This change is not monolithic but substantial enough to begin a larger conversation—so that additional research may further advance operational capabilities.

²⁰ Federal Emergency Management Agency, *National Disaster Recovery Framework*, 2nd ed. (Washington, DC: Department of Homeland Security, 2016), 14, https://www.fema.gov/media-library-data/1466014998123-4bec8550930f774269e0c5968b120ba2/National_Disaster_Recovery_Framework_2nd.pdf.

D. THESIS ROAD MAP

Chapter II provides a review of existing literature related to economic recovery. The chapter highlights the divergent perspectives of the research topic, describes the different aspects of calculating impact once a disaster hits, and summarizes existing frameworks used to analyze and interpret economic recovery. Chapter III provides background information for those not familiar with the topic. The section discusses the roles of the federal, state, and local government, along with the business sector. It also examines the influence of grant funding and the associated capabilities these funds purchase.

Chapter IV describes and analyzes the Delphi results generated by subject-matter experts responding to two rounds of questioning. Results include insight into skill sets required for success, a realization that most communities do not have established economic recovery plans, and the rank-ordering of essential services required to support economic recovery. The results highlight that not only is economic recovery a persistent challenge, but significant confusion and limited capability also exist. Chapter V analyzes the Delphi output further through a net assessment. This assessment examines the raw data—using three categories prevalent in the recovery mission area and evaluation criteria known to all practitioners—and connects them back to the existing environment to generate an overall output. This insight is summarized in a stop-light chart that describes where economic recovery limitations preclude the capability. Chapter VI summarizes the findings and offers recommendations to expand knowledge and continue the effort of building capacity to bring about improvements in economic recovery.

II. LITERATURE REVIEW

The purpose of this literature review is to examine relevant research to understand the complexity involved in the core capability of economic recovery. This review examines the assorted definitions of economic recovery, the distinct metrics used to calculate the impact of disasters on communities, and the varied frameworks used to examine economic recovery. This analysis helps frame the view that economic recovery is a complicated and confusing process that is poorly understood. The initiation of economic recovery begins when the community is at its most vulnerable point, immediately following a disaster, which further exacerbates its murkiness. Therefore, further examination is needed to determine whether a more defined process—one that incorporates the needs of the various stakeholders—can bring about improvement. This improvement depends on a multitude of variables at the local, state, and federal government and the private sector, all of which look at economic recovery from different perspectives.

A. DEFINING ECONOMIC RECOVERY

The concept of economic recovery has a long tradition in government and the business sector. Since the late 1960s, when Douglas Dacy and Howard Kunreuther published their book, *The Economics of Natural Disasters: Implications for Federal Policy*, academia and policymakers have researched and debated the topic. However, the Federal Emergency Management Agency (FEMA)'s mission area of recovery, specifically the core capability of economic recovery, continues to receive less emphasis and research than other attributes.²¹ Even when researched, economic recovery tends to focus more on broader aspects, such as the impact on industry (e.g., aviation), or the effects on a state and regional economy. Until recently, little was known about the actual impacts of disasters on smaller businesses—aspects like business vulnerabilities, operational impact, and recovery

²¹ Philip R. Berke, Jack Kartez, and Dennis Wenger, "Recovery after Disaster: Achieving Sustainable Development, Mitigation and Equity," *Disasters* 17, no. 2 (June 1993): 94, <https://doi.org/10.1111/j.1467-7717.1993.tb01137.x>.

were relatively unknown.²² Even though research efforts have expanded to these aspects, the field has a limited understanding of how the different aspects interconnect. Understanding these second- and third-order effects and the government’s and private sector’s influence on them will also help in comprehending this complex, nebulous, and difficult-to-define core capability.

To understand just how difficult and complicated the idea of economic recovery is, one need only review the multitude of definitions. From a political standpoint, FEMA defines economic recovery as the “return [of] economic and business activities . . . to a healthy state and [the development of] new business and employment opportunities that result in an economically viable community.”²³ Therefore, recovery returns the community—its businesses, government, and essential services—to a standard that supports the needs of its citizens. However, this definition also provides another end state of establishing an environment in which entrepreneurs can enter the altered market and flourish. The additional need for an environment that allows new businesses to emerge makes perfect sense from a political standpoint. Companies sell goods and services, all of which create employment and an economy that in turn generates a stable tax base. The more businesses within a specific market, the more taxes the government can collect.

The establishment of an environment in which existing and new businesses can flourish is indeed a critical component of economic recovery. However, it does not represent the perspective of Stephanie Chang and Adam Rose—academics who scrutinize various empirical studies—who believe economic recovery is the “process by which businesses and local economies return to conditions of stability following a disaster.”²⁴ From their standpoint, economic recovery is a process by which the community re-establishes the environment so that it is stable and conducive for business and allows the population to resume their normal day-to-day activities. It is calculated in time, not money,

²² Kathleen J. Tierney, “Businesses and Disasters: Vulnerability, Impacts, and Recovery,” in *Handbook of Disaster Research*, ed. Havidan Rodriguez, Enrico L. Quarantelli, and Russell R. Dynes (New York: Springer, 2007), 275–76.

²³ Federal Emergency Management Agency, *National Disaster Recovery Framework*, 25.

²⁴ Chang and Rose, “Towards a Theory of Economic Recovery from Disasters,” 172.

and is not concerned with the cumulative effect or magnitude of the disaster. For Chang and Rose, economic recovery is more concerned with the activities that take place after the disaster, the amount of time they take, and the results this process bears out.²⁵ Thus, greater emphasis and understanding of these aspects within government, along with the private and business sectors, expand the foundational knowledge of what is required to support economic stability and recovery within the community.

G. D. Sardana and Sarath W. S. B. Dasanayaka provide an alternative viewpoint in their analysis of the devastating impact of the 2004 tsunami on Sri Lanka. Although they provide no specific definition, their research focuses on four specific considerations regarding economic recovery. According to their analysis, economic recovery depends on the overall extent of the damage suffered by small businesses—compared to the effectiveness of programs managed by government and non-government organizations—and the extent to which these businesses used the strategies and programs available.²⁶ This definition views economic recovery as a process to manage the situation as opposed to the time, money, or return to pre-disaster status. Although time and financial capacity play an essential role, the process by which government and non-government organizations influence, assist, and support small businesses' efforts to rebuild is critical to success. Issues such as replacing machinery, restoring or finding other facilities, and having inventory are more critical to economic recovery than other factors. This study determined that 78 percent of small businesses received no government support to rebuild, and 84 percent received no assistance from non-government organizations.²⁷ This lack of support was not necessarily intentional but due to delays in providing support, a lack of cooperation among government organizations, and organizational practices. Overall, the process failures generated only a 64 percent return to pre-tsunami business productivity six years after the disaster.²⁸ Therefore, governments and non-governmental organizations have to

²⁵ Chang and Rose, 172.

²⁶ G. D. Sardana and W. S. B. Dasanayaka, "Economic Recovery from Natural Disaster: Spotlight on Interventions in Tsunami Affected Micro and SMEs in Sri Lanka's Galle District," *Competitiveness Review* 23, no. 4/5 (2013): 386–87, <https://doi.org/10.1108/CR-03-2013-0032>.

²⁷ Sardana and Dasanayaka, 391.

²⁸ Sardana and Dasanayaka, 393–94.

develop and emplace well-defined processes in a timely fashion for small businesses impacted by disasters to support their efforts to rebuild.

As these examples highlight, defining economic recovery is a difficult task because different perspectives exist depending on one's role and association with private, public, and non-governmental organizations. While one group views economic recovery through the lens of money, others believe aspects such as time or resources are more important. These divergent perspectives generate inconsistency. Without consistency, recovery efforts have the potential of being disjointed and may not support the economic recovery of a community.

B. DETERMINING THE COMMUNITY IMPACTS OF DISASTER

Measuring and understanding the effects of a disaster on a community represents another aspect of the broader conversation. While most individuals comprehend the immediate impact of a disaster, such as death and injury of citizens, or the physical destruction of buildings and infrastructure, aspects such as short- and long-term impacts, along with the associated direct and indirect effects, are not universal. Therefore, an examination of each of these aspects, viewed through the means of time and cost, assists in framing the importance of economic recovery.

Immediately following a disaster, communities begin the process of recovering. This process generates a short-term economic benefit to the community as businesses are hired to remove debris, assess damages, and repair and rebuild damaged infrastructure. For example, Christian R. Jaramillo examined 113 countries that experienced disasters over 36 years and determined disasters have a positive impact on nations for two to five years.²⁹ In addition, research conducted by Stephanie Chang highlighted an increase in gross regional product four years after the 1995 Kobe earthquake in Japan, albeit long-term recovery was lower than pre-earthquake levels.³⁰ These economic opportunities center around the effort

²⁹ Christian R. Jaramillo, "Do Natural Disasters Have Long-Term Effects on Growth?," Document No. 2009-24 (Bogotá: Universidad de Los Andes, 2009), 28–29, <https://papers.ssrn.com/abstract=1543453>.

³⁰ Stephanie E. Chang, "Urban Disaster Recovery: A Measurement Framework and Its Application to the 1995 Kobe Earthquake," *Disasters* 34, no. 2 (April 2010): 318, <https://doi.org/10.1111/j.1467-7717.2009.01130.x>.

to rebuild the community. For example, a city will begin to rebuild, thereby increasing employment opportunities for the local population, specifically in skilled labor such as construction. Businesses that provide material and services required for the rebuilding effort see an increase in sales, and for a period, an economic boom supports the recovery of the community.³¹ Although this research provides significant insight into potential short-term benefits of a disaster, the research is inconclusive as it does not represent the range of outcomes for every community. Aspects including economic size, literacy rates, quality of institutions, and higher-per-capita income all play a significant role in a positive short-term impact.³² These findings are supported by Nicole Laframboise and Boileau Loko, who determined that disasters and their impact on the local economy are determined by “factors like the nature of the shock, the size and structure of the economy, population concentration, per capita income, financial depth, governance, and openness.”³³ Because every community is different when it comes to these factors, the significance of these findings is that a short-term impact is not a universal standard, and each community must look at a multitude of aspects to determine how it is affected.

One such aspect that community leaders consider is whether they should spend the time and resources to rebuild. While rebuilding provides short-term stimulus to the community, approximately 85 percent of the nation’s population lives within areas that are prone to disasters, so there is a high probability that rebuilding efforts will take place in the same area again in the future.³⁴ This probability continues to rise as the United States experiences more and more disasters and weather patterns that break severity and overall damage cost records, thereby bringing the collective cost of damages the country has

³¹ Ilan Noy and William duPont IV, “The Long-Term Consequences of Natural Disasters: A Summary of the Literature,” Working Paper No. 2/2016 (Wellington, New Zealand: Victoria University of Wellington, 2016), 8, <http://researcharchive.vuw.ac.nz/handle/10063/4981>.

³² Ilan Noy, “The Macroeconomic Consequences of Disasters,” *Journal of Development Economics* 88, no. 2 (March 2009): 229, <https://doi.org/10.1016/j.jdeveco.2008.02.005>.

³³ Nicole Laframboise and Boileau Loko, *Natural Disasters: Mitigating Impact, Managing Risks* (Washington, DC: International Monetary Fund, 2012), 5, ProQuest.

³⁴ John Schwartz, “After a Natural Disaster, Is It Better to Rebuild or Retreat?,” *New York Times*, December 13, 2018, <https://www.nytimes.com/2018/12/13/us/after-a-natural-disaster-is-it-better-to-rebuild-or-retreat.html>.

experienced at more than \$1 trillion since 1980.³⁵ While it is unlikely most communities will suffer a disaster that would preclude them from rebuilding, it is feasible that areas within the community may receive assessments indicating it is not fiscally prudent to rebuild. These were the findings of David Eddington when he examined the 2011 earthquake in Christchurch, New Zealand. Following the earthquake, community leaders, with assistance from geologists, determined that over 5,000 homes located in one area were prone to experience significant damage from future earthquakes. (An additional 10,000 were being assessed, but their final disposition had not been determined before publication.) Therefore, community leaders purchased the land from the homeowners, cleared all dwellings, and declared the area a non-rebuild zone.³⁶ Whether for fiscal or safety concerns, the idea of not rebuilding is a course of action communities must consider. Otherwise, the populace faces the likelihood of expending precious resources that might provide immediate short-term fiscal recovery but impacts the long-term survivability of the community.

Although the short-term impact is calculated as a loss over months, and in some cases up to five years, the long-term impact is more deliberate and calculated over many years. As with short-term impacts, various aspects influence the long term, but the multiple years and programs specifically designed to stimulate economic development and growth allow the community greater flexibility in achieving success.³⁷ However, time and programs do not always generate the desired end state. Researchers Noy and duPont, therefore, categorize long-term impacts in one of four ways: “no long-term impact, positive impact, negative impact, or mixed impact.”³⁸ The following paragraphs explain the differences between each of these categories—except for mixed impact, as it is a

³⁵ U.S. Global Change Research Program, *Fourth National Climate Assessment: Climate Science Special Report*, vol. 1 (Washington, DC: Government Publishing Office, 2017), 12, <https://www.hsd1.org/?abstract&did=805452>.

³⁶ David W. Edgington, “Viewpoint: Reconstruction after Natural Disasters: The Opportunities and Constraints Facing Our Cities,” *Town Planning Review* 82, no. 6 (2011): x, <http://www.jstor.org/stable/41300364>.

³⁷ Atkinson and Sapat, “Hurricane Wilma and Long-Term Business Recovery in Disasters,” 175.

³⁸ Noy and duPont, “The Long-Term Consequences of Natural Disasters,” 12.

combination of one or more of the other three. Moreover, they highlight the existence of divergent perspectives within academia, all supported with quantifiable data.

No long-term impact is the ideal end state for a community that experiences a disaster. In this context, communities experience a disaster, have sustained damage, injury, and even death, but return to their pre-disaster status over time with little to no effect.³⁹ For example, Cavallo et al. examined the impacts of disasters on countries' gross domestic product. The research examined earthquakes, storms, and floods, including large and catastrophic events, all of which involved the loss of life and direct damage over 38 years in 196 countries.⁴⁰ They concluded that natural disasters, even catastrophic ones, do not have a substantial impact on the economic growth of a country. Only two catastrophic events resulted in an economic decline, which was attributed to political turmoil that followed the disaster.⁴¹ However, a counter-argument to this research provided by Deryugina, Kawano, and Levitt highlights the significant difference in impact at the local level. There, the local economy cannot absorb the economic impact or loss of human capital commensurate with that of the national economy. The overall effect is diluted at the national level yet concentrated at the local and regional levels.⁴² Given this perspective, and using the ideology that all disasters are local, it is, therefore, difficult to accept the rationale that disasters generate no long-term impacts.

Accepting the idea that disasters generate some long-term impact, the preferred situation is an overall positive effect. For example, Yasuhide Okuyama found that hazards and the ensuing recovery provided communities with the opportunity to wipe the slate clean, take corrective action for past mistakes, and bring about technological improvements

³⁹ Noy and duPont, 12.

⁴⁰ Eduardo Cavallo et al., "Catastrophic Natural Disasters and Economic Growth," *Review of Economics and Statistics* 95, no. 5 (December 2013): 1553–54, https://doi.org/10.1162/REST_a_00413.

⁴¹ Cavallo et al., 1560.

⁴² Tatyana Deryugina, Laura Kawano, and Steven Levitt, *The Economic Impact of Hurricane Katrina on Its Victims: Evidence from Individual Tax Returns*, NBER Working Paper No. 20713 (Cambridge, MA: National Bureau of Economic Research, 2014), 6, <https://doi.org/10.3386/w20713>.

in buildings and infrastructure.⁴³ This positive approach takes the perspective that disasters allow community leaders to make improvements to housing, infrastructure, and urban planning.⁴⁴ However, others argue that these positive results benefit only groups that are higher on the socio-economic ladder. Those lower on the ladder live in buildings more prone to damage, do not have the resources to rebuild, and feel a direct negative impact on available, affordable housing.⁴⁵ Even though research shows the impact on the less fortunate is an issue that requires consideration, there are opportunities for improvement. Communities that take proactive measures before a disaster can create and implement policies supporting post-disaster reconstruction for the community as a whole. For example, communities could control the location of new construction, so the infrastructure is not placed in areas prone to significant damage in the event of a future disaster.⁴⁶ The implementation of proactive steps will help ensure a community can weather the long-term impacts of a disaster, but it does not always generate positive results.

The unfortunate reality of a disaster is that it affects the community to some extent. Sometimes this impact is positive, but in other cases, the overall effect generates a negative outcome. For example, a 2017 study conducted by the National Bureau of Economic Research looked at data spanning 90 years regarding the economic impact of disasters on U.S. counties. This research found that counties hit by severe disasters, which caused 10 or more deaths, experienced a more significant out-migration of their population than counties with a different experience. The study also found that these counties suffered from lower home prices and an increase in poverty rates.⁴⁷ Efforts to mitigate these negative impacts are the genesis for this thesis as the loss of community, and the economic depression it generates, has a lasting effect.

⁴³ Yasuhide Okuyama, “Economics of Natural Disasters: A Critical Review,” Research Paper 2003-12 (Morgantown: West Virginia University, 2003), 16–17, https://www.researchgate.net/publication/228817770_Economics_of_natural_disasters_A_critical_review.

⁴⁴ Berke, Kartez, and Wenger, “Recovery after Disaster,” 93.

⁴⁵ Edgington, “Viewpoint,” vii.

⁴⁶ Edgington, viii.

⁴⁷ Leah Platt Boustan et al., “The Effect of Natural Disasters on Economic Activity in US Counties: A Century of Data,” NBER Working Paper No. 23410 (Cambridge, MA: National Bureau of Economic Research, 2017), <https://doi.org/10.3386/w23410>.

Although short- and long-term impacts are critical attributes and the destruction of homes and infrastructure are quite visible, they represent only part of the broad context of impact. The other part of the impact equation is the direct and indirect loss. Economists Stéphane Hallegatte and Valentin Przyluski define direct losses as things one can point to and calculate an immediate forfeit of capital, such as goods, services, and assets, whereas indirect losses are incurred not by the disaster itself but by the after-effects of the disaster.⁴⁸ For example, if a business decides not to rebuild and lays off its workforce, the effects of the layoff on the community and individuals within it are an indirect cost of the disaster. Indirect costs not only affect the local community but also ripple across society and the private/public sectors, producing second- and third-order effects. If this business supplied a specific product used by others within the industry, its departure from the sector affects others. This ripple effect and its associated impact on a community represent the higher-order loss.⁴⁹ Although direct, indirect, and higher-order losses are essential to this discussion, the lack of a standardized methodology to calculate these losses is even more pertinent.⁵⁰ This disparity causes academia, businesses, and governments to derive different conclusions about the overall impact of disasters, thereby obstructing these domains from developing solutions or concepts that bring about relief.

The development of solutions and concepts to bring about relief are extremely important, but so is the realization that impacts are different for each community. Therefore, each community must look at economic recovery from its vantage point and realize no universal solution exists that will solve every one of its problems. However, having a foundational knowledge of short-term versus long-term impacts, along with direct and indirect impacts, provides the understanding to support the development of economic recovery plans. Although existing data can help the practitioner understand the different kinds of impact, the topic of economic recovery remains murky. Therefore, only time and

⁴⁸ Stéphane Hallegatte and Valentin Przyluski, “The Economics of Natural Disasters: Concepts and Methods,” Public Research Working Paper No. 5507 (Washington, DC: World Bank Group, 2010), 15, <http://hdl.handle.net/10986/3991>.

⁴⁹ Noy and duPont, “The Long-Term Consequences of Natural Disasters,” 3.

⁵⁰ Chang, “Urban Disaster Recovery,” 306.

additional research will further expand our knowledge, thereby creating refined processes to determine root problems and the associated solutions to resolve them.

C. FRAMEWORKS TO EXAMINE ECONOMIC RECOVERY

Although research related to economic recovery is still in its infancy, various frameworks help to explain the topic. Early studies by Richard Haas et al. viewed recovery through the lens of the value-added approach.⁵¹ From their perspective, the value depends on the various inputs provided to the community and the benefits each generates compared to the overall cost of recovery. For example, efforts to restore utilities such as electricity and water have a greater impact—even if the price to repair them is substantial—than other services such as communications and debris removal. However, this simple explanation does not consider all the variables that come into play in the overall recovery. Tangible variables, such as skilled labor and access to supplies and material, are critical to a successful outcome, but so are intangible aspects such as the will to rebuild and carry on after storms destroy homes and livelihoods. Trained personnel who understand the complexity of the recovery environment are also paramount yet scarce or too few to fill the need. These attributes not only have a direct impact on the economic recovery of the community but affect the broader economy itself. Critics of the value-added approach, including Berke, Kartez, and Wenger as well as Rubin et al., point to pricing, resource scarcity, and the intent of local leaders as reasons why the value-added approach is flawed.⁵² These aspects, along with a multitude of others, make it impractical and at times impossible to account for all the variables that influence recovery operations. This framework, however, is one of many to consider.

A second framework regarding recovery and the sub-topic of economic recovery is reconstruction. This framework focuses on aspects previously discussed, including opportunities to rebuild infrastructures such as transportation and communications systems, but also focuses on characteristics like rubble removal, housing, and the re-establishment of retail business and the associated distribution systems that support them

⁵¹ Berke, Kartez, and Wenger, “Recovery after Disaster,” 95.

⁵² Berke, Kartez, and Wenger, 96–97.

to sustain the recovery process.⁵³ Again, one of the most substantial variables is the difference of opinion over setting priorities. David Edgington argues this process includes efforts by city planners to incorporate mitigating features to lessen future disaster impacts, but elected officials hamper the outcome. Elected officials typically want to provide the fewest resources to generate a desirable result and demonstrate an immediate return on investment to the public.⁵⁴ Regardless of the outcome, the reconstruction process takes years to complete, and limited resources—including political will—hamper it.

Although reconstruction may have its limitations, a hybrid framework may be more appropriate. For example, Lex Drennan, Jim McGowan, and Anne Tiernan emphasized the need to adopt an adaptive resiliency framework.⁵⁵ This framework looks at the community's ability to adapt during reconstruction by comparing the community's values, goals, and aspirations against the pressures it will face during the recovery process. As Drennan and his colleagues highlighted in their research, the time to determine what is best for the community is not during the recovery phase but before an event.⁵⁶ Their research emphasizes the current belief that policy is short-sighted, only supports typical response and recovery efforts, and does not account for the needs of the community. Instead of the conventional wisdom of supporting the prevention and mitigation phases, Drennan, McGowan, and Tiernan recommend a more preemptive perspective. This perspective allows local leaders and, more importantly, individuals and the community to design a process that allows for a shared decision-making effort to take place before an event. This effort involves government agencies, non-governmental organizations, and the private sector, but the community also has a seat at the table. This process accounts for the community's values, local viewpoints, and needs, all while leveraging pre-disaster grant

⁵³ G. G. Mader and M. B. Tyler, *Rebuilding after Earthquakes: Lessons from Planners* (Portola Valley, CA: William Spangle and Associates, 1990), 75, <https://nehrpsearch.nist.gov/article/PB93-120178/XAB>.

⁵⁴ Edgington, "Viewpoint," viii.

⁵⁵ Lex Drennan, Jim McGowan, and Anne Tiernan, "Integrating Recovery within a Resilience Framework: Empirical Insights and Policy Implications from Regional Australia," *Politics and Governance* 4, no. 4 (December 2016): 75, <https://doi.org/10.17645/pag.v4i4.741>.

⁵⁶ Drennan, McGowan, and Tiernan, 83.

funding to entice investments and planning.⁵⁷ The community's voice takes precedence in establishing reconstruction and recovery efforts.

Although the adaptive resiliency framework highlights the idea that the community's perspective is extremely valuable, it is just one of many frameworks. Ian Noy and William duPont highlight the various frameworks used by economists in their 2016 paper. This comparison examines the overall impacts a disaster has compared to pre-disaster standards. For example, this methodology emphasizes the input-output progression but generates irrelevant results if inputs are limited or non-existent. The computable general equilibrium methodology also looks at inputs and outputs but places a greater focus on input pricing and quantities.⁵⁸ The authors also highlight the Solow model, the belief that a country's growth moves along a typical path over time. An event like a natural disaster reverses or depresses growth but quickly is overcome by the emphasis on recovery. Eventually, the country's growth returns to a typical pattern over time as if nothing had happened.⁵⁹ However, researchers such as Robert Barro challenge this simplistic view because it does not account for all the variables required to return the economy to a new normal. Things like human capital, private investment, political instability, and price distortion are all critical aspects that need consideration.⁶⁰ Unless incorporated into the overall framework, the assessment could, therefore, rely on dumb luck or the natural order of things.

The reliance on the natural order of things is not an ideal solution when it comes to generating solutions. However, the assessment of the various frameworks used to examine economic recovery is not comforting. This assessment highlights the fact that no single framework provides a complete and definitive picture. Although each framework offers a unique perspective, that perspective has limitations. Therefore, further research and investigation are required to determine how the emergency management community can

⁵⁷ Drennan, McGowan, and Tiernan, 83.

⁵⁸ Noy and duPont, "The Long-Term Consequences of Natural Disasters," 9.

⁵⁹ Noy and duPont, 10.

⁶⁰ Robert J. Barro, "Economic Growth in a Cross Section of Countries," *Quarterly Journal of Economics* 106, no. 2 (May 1991): 437, <https://doi.org/10.2307/2937943>.

generate positive results through either a modification of existing frameworks or the development of something completely new.

D. SUMMARY

The review of relevant research regarding economic recovery highlights its complexity, ambiguity, and nebulosity. Many different perspectives abound with contrasting definitions and divergent roles and responsibilities within the private, public, and non-governmental domains. Because each disaster differs, and the communities impacted have distinct attributes, the ability to create a universal framework is limited, thereby eliminating opportunities for the unity of effort. This lack of unity means that best practices for one community may not generate the same positive results for another. Although the debate continues to expand the understanding of issues like the role of government, non-governmental organizations, and private property owners, with a particular emphasis on business, further refinement and research are required. Unfortunately for those looking for a definitive explanation, the available literature emphasizes that no one person, group of individuals, or organization has conclusively defined or explained all of the nuances that surround economic recovery.

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III. UNDERSTANDING UNITY OF EFFORT

This chapter provides a further examination of economic recovery from three different perspectives because it is a complicated and nebulous topic. This examination underscores its relevance while highlighting key stakeholders and their roles in the whole process. These stakeholders—composed of FEMA, state and local government, and the business sector—make up the triad responsible for the development and execution of economic recovery. This collective group plays an intriguing part and encompasses the *National Preparedness Goal* concept of “whole community.”⁶¹ For example, when a community is overwhelmed, it seeks assistance via mutual aid agreements from others or requests help from the state. In turn, if the state is overwhelmed, it too can seek assistance from the federal government.⁶² The concept of community, also referred to as whole community, is foundational to a unity of effort required from all stakeholders. In reality, however, the federal government carries a significant share of the burden. This reliance allows local communities to take a wait-and-see approach instead of implementing proactive measures. Understanding this reliance, along with the established goals, framework, and the aptitudes used throughout the emergency management community to facilitate this core capability, assists in developing a foundational awareness and provides insight into the improvements that could bring about change.

A. ECONOMIC RECOVERY

As previously noted in Chapter II, FEMA defines economic recovery as the “return of economic and business activities to a healthy state and . . . [the development of] new business and employment opportunities that result in an economically viable community.”⁶³ Therefore, economic recovery returns the community, its businesses,

⁶¹ Federal Emergency Management Agency, *National Preparedness Goal*, 2nd ed. (Washington, DC: Department of Homeland Security, 2015), 1, https://www.fema.gov/media-library-data/1443799615171-2aae90be55041740f97e8532fc680d40/National_Preparedness_Goal_2nd_Edition.pdf.

⁶² David McLoughlin, “A Framework for Integrated Emergency Management,” *Public Administration Review* 45 (January 1985): 165–72, <https://doi.org/10.2307/3135011>.

⁶³ Federal Emergency Management Agency, *National Disaster Recovery Framework*, 25.

government, and essential services to standards that allow the community to support the needs of its citizens. Although businesses and local economies generally recover, academic research shows that small, locally oriented, and financially marginal businesses have greater difficulty recovering than others.⁶⁴ Aspects like physical damage to businesses and access to electricity and water, along with access to customers who require goods or services of the companies, are critical to the overall recovery process. Therefore, understanding how these aspects support or weaken a business and its ability to operate, as well as understanding the relationship of governance in the overall process, is vital to this examination.

The case for making improvements to economic recovery stems from the surmountable threat that disasters pose to the economic livelihood of communities. Research conducted in the United Kingdom supports this. Research by Jun Li et al. analyzed magnitude, duration, and impact associated with economic recovery following a fabricated disaster in London and determined labor, financial capital, and economic demand represented the primary factors needed to support economic recovery. The study drilled down and determined that secondary capabilities, such as transportation and health care, explicitly facilitated the recovery of labor.⁶⁵ This information is insightful and provides community leaders and emergency management professionals with a possible priority list following a disaster. Even though the study specifically focused on modeling the impacts of a flood on London, the same methodology has the potential to allow practitioners a way to determine the associated effects of a disaster on any community.

The concept of disaster economic recovery modeling is an essential aspect of the research conducted by Jun Li et al. as it provides insight toward potential successes. For example, it validates the idea that communities must take a proactive approach to determine their associated hazards and impacts on the community's ability to retain an adequate economic recovery capacity. This approach in identifying potential hazards and their associated impact parallels FEMA's Threat and Hazard Identification and Risk Assessment

⁶⁴ Chang and Rose, "Towards a Theory of Economic Recovery from Disasters," 173.

⁶⁵ Jun Li et al., "Modeling Imbalanced Economic Recovery following a Natural Disaster Using Input-Output Analysis," *Risk Analysis* 33, no. 10 (October 2013): 1920, <https://doi.org/10.1111/risa.12040>.

and Stakeholder Preparedness Review processes.⁶⁶ The result of either process is the development of policies, procedures, and contingency plans that position the community to recover quickly, more effectively, and at a lower cost over the long run. Unfortunately, existing data provided by the National Preparedness Reports denote this process is more easily outlined than achieved. Over 12 months spanning 2015–2016, a total of 20 national-level exercises emphasized economic recovery. These exercises allow managers to test assumptions, identify gaps and limitations, and help make improvements to the overall economic recovery plan. However, this number represents 10 percent of the entire exercise program.⁶⁷ This information suggests that the existing U.S. environment does not support or create opportunities for the development of long-term and effective economic recovery policies, procedures, or plans.

One could assume that limited action stems from a wait-and-see mentality. As disasters are unpredictable, local leaders may not feel the need to prioritize economic recovery because it requires valuable time and effort for something that might not be needed. Political officials realize it is hard to convince a community to invest in economic recovery and focus limited resources on other public projects. In doing so, they assume risk in believing the federal government will provide recovery assistance after a disaster.⁶⁸ Without an immediate threat, political leaders have a hard time convincing the public to spend resources on projects or plans that do not provide an immediate return on investment.⁶⁹ Efforts to prepare for economic recovery are intangible and elusive while the results of a Category 5 hurricane are striking and evident in someone’s front yard. A wait-and-see approach might explain why the number of emergency declarations at the federal level continues to rise. If local leaders and emergency managers can make the case that

⁶⁶ Federal Emergency Management Agency, *Threat and Hazard Identification and Risk Assessment (THIRA) and Stakeholder Preparedness Review (SPR) Guide*, 3rd ed. (Washington, DC: Department of Homeland Security, 2018), 8, https://www.fema.gov/media-library-data/1527613746699-fa31d9ade55988da1293192f1b18f4e3/CPG201Final20180525_508c.pdf.

⁶⁷ Federal Emergency Management Agency, *2017 National Preparedness Report*, 14.

⁶⁸ Amy K. Donahue, Catherine C. Eckel, and Rick K. Wilson, “Ready or Not? How Citizens and Public Officials Perceive Risk and Preparedness,” *American Review of Public Administration* 44, no. 4 suppl. (July 2014): 93S, <https://doi.org/10.1177/0275074013506517>.

⁶⁹ Donahue, Eckel, and Wilson, 106S.

their disaster should qualify for a federal declaration, then federal funding and support are forthcoming, thereby significantly reducing the local share of fiscal responsibility.

The increase in major declarations and the associated financial burden placed on the federal government prompted Congress to have the Congressional Research Service investigate the issue. The resulting report established that the number of disaster declarations has significantly jumped from an average of 19 per year in 1960–1969 to 56 per year in 2000–2009.⁷⁰ This increase translates into a heavy reliance on the federal government to fund recovery. For example, in October 2017, the states of Florida and Georgia, along with the U.S. territories, the Virgin Islands and Puerto Rico, received \$550 million in disaster-related funds following Hurricane Irma.⁷¹ Louisiana also received an additional \$338 million in fiscal year 2018 for disaster-related projects associated with Hurricane Katrina, a hurricane that hit the state in 2005.⁷² Although these funds go a long way in augmenting local and state budgets, the reliance on the federal government to assume the financial responsibility for recovery is unsustainable as disasters are becoming more prevalent and their effects more devastating.

The increased reliance on the federal government is causing FEMA to reassess how it does business. FEMA recognizes that deficiencies in pre-disaster planning to mitigate fiscal preparedness and public awareness are extending response and recovery times, which costs money. Former FEMA administrator, Brock Long, cautioned the emergency management community in 2017 when he acknowledged the agency’s ability to support local and state governments does not expand with the number of disasters the United States experiences.⁷³ To understand the severity and fiscal implications of this reliance, a comparison of Canada and the United States is in order. Public Safety Canada, the

⁷⁰ Bruce R. Lindsay and Francis X. McCarthy, *Stafford Act Declarations 1953–2014: Trends, Analyses, and Implications for Congress*, CRS Report No. R42702 (Washington, DC: Congressional Research Service, 2015), 1, <https://fas.org/sgp/crs/homesecc/R42702.pdf>.

⁷¹ Federal Emergency Management Agency, *Disaster Relief Fund: Monthly Report as of January 31, 2018* (Washington, DC: Department of Homeland Security, 2018), 10, <https://www.hsdl.org/?abstract&did=809683>.

⁷² Federal Emergency Management Agency, 7.

⁷³ Miller, “US Shatters Record for Disaster Costs in 2017.”

Canadian equivalent to FEMA, has paid out \$4.1 billion in post-disaster funding since 1970.⁷⁴ The United States, on the other hand, is programmed to distribute \$7.9 billion in post-disaster funding to FEMA to support local and state governments in fiscal year 2019 alone.⁷⁵ In one year, the United States will spend almost double what Canada spent in 45 years. In fairness, the United States has significantly more infrastructure and 11 times the population of Canada, but beginning the process of making improvements in its ability to support economic recovery efforts remains fiscally prudent for the United States.

B. THE ROLE OF FEMA

To understand the federal perspective on how the nation prepares for, responds to, and recovers from natural disasters, one must appreciate the role FEMA plays. FEMA is the lead federal agency responsible for coordination and collaboration with and support to local, state, tribal, and non-government organizations before, during, and after a disaster.⁷⁶ It does this through the establishment of policy, programs, and systems that are disseminated down to the local level.⁷⁷ This responsibility is enormous, considering the cultural, geographic, and socio-economic differences that exist throughout the country.

To overcome these differences, FEMA established a set of goals and a preparedness system with the underlying intent of creating unity of effort throughout the emergency management community. The *National Preparedness Goal* is the base document for the emergency community across all levels of government and establishes a goal of creating a “secure and resilient nation with the capabilities required across the whole community to prevent, protect against, mitigate, respond to, and recover from the threats and hazards that pose the greatest risk.”⁷⁸ An extrapolation of the goal highlights five critical areas of

⁷⁴ “Disaster Financial Assistance Arrangements (DFAA),” Public Safety Canada, December 16, 2015, <https://www.publicsafety.gc.ca/cnt/mrgnc-mngmnt/rcvr-dsstrs/dsstr-fnncl-ssstnc-rrngmnts/index-en.aspx>.

⁷⁵ Federal Emergency Management Agency, *Disaster Relief Fund: Monthly Report as of January 31, 2019* (Washington, DC: Department of Homeland Security, 2019), 4, <https://www.fema.gov/media-library-data/1550164984614-f0ce72923db4c378f76593b4d403f8aa/February2019DisasterReliefFundReport.pdf>.

⁷⁶ “Disasters Overview,” Department of Homeland Security, July 19, 2012, <https://www.dhs.gov/disasters-overview>.

⁷⁷ McLoughlin, “A Framework for Integrated Emergency Management,” 165.

⁷⁸ Federal Emergency Management Agency, *National Preparedness Goal*, 1.

emphasis, also referred to as mission areas: prevention, protection, mitigation, response, and recovery. Each of the mission areas, in turn, has core capabilities, or essential functions that are critical to mission success—there are a total of 32.⁷⁹ Through a collaborative approach that ensures unity of effort throughout the emergency management community, FEMA publishes and consistently updates a document specific to each mission area. For example, the *National Disaster Recovery Framework* provides guidance and information specifically on the recovery aspect of disasters.⁸⁰ These documents create a shared understanding of procedures, language, and benchmarks to support not only day-to-day pre-disaster operations but also responses to hazards.

Although these documents and the framework provide the baseline for the unity of effort, they do not lessen the complexity disasters pose throughout the nation. Therefore, considering the risks and hazards a community faces, along with the capacity to mitigate them, requires the ability to assess the effectiveness of the established core capabilities consistently. The *National Preparedness System* aims to accomplish this task and builds on the foundational elements established in the *National Preparedness Goal*. Its six components ensure the emergency management community has the capacity to (1) identify and assess risks, (2) estimate capability requirements, (3) build and sustain capabilities, (4) deliver these capabilities, (5) validate the need for the capacity, and (6) establish an assessment process to review and update the 32 core capabilities within the national framework.⁸¹ FEMA’s role in producing these documents highlights its whole-of-government perspective for the United States and, therefore, acts as the center of gravity for emergency management.

The whole-of-government perspective and, more importantly, FEMA’s role are critical for many reasons. Local and state governments receive federal funds through designated grants specifically designed to achieve core capabilities, which give the federal

⁷⁹ Federal Emergency Management Agency, 3.

⁸⁰ Federal Emergency Management Agency, *National Disaster Recovery Framework*, 4–5.

⁸¹ Federal Emergency Management Agency, *National Preparedness System* (Washington, DC: Department of Homeland Security, 2011), 1–2, https://www.fema.gov/media-library-data/20130726-1855-25045-8110/national_preparedness_system_final.pdf.

government a channel of influence. The emphasis on core capabilities and the *National Preparedness System* requires emergency managers to assess their environment, determine their risk to hazards, and then seek assistance from the federal government through grants. For example, the Washington State Emergency Management Division (EMD) has an operating budget of \$10.8 million, of which the state provides only \$4.2 million—the balance (61 percent) comes from the federal government. Also, the state’s disaster response account for fiscal years 2015–2017 emphasizes \$56 million in federal support with the state providing \$14.8 million, of which none supports EMD’s operating budget.⁸² A similar situation exists in Arlington County, Virginia. In fiscal year 2020, Arlington County will receive \$1.1 million in grant funding, or 40 percent of its emergency management budget, predominantly from federal grants.⁸³ Of these funds, the federal Urban Areas Security Initiative grant supplies \$572,813; the federal Complex Coordinated Terrorist Attack grant, \$480,000; and the State of Virginia, \$72,500.⁸⁴ These examples highlight how FEMA significantly influences state and local governments because large portions of their budgets come from the federal government.

The funding provided by the federal government through grants lessens the impact disasters have before they happen. These programs include the Hazard Mitigation Grant Program, Pre-Disaster Mitigation (PDM) Program, and Flood Mitigation Assistance Program, which encompass the *Hazard Mitigation Assistance Guidance*.⁸⁵ For example, PDM distributed \$90 million in non-disaster related funds to communities in fiscal year 2017.⁸⁶ All combined, FEMA provided \$2.3 billion in grant funding in 2017 to local and

⁸² Robert Ezelle, “Washington Military Department 2017 Update” (presentation at the Office of Financial Management, Olympia, WA, November 21, 2017).

⁸³ Mark Schwartz, *County Manager’s Proposed F.Y. 2020 Budget* (Arlington, VA: Arlington County, 2019), 381, <https://arlingtonva.s3.amazonaws.com/wp-content/uploads/sites/18/2019/02/1-FY20-All-in-One-for-Web-v4.pdf>.

⁸⁴ Jeffrey E. Bergin, email message to the author, April 18, 2019.

⁸⁵ Federal Emergency Management Agency, *Hazard Mitigation Assistance Guidance: Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Mitigation Assistance Program* (Washington, DC: Department of Homeland Security, 2015), 4–5, https://www.fema.gov/media-library-data/1424983165449-38f5dfc69c0bd4ea8a161e8bb7b79553/HMA_Guidance_022715_508.pdf.

⁸⁶ Federal Emergency Management Agency, “FY 2017 Pre-Disaster Mitigation (PDM) Grant Program” (fact sheet, Department of Homeland Security, July 2017), 1, <https://www.fema.gov/media-library/assets/documents/132824>.

state governments.⁸⁷ The funding, controlled and managed by FEMA, means the organization has a substantial influence on the state, local, and tribal organizations and the professional and elected individuals who work within them.

Although FEMA's framework and financial capability are essential to local organizations, its importance extends beyond these attributes. For example, the *National Preparedness Report*, the annual assessment of the nation's ability to execute core capabilities and achieve mission success within the five mission areas, pulls information from various stakeholders, data sources, and non-government organizations to determine successes and areas for improvements.⁸⁸ FEMA uses this document like a "report card" to assist the emergency management community, especially the federal government, in determining where to place additional emphasis in future years. Regrettably, the information gleaned from this report does not always translate into increased capacity or improvement. For example, every year since 2012, except for 2014, the *National Preparedness Report* mentions a need for significant improvements in the core capability of economic recovery.⁸⁹ Unfortunately, this designation has not affected the delivery of such improvements. Even though the reports continue to suggest improvements to the economic recovery capability, the 2018 report once again indicates it is in the bottom five of all core capabilities, receiving just over \$1 million in grant funding. Conversely, planning, which has consistently received a ranking of high proficiency, received over \$350 million in grant funding.⁹⁰ The data, therefore, support the notion that FEMA may champion the need for improvement, but unless it takes direct action to bring out the change, little will happen. See Figure 1 for the 2018 assessment of core capabilities.⁹¹ The efforts over the past five years to make improvements in planning has built a core capability that continues to receive high marks. The data also support the notion that FEMA can guide

⁸⁷ Federal Emergency Management Agency, *2018 National Preparedness Report*, 9.

⁸⁸ Federal Emergency Management Agency, 1.

⁸⁹ Federal Emergency Management Agency, 21.

⁹⁰ Federal Emergency Management Agency, 11.

⁹¹ Federal Emergency Management Agency, 11.

local and state jurisdictions toward these improvements by issuing federal pre-disaster grants to improve shortfalls that are identified and require attention.

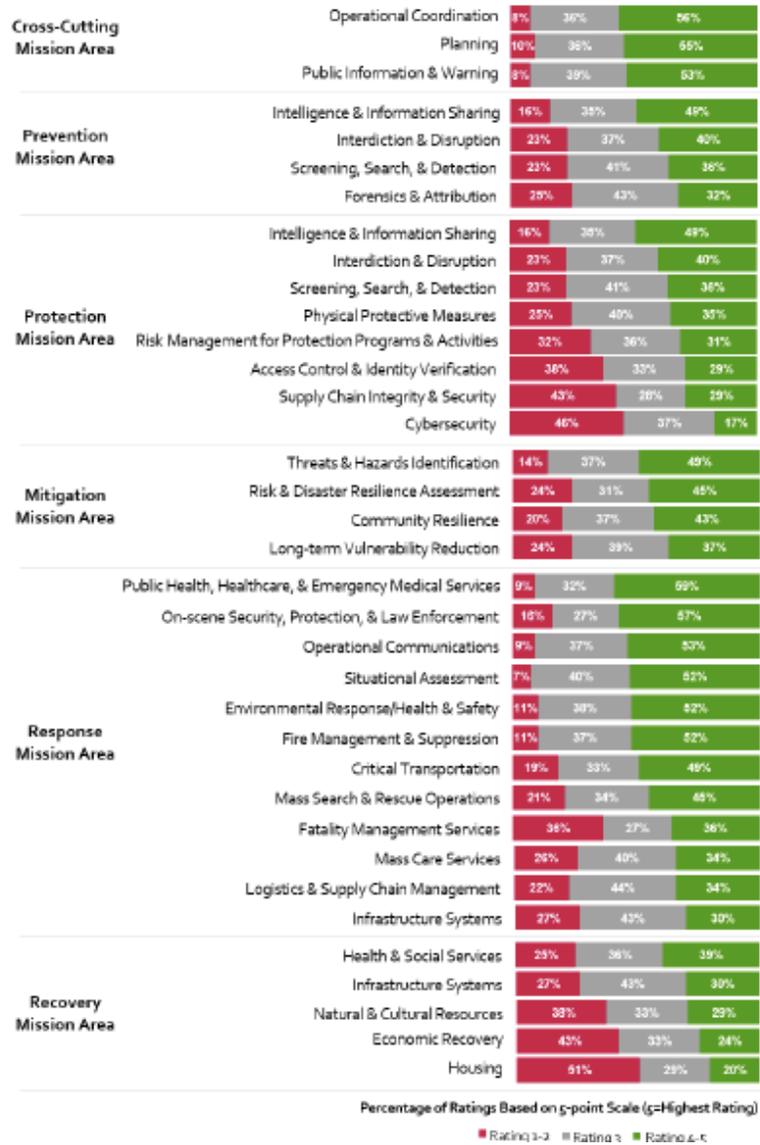


Figure 1. 2018 Core Capabilities Assessment

Noting FEMA’s importance provides insight into how local, state, and tribal governmental organizations, along with private and non-governmental organizations, conduct emergency management operations, how they receive the vast majority of their funding, and how these funds have a direct impact by bringing about improvements to core

capabilities. One may conclude that FEMA has a significant influence on the actions and priorities of states and localities, and this influence is critical in determining and developing the capability to bring about improvements in economic recovery. Although FEMA plays a significant role, it is only one part of the emergency management triad—the federal government, state/local authorities, and the business sector—that can bring about real change. Unless these components work together and toward a unified end state, the ability to improve economic recovery remains limited. A further examination of the roles states, localities, and the business sector assume, and the capability each can provide, will assist in understanding how these improvements are brought about.

C. THE ROLE OF STATES AND LOCALITIES

The second component of the economic recovery triad is the capability that resides at the state and local levels of government. This level includes the lead state agency responsible for the management of policy, programs, and response to a disaster and those local capabilities found within counties and municipalities such as first responders, local emergency managers, and volunteer organizations. Every state in the Union has a department, office, or division responsible for these actions. For example, the Colorado Division of Homeland Security and Emergency Management (DHSEM) is the lead state agency in Colorado and has the mission “to lead and support Colorado’s efforts to prevent, protect, mitigate, respond to and recover from all-hazards events.”⁹² The DHSEM has four offices, one of which is the Office of Emergency Management, charged with “integrating emergency management efforts across all levels of government, including state, local, tribal and federal . . . in support of local jurisdictions.”⁹³ This support helps counties like Mesa County, located in western Colorado with a population of 150,000, whose emergency management responsibilities fall under the Sheriff’s Office.⁹⁴ However, the Mesa County

⁹² “Colorado Division of Homeland Security and Emergency Management,” State of Colorado, accessed March 24, 2019, <https://www.colorado.gov/dhsem>.

⁹³ Colorado Division of Homeland Security and Emergency Management, “Organizational Description” (Colorado Department of Public Safety, August 2018), <https://drive.google.com/file/d/15SyTWwKPfu-zcBq4TwX7k06pR1ExEsK5/view>.

⁹⁴ “Home Page,” Mesa County, Colorado, accessed August 15, 2019, <https://www.mesacounty.us/>.

Emergency Service Division does more than oversee emergency management. The division is also responsible for emergency medical services, wildland fire operations and response, search and rescue, and land mobile radio programming and support—all executed with limited staff.⁹⁵ This example demonstrates that the local level is the point of need during a disaster, which means it has the primary responsibility of planning, responding, and supporting recovery operations; emergency management is just one of its many responsibilities. It also accents the local level’s limitations in providing resources like additional personnel, funding, and capabilities before, during, and after a disaster. Therefore, a top-down approach, meaning that funds are pushed down to the point of need, assists communities in responding to and recovering from disasters. This process, along with the role and responsibility that the state’s lead agency for emergency management assumes, is critical because it is standard across the United States. Any proposed improvements in economic recovery must follow an institutional process to have a direct impact at the local level.

The state has a vital role with regards to emergency management and a direct impact at the local level due to its capability to synchronize and provide resources at the point of need. A whole-of-government approach—meaning all resources and capacity at the disposal of the governor are made available to the local level—accomplishes this effort. These resources are available before, during, and after a disaster but only if the county asks for assistance. For example, the EMD under the Washington Military Department, the state’s lead agency for synchronizing the state’s emergency management efforts, “receive[s] and process[es] requests from local jurisdictions for specific state and federal emergency and disaster-related resources and services.”⁹⁶ In simple terms, the EMD helps coordinate resources and capabilities with the state once the county acknowledges being overwhelmed and needing assistance. By leveraging capacity within various emergency support functions (ESFs)—a conglomeration of abilities consolidated under an

⁹⁵ “Emergency Services,” Mesa County Sheriff’s Office, accessed March 24, 2019, <https://sheriff.mesacounty.us/divisions/emergency-services/>.

⁹⁶ Jay Inslee, *Washington State Comprehensive Emergency Management Plan* (Olympia, WA: Washington Military Department, 2019), 54, <https://mil.wa.gov/plans>.

encompassing heading such as transportation (ESF #1) or long-term community recovery assistance to states, local governments, and the private sector (ESF #14)—the state can provide additional support if required.⁹⁷ The state’s emergency operations center routes these requests, thereby ensuring localities are not inundated with a multitude of agencies or organizations seeking information as they focus on the disaster. If a capability is not available in the state, the state can seek assistance from another state using the Emergency Management Assistance Compact, which is a national interstate mutual aid agreement, thereby leveraging the capabilities of all 54 states and territories to support the locality.⁹⁸ Although these resources are vital to the response or recovery, they are expensive and can quickly overcome the localities’ ability to afford the support received. The state, therefore, lessens this fiscal burden by assuming another critical role: securing federal disaster declarations and the associated funding that comes with them.

Because disasters are expensive, the federal government provides a multitude of programs and grants designed to defray the cost associated with disaster response and recovery. Although these funds are available to state, territorial, tribal, and local governments, as well as nonprofit organizations, certain aspects must take place before the awarding of funds. For example, post-disaster funding such as FEMA’s public assistance program is only available once the locality and state have completed a preliminary damage assessment, the governor has requested a presidential declaration, and the president declares the event an emergency and major disaster.⁹⁹ If a presidential declaration is secured, the federal government pays 75 percent, and the state, territory, tribe, local government, or nonprofit organization assumes 25 percent of the costs to repair or rebuild the facility or public works damaged in the disaster.¹⁰⁰ However, these funds are not directly available to the localities. The federal government provides only public assistance

⁹⁷ Inslee, 18–20.

⁹⁸ “What Is EMAC?,” Emergency Management Assistance Compact, accessed March 24, 2019, <https://www.emacweb.org/index.php/learn-about-emac/what-is-emac>.

⁹⁹ Federal Emergency Management Agency, *Public Assistance Program and Policy Guide*, FP 104-009-2 (Washington, DC: Department of Homeland Security, 2018), 1, https://www.fema.gov/media-library-data/1525468328389-4a038bbef9081cd7dfe7538e7751aa9c/PAPPG_3.1_508_FINAL_5-4-2018.pdf.

¹⁰⁰ Federal Emergency Management Agency, 3–4.

funding, along with all other federally provided grants and programs, to a state administrative agency—an intermediary between the federal government and the receiving organization.¹⁰¹ This process keeps the total number of organizations FEMA must coordinate with to 54 and allows them the opportunity to monitor the use of funds more closely. It also ensures and maintains state involvement when events take place within its borders.

The role of localities and state government is critical when it comes to supporting and recovering from a disaster. The local level is the first line of defense, provides responders, and lives with the results of the disaster months or years afterward. This reality, not to mention the associated importance of the locality, is one reason practitioners continue to express that all disasters are local.¹⁰² To assist localities in their efforts, the state government also plays a critical role. It provides resources and capabilities that are unavailable or have become overwhelmed and assumes the role of seeking available economic assistance from the federal government. Both levels of government must work together toward the common goal of lessening the overall impact of a disaster that might cause significant and irreparable harm to a community.

D. THE ROLE OF THE PRIVATE SECTOR

The final component of the economic recovery capability triad is the private sector. This sector includes private for-profit organizations, which range from large companies like Amazon and Walmart to smaller establishments that are family owned and locally operated. Within the United States, these smaller establishments comprise 99.8 percent of all businesses and employ nearly half the U.S. workforce.¹⁰³ The private sector also includes private nonprofit organizations such as charitable and philanthropic groups that

¹⁰¹ Race A. Hodges, “A Primer on Federal and State Disaster Funds and Funding,” in *The Private Sector’s Role in Disasters: Leveraging the Private Sector in Emergency Management*, ed. Alessandra Jerolleman and John J. Kiefer (Boca Raton, FL: CRC Press, 2015), 58, <https://doi.org/10.1201/b19315>.

¹⁰² Elaine Pittman, “Remember: All Disasters Are Local, Says FEMA Deputy Administrator,” *Government Technology*, November 14, 2011, <https://www.govtech.com/em/disaster/Remember-All-Disasters-Are-Local-Says-FEMA-Deputy-Administrator.html>.

¹⁰³ S., *Disaster Recovery*.

can raise money used to support disaster response and recovery operations.¹⁰⁴ One could, therefore, assume the private sector holds significant influence in economic recovery and has a direct impact on a community following a disaster. This assumption, however, is somewhat flawed and not necessarily the case for a variety of reasons. Therefore, it is essential to explore the role the private sector plays during recovery efforts, with an emphasis on economic recovery. This examination includes a review of the fiscal stimulus the private sector provides to communities following a disaster, the federal policies and programs designed to assist private-sector recovery specifically, and the convergence of these components to create unity of effort, thereby supporting the economic recovery of a community.

One of the roles the private sector assumes during a disaster is in responding to the disaster and supporting long-term recovery by collecting funds and distributing them directly to individuals, families, or nonprofit organizations, thereby augmenting public programs. For example, during recovery operations following Hurricane Sandy, the federal government provided over \$60 billion in funding to support response and recovery operations. In addition to these funds, the private sector distributed \$141 million in corporate donations, and the private nonprofit sector raised and distributed \$500 million to affected households and individuals.¹⁰⁵ Estimates highlight that the private sector alone provided two-thirds of all donations to nonprofit organizations like the Red Cross, Feeding America, and the Salvation Army. These funds helped support “grant-making, nonfood relief supplies, food, volunteer coordination, . . . capacity-building, and cleanup.”¹⁰⁶ This funding goes a long way in supporting recovery operations that directly affect the community and its residents. However, these funds are not targeted specifically to support the private sector and the businesses within the community. The private sector, therefore, relies on public-private partnerships (PPPs) and governmental policies to create opportunities for local businesses to recover from a disaster.

¹⁰⁴ Anita Chandra, Shaela Moen, and Clarissa Sellers, *What Role Does the Private Sector Have in Supporting Disaster Recovery, and What Challenges Does It Face in Doing So?* (Santa Monica, CA: RAND Corporation, 2016), 1, <https://doi.org/10.7249/PE187>.

¹⁰⁵ Chandra, Moen, and Sellers, 6.

¹⁰⁶ Chandra, Moen, and Sellers, 7.

During a disaster, the private sector can partner with local governments to provide additional capabilities to all levels of government. PPPs leverage the capabilities within the private sector through contractual agreements that allow for the shared distribution and delivery of services and goods to meet the needs of the individuals who reside in the impacted area.¹⁰⁷ For example, Wal-Mart moved truckloads of emergency supplies into devastated communities days before FEMA and other governmental agencies arrived.¹⁰⁸ This shared capability means that governments do not have to assume the sole responsibility of responding to the needs of residents. This process allows the government to shed responsibilities that the private sector handles better, freeing government agencies to execute tasks more suited to them. In some instances, it will enable a timelier response or provide an ability unavailable to the government. For example, a PPP focused on supply chain operations can leverage the distribution networks, warehouses, and trucking, such as those of the National Grocers Association, with a government organization, so bottled water can arrive at the point of need for a community whose water treatment facility is damaged by a disaster.¹⁰⁹ These PPPs bring together the sector capabilities—their institutional knowledge—and create opportunities to mitigate weaknesses while simultaneously leveraging the others' strengths, thereby creating unity of effort. Without the private sector, communities would not have all the available capacity needed to support recovery. This perspective and the role the private sector assumes within the emergency management domain are crucial for economic recovery.

While PPPs along with the fiscal stimulus they provide during a disaster are essential, the private sector is understandably a disaster survivor, too. At the local level, the private sector provides employment, goods, services, and resources that are vital to the overall recovery process. Depending on the severity of the disaster, the private sector's ability to provide these components is limited unless it, too, receives assistance. This

¹⁰⁷ Geoffrey T. Stewart, Ramesh Kolluru, and Mark Smith, "Leveraging Public-Private Partnerships to Improve Community Resilience in Times of Disaster," *International Journal of Physical Distribution & Logistics Management* 39, no. 5 (2009): 346, <https://doi.org/10.1108/09600030910973724>.

¹⁰⁸ Ann Zimmerman and Valerie Bauerlein, "At Wal-Mart, Emergency Plan Has Big Payoff," *Wall Street Journal*, September 12, 2005, ProQuest.

¹⁰⁹ Stewart, Kolluru, and Smith, "Leveraging Public-Private Partnerships," 353.

impact is one reason why Congress created the Small Business Administration (SBA) and the Disaster Loan Program in 1953. The SBA provides the private sector with low-interest loans that supply businesses with the capital to initiate repairs and, if needed, rebuild the company entirely so it can recover from the disaster. To facilitate the recovery effort specific to businesses, the SBA created two different categories of loans: the business physical disaster loan (BPDL) and the economic injury disaster loan (EIDL).¹¹⁰ A third loan category exists, but it is designed to support individual homeowners and renters, not the private sector. Businesses that qualify for the BPDL may borrow up to \$2 million to repair or replace property that is not covered by their insurance, begin to make payments five months after they secure the loan, and can take up to 30 years to repay it, paying no more than 8 percent per annum in interest.¹¹¹ Conversely, EIDL is specifically for businesses that have endured significant economic losses, cannot secure loans from other financial institutions, and meet the SBA definition of small business. A company that meets these requirements can borrow up to \$2 million, may take up to 30 years to repay the loan, and will pay no more than 4 percent per annum in interest, but the credit must go toward mitigating the specific injury that hampers the business from returning to its pre-disaster operations.¹¹² These loans provide the private sector with a method to secure a fiscal stimulus that assists in its economic recovery.

Although the SBA Disaster Loan Program provides the private sector with a method for securing funds to assist in the recovery operation, it is not fully utilized as intended. A review of data spanning 2000 to 2014—a timeline that includes 9/11, the 2005 and 2008 hurricane seasons, and 413 presidential declared disasters—identifies an approximate 11 percent of funds distributed to BPDL, 6 percent to EIDL, and 83 percent to individual homeowners.¹¹³ Although support to homeowners affected by a disaster is a good thing, the overall intent of the SBA and its loan programs is to support the private

¹¹⁰ Bruce R. Lindsay, *The SBA Disaster Loan Program: Overview and Possible Issues for Congress*, CRS Report No. R41309 (Washington, DC: Congressional Research Service, 2015), 2, <https://digital.library.unt.edu/ark:/67531/metadc807373/>.

¹¹¹ Lindsay, 2–3.

¹¹² Lindsay, 3.

¹¹³ Lindsay, 6–9.

sector. Modifications made to the program via the Small Business Disaster Response and Loan Improvements Act of 2008 (which created three new loan programs designed to speed up the distribution of funds to businesses) have also fallen short of meeting the intended goal of supporting the private sector.¹¹⁴ These examples highlight a disconnect. One can extrapolate that either the business sector is unaware that these programs are available to assist in getting back up and running, or the programs are bureaucratic and generate an insignificant return on investment compared to the time and effort to complete the applications.

Regardless of why businesses have not taken advantage of the available federal programs, the business sector is a critical component of the overall economic recovery framework. The business sector's flexibility, speed, and breadth of resources are essential factors that support the recovery effort. Using concepts like PPPs, the shared distribution and delivery of services and goods ensures that communities receive the resources needed to mitigate short- and long-term impacts. Such partnerships can also secure and distribute significant amounts of capital to nonprofit organizations that, in turn, use these funds to support affected communities. However, the business sector is just as prone to disasters as the community is with regards to the overall impact. This perspective is well established, which is why the federal government created programs to assist the sector, but the low utilization of these programs tells a different story. This perspective is concerning because the business sector plays such a significant role in achieving a successful economic recovery. It cannot accomplish this alone, which is why its relationship with all levels of government is paramount.

E. SUMMARY

In the United States, federal, state, and local governments and the private sector have a significant capacity to support and mitigate disasters. Unfortunately, their efforts are not synchronized, meaning they do not fully embrace the whole-community concept,

¹¹⁴ William B. Shear, *Small Business Administration: Actions Taken to Help Improve Disaster Loan Assistance*, GAO-17-566T (Washington, DC: Government Accountability Office, 2017), 1, <https://www.gao.gov/assets/690/684293.pdf>.

which equates with a lack of unity of effort. Therefore, a change is in order to bring about the increased capability to mitigate the economic impact disasters have on communities.

As a critical stakeholder, FEMA has significant influence within the emergency management community. However, it has not taken steps to bring about this kind of change, highlighted by the fact the *National Preparedness Report* continues to emphasize the need to make improvements within economic recovery, but has done little to bring about these improvements. Other symptoms, such as the private sector's tepid use of the BPDFL and EIDL, pinpoint significant economic recovery issues that go unresolved. FEMA has previously demonstrated its ability to act as a unifying organization through its collaborative approach in developing documents like the *National Preparedness Goal* and the *National Preparedness System*. Furthermore, FEMA controls the distribution of billions of dollars that support pre- and post-disaster efforts at the local, state, tribal, and public-sector levels; it, therefore, is an influential organization with the capacity to bring about productive change. Until FEMA and the federal government embrace this capacity and take the necessary steps to address these shortfalls, the country will continue to fall short of its full potential.

The state and local levels have substantial capability to synchronize and provide resources at the point of need. However, this capability continually depends on the federal government. Local and state reliance on presidential declarations to mitigate the cost of disasters, along with emergency management budgets heavily reliant on the federal government, is an unsustainable practice because it costs billions of dollars each year to maintain.

The private sector, composed of small, medium, and large businesses as well as private nonprofit organizations, also has significant capacity to support disaster economic recovery, but it, too, is not fully utilized. While programs like PPPs, which provide speed and efficiency not readily available at all levels of government, are a step in the right direction, the implementation does not always follow. However, the private sector is also keenly susceptible to disasters, and this has a direct impact on the U.S. economy since small businesses employ nearly half the workforce. While specially designed programs support private sector recovery efforts, these programs are underused.

The lack of synchronization and effort among the federal, state, and local levels and the private sector hampers the nation's ability to implement long-term economic recovery improvements. These improvements, in turn, affect communities, which are the lifeblood of society and represent our culture, industry, and way of life. Without their collective effort, and given the reliance on a relationship that is highly dependent on a unified end state, the full potential of FEMA, state and local government, and the private sector is unattainable.

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IV. ECONOMIC RECOVERY ACROSS GOVERNMENT AND PRIVATE SECTORS

In an effort to answer the question of how we improve economic recovery to mitigate the impacts a disaster has on a community, the Delphi methodology was used to probe subject-matter experts who have firsthand experience in either supporting the economic recovery of a community or rebounding from the devastation imposed on their businesses. The methodology taps into knowledge, ideas, and perspectives that only they have—as opposed to pulling the information from existing literature. Therefore, a group of individuals spanning emergency management and business participated in two online surveys.

This group of individuals represented the business community along with the various levels of governance from municipalities, counties, states, and the federal government. To minimize regional bias, individuals from across the United States and representative of different community sizes were asked to participate. The questions asked included aspects from characterizing their areas of expertise to order-ranking those they believed were responsible for economic recovery. Most of the questions, however, were open-ended and sought the participants' insight by asking them to provide a written response in their own words. The results generated from the first round of questioning shaped the development of the second round of questions to focus in on perspectives regarding specific sub-topics or to clarify responses. The inquiry generated a wealth of information, used to further the conversation about how to improve economic recovery.

A. DELPHI ROUND ONE: RESULTS AND ANALYSIS

The first round consisted of 13 questions, and participants had two weeks to respond. The insight, perspectives, and summation of the participants' responses are listed as follows.

(1) Question One

This question asked how the participants would characterize their areas of expertise. The options were as follows: emergency management, policy and governance,

public safety, entrepreneurship or business management, or other. The rationale for such a question was to ensure those who answered had the technical and professional acumen to provide insight on the topic of disaster economic recovery. Of those who responded, 88.9 percent categorized themselves as emergency management subject-matter experts while the remaining 11.1 percent responded with expertise in the business sector.

(2) Question Two

This question—“How would you categorize your organization?”—prompted participants to list their domain, i.e., business or level of governance. Due to the belief that all disasters are local and the emphasis on community as opposed to regional or national economic recovery, the perspective at the local or county was more desirable. If the majority of the respondents were federal, this perspective would outweigh and overshadow input from the local level. Having the business sector’s viewpoint would also be advantageous as it is a critical element. Figure 2 highlights the domains of the respondents.

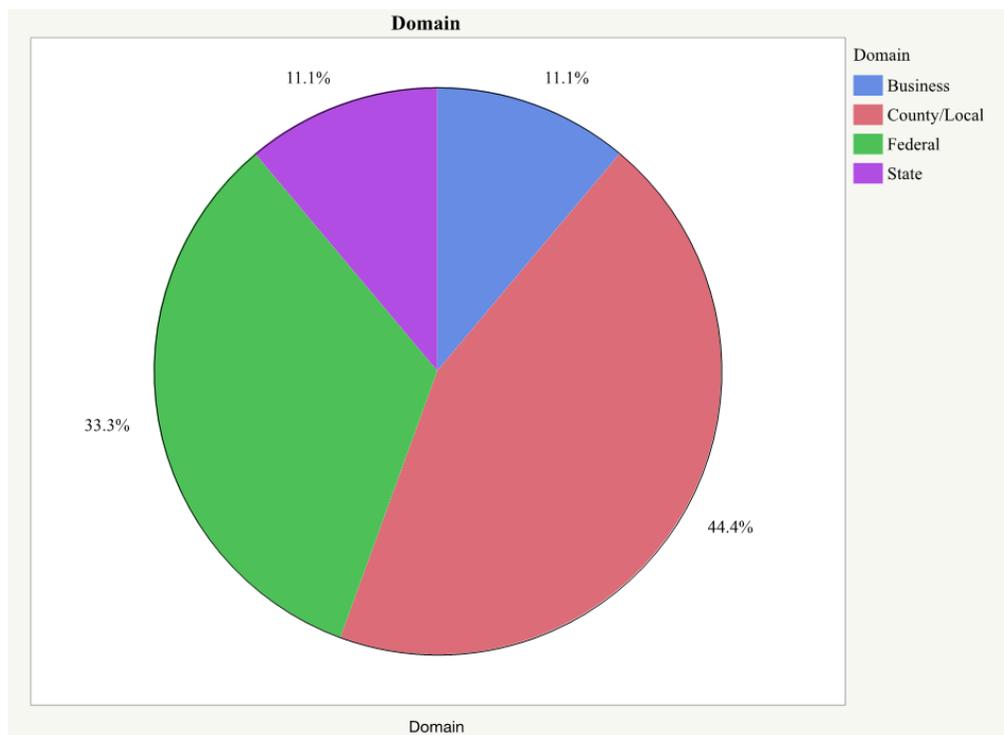


Figure 2. Respondents from Business, County/Local, Federal, and State Government

(3) Question Three

This question asked participants to describe disaster economic recovery and provide its essential elements in their own words. Responses varied from verbose to concise. Although some participants thought “economic recovery is fundamentally related to continuity of government,” others believed it “restor[es] the community’s means of income generation, tax and fee collection, job opportunity, retaining employers and their ability to continue employing.” One respondent even used an analogy: a disaster is like a heart attack, and economic recovery is one of the “tools to establish as near a normal rhythm as possible.” The essential elements of economic recovery provided by participants included everything from proactive approaches like public/private/citizen engagement partnerships developed and maintained before a disaster, to the need for “rapid stabilization and return of critical infrastructure to support business,” to the three essential elements of jobs, schools, and housing. However, only 45 percent of the respondents provided examples of what they considered essential elements.

(4) Question Four

Participants answered whether their organizations have any programs or procedures that address the essential elements during mitigation, response, or recovery provided in their answers to question three. Respondents were also asked to explain the program or processes and how they work. Once again, answers varied. One participant replied, “No formalized programs exist. . . . A recovery plan is in the works, based upon the new National Disaster Recovery Framework, but it is not implemented.” Another responded, “Our organization has a very rough long-term recovery plan,” yet another, “We have adopted a formal Disaster Recovery Framework in alignment with the National Recovery Framework including a specific Recovery Support Function focused on Economic Recovery.” Overall, the responses spanned varying degrees of a program or procedures, and all of them were at different levels of implementation.

(5) Question Five

This question asked, “How do you or will you measure the success of these programs [from question four]?” The variation in responses was interesting, especially

because several participants noted that their organizations did not have a plan or it was in the process of being developed. Most participants provided quantifiable elements, but each organization viewed its measures of success differently. Some organizations focused on pre-event measures, such as the number of businesses registered for the local alert program or the number of public engagements. Conversely, other organizations measured success through the lens of post-disaster efforts, such as the number of schools and businesses opened, the percentage of communities without utilities, or the project completion rate of the Public Assistance program. No consensus or unifying measure emerged as each organization looked at the topic from a completely different vantage point.

(6) Question Six

Participants were then asked whether economic recovery is universally understood within all levels of government and the business sector. Eighty-nine percent of the respondents reported, unequivocally, “no!” Even those respondents who said there was an understanding acknowledged that different levels of knowledge exist, depending on the jurisdiction or whether the community has experienced a disaster. A consistent theme communicated was the lack of clearly defined roles and responsibilities, as well as expectation management. A business owner highlighted that she had experienced several hurricanes over three years, and the economic recovery efforts differed each time. However, several participants reported an optimistic perspective from their organizations or communities, a growing realization that economic recovery is essential. These participants also acknowledged that significant work lies ahead of them to bring about this achievement.

(7) Question Seven

Participants were given a list of nine organizations and asked to identify the top three responsible for economic recovery (see Table 1).

Table 1. List of Organizations, Round One, Question Seven

Organizations		
Federal government	State government	County and/or local government
Individual citizen	Business sector	Non-governmental organizations
Equal responsibility between the federal government and business	Equal responsibility between the state government and business	Equal responsibility between county/local government and business

Each respondent's top three choices were then aggregated, meaning all the responses were collected and calculated against the total number of responses to generate an overall ranking. For example, the top three answers for each respondent were calculated against a total of 27 responses. The findings determined 26 percent of respondents felt business had the overall responsibility for economic recovery. Both individuals and county/local government were considered equally responsible for disaster economic recovery, each attaining 19 percent of the total. A surprising result was that non-governmental organizations ranked fourth overall, eclipsing both state and federal governments (see Figure 3). Both of these organizations are considered as having leading roles in economic recovery.

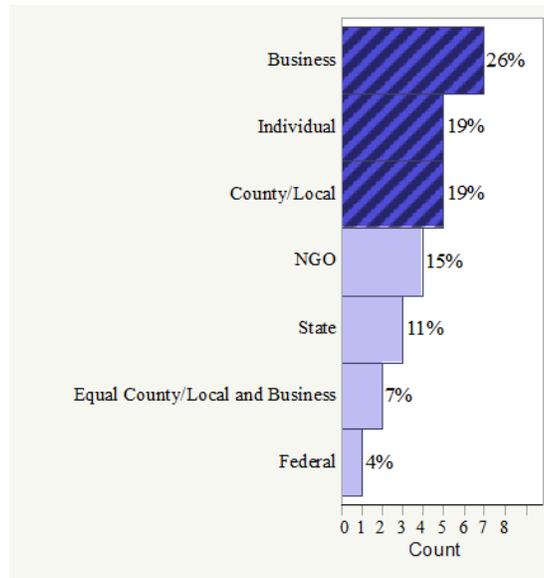


Figure 3. Aggregated Rank Order of Organizations Responsible for Economic Recovery

(8) Question Eight

This question asked participants to provide written recommendations to the lead agency responsible for disaster economic recovery. Responses included everything from restructuring the National Flood Insurance Program to hiring a recovery coordinator. In determining themes, all participants' responses were scanned using World Cloud software. This software scans documents for the frequency of words and produces an image using colors and word size to highlight prevalent themes or ideas. The result identified a need for additional PPPs at the local level; the importance of the community and its ability to identify risk, the development of plans, prioritization of resources, and the ability to communicate this information through outreach and training (see Figure 4). Finally, this report underscored how an understanding of these recommendations, along with a myriad of other attributes like insurance and networking, affect the private sector, the individual, and the community as a whole.



Figure 4. Recommendations in Word Cloud Format for Economic Recovery

(9) Question Nine

This question—“From your perspective, what should be the primary focus of disaster economic recovery?”—offered participants six options. Each choice included a definition to ensure the respondent did not have to interpret the terminology. The list of options appeared as follows:

- Focused on alleviating direct losses, those losses one can point to and calculate an immediate loss of capital like goods, services, and assets of the small business
- Focused on alleviating indirect losses, those losses caused by the after-effects of the disaster like unemployment or lower property values
- Focused on government activities that take place after the disaster like debris removal and critical infrastructure repair, the time it takes, and the results this process bears
- Focused on the damage suffered by small business, the effectiveness of government-managed programs, and the extent to which businesses used these programs

- Unsure of emphasis
- Other, please explain

The results demonstrated that 44 percent of respondents believe government activities should be the primary focus of disaster economic recovery. The runner up, at 22 percent, was a focus on alleviating direct losses. Interestingly, the results highlight that direct losses may be equal to or greater than government activities as some respondents chose the sixth category, “other,” and then listed both direct and indirect losses or noted all of the focuses as equally important.

(10) Question 10

Participants were asked to rate the involvement of the federal government, state government, county/local government, individuals, business sector, and non-governmental organizations in disaster economic recovery. The question used a five-point scale with one being “very involved” and four being “not involved”; five was “unsure.” The initial assessment is that federal, state, and county/local governments, along with the business sector, are moderately involved. Respondents ranked both individuals and non-government organizations as having limited involvement. Although this initial assessment does not provide any significant insight, a different perspective emerges when viewed through an analysis of means methodology focused on the domain, i.e., the organization each participant represents. For example, respondents from the business sector believed the county/local government was very involved with economic recovery whereas state government thought it had limited involvement. Conversely, the business sector and state government believed the business sector was very involved while county/local government thought the business sector had limited involvement. Finally, the majority of domains believed state government was moderately involved whereas the business sector felt it had limited involvement.

(11) Question 11

This question asked participants whether individuals responsible for disaster economic recovery have the skills, training, and knowledge required to ensure success—

to determine professional acumen. The majority of respondents believe they do not. For example, one respondent highlighted the belief that practitioners are very specialized and that an overall approach is not possible. Others assessed that the profession is suffering from high turnover and not maintaining the knowledge collected over years of experience. The comprehensive evaluation is summarized by one respondent: “It’s clear the concept of large-scale economic disaster recovery is nebulous and not reflected . . . in doctrine.”

(12) Question 12

To expand on the previous question, participants were asked to provide, in their own words, the skills, training, and knowledge an individual should possess to manage disaster economic recovery successfully. Table 2 provides an overview of the comments received, provides insight and perspective from current practitioners, and could lead to potential recommendations related to the professional development curriculum supplied to practitioners.

Table 2. Skills, Training, and Knowledge for Economic Recovery Practitioners

Attribute #1	Attribute #2	Attribute #3
Knowledge of immediate assistance available	Knowledge of pitfalls associated with similar disasters	One-on-one service start to finish
Knowledge of programs related to economic recovery	Ability to think creatively and act decisively	Ability to work across disciplines and levels of government
Knowledge of grant programs	Supply chain resiliency; pre-event contracting	Community economic development
Critical thinking	Ability to think strategically	Ability to convey a message that gets buy-in
Coordination	Collaboration	Communication
Knowledge of government taxes and finances	Knowledge in urban planning, hazard mitigation, and coalition	Collaborator with a proven track record

Knowledge of local, state, federal, and private resources	Understanding the roles of various local agencies and planning frameworks	Knowledge of government and business continuity
Team building	Communication	Understanding local/state economic drivers, how they nest regionally/nationally
Leadership: Ability to organize, coordinate, and communicate	Comprehensive planning	Strong network: Know your partners in the community/surrounding jurisdictions

(13) Question 13

The final question sought to understand the customer base of the respondents. The majority of respondents provide services to a population of over 300,000 (see Figure 5).

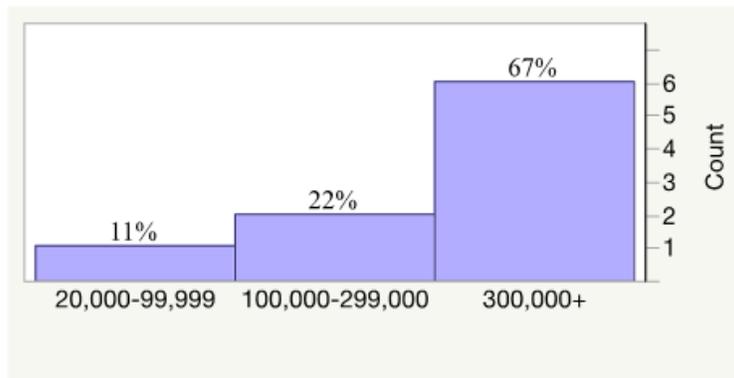


Figure 5. Population Density of Participants

B. DELPHI ROUND TWO: RESULTS AND ANALYSIS

The second round of questions consisted of 12 questions distributed to 14 participants two months later, and once again, participants had two weeks to respond. As previously stated, the return rate for the second round was 36 percent. Also, no federal participants responded, and only one business response was returned, albeit with half of the questions unanswered. The feedback and perspective of the participants are listed as follows.

(1) Question One

Participants were asked to highlight their domain, i.e., business or level of governance. This question was designed to determine the demographics of the individuals participating in the second round of questions. This perspective helped to determine whether there had been a significant change in the percentage of individual's participating. It was striking that not a single respondent categorized his or her organization as the federal government. The domain most represented by participants in the second round was county or local government with a total participation rate of 66.7 percent. Those individuals who categorized themselves as either state government or the business sector were proportionate at 16.7 percent. Although it is essential to have an active county or local perspective, the lack of a federal viewpoint did mean that a significant actor was missing from the data.

(2) Question Two

Participants were prompted to rank nine government services from most important to least important in influencing economic recovery goals and success following a disaster. The list of services appears in Table 3.

Table 3. List of Government Services, Round Two, Question Two

Government Sector Services		
Freedom of movement	Inspections: Health, building, etc.	Water
Emergency services	Public communication: Status/availability of services and resources	Schools
Other	Transportation: Buses, subways, etc.	Electrical

The respondents' choices were then aggregated, meaning all the individual responses were collected and entered into a statistical software program, and the distribution of values was analyzed against the total number of responses to generate an overall ranking. The findings show that 28 percent of respondents felt emergency services were most critical following a disaster. Water and public communications both tied for second place, and electrical came in for a close fourth place with 16 percent.

Table 4. Government-Sector Service Rankings

Government Service	Ranking
Emergency services	1
Public communications	2
Water	3
Electrical	4
Freedom of movement	5
Transportation	6
Inspections	7
Schools	8
Other	9

(3) Question Three

Participants were asked whether the development of a universal definition for disaster economic recovery would create a benefit or a distraction in bringing about improvements in knowledge, capability, and unity of effort. Eighty-three percent of respondents believed a universal definition would create an advantage. However, when asked to explain their rationale, many respondents underscored that each locale has its own way of fixing a problem, and a universal definition must be broad so as not to restrict ingenuity or flexibility. Those who expressed that a universal definition would be a distraction felt the National Disaster Recovery Framework already provided enough information to ensure unity of effort.¹¹⁵ One participant believed additional training and emphasis on existing economic recovery support functions within all levels of government and the community would be a more appropriate step to bring about improvements.

(4) Question Four

This question asked participants how they might allocate funding if the federal government were to redirect or establish new appropriations to support economic recovery.

¹¹⁵ Federal Emergency Management Agency, *National Disaster Recovery Framework*, 29.

Sixty-seven percent highlighted a need to focus efforts toward small to medium businesses. These include everything from grants to low-interest loans to implement repairs quickly so that the business can re-open, to training and resources that help businesses develop continuity plans to strengthen their ability to withstand disasters. A secondary theme was the need for resources, specifically personnel, to support the planning and development of economic recovery plans.

(5) Question Five

To expand on responses from the first survey related to question 11, which focused on professional acumen, participants were asked to describe the essential thing a practitioner must know or comprehend to bring about improvements in economic recovery. Sixty percent of respondents stressed the need to understand local capabilities such as PPPs, local economic drivers and conditions, and the interdependence on resources including water and electricity. A secondary emphasis was an understanding of aspects like taxation, financial assistance, and supply chain management related to post-disaster recovery.

(6) Question Six

Participants were asked to rank a list of nine business sector services from most important to least important regarding their importance in helping business restoration (see Table 5).

Table 5. List of Business-Sector Services, Round Two, Question Six

Business Sector Services		
Fiscal institutions	Communications: Phone, print, internet services, TV, radio, etc.	Fuel: Gas stations, propane
Shipping: UPS, FedEx, etc.	Major retailers: Home Depot, Lowes, Target, etc.	Supply chains: Distributors, suppliers
Medical: Hospitals, pharmacy, dialysis	Accommodations: Lodging, short-term shelters, long-term housing	Nourishment: Groceries, restaurants, etc.

The respondents' choices were then aggregated, meaning all the individual responses were collected and entered into a statistical software program, and the distribution of values was analyzed against the total number of responses to generate an overall ranking. The findings rated the supply chain—the distribution of supplies and the suppliers themselves—as an essential business-sector service. Communications followed at a close second, with fuel, medical, and nourishment rounding out the top five.

Table 6. Business-Sector Service Rankings

Business Service	Ranking
Supply chain	1
Communications	2
Fuel	3
Medical	4
Nourishment	5
Fiscal institutions	6
Accommodations	7
Major retailers	8
Shipping	9

(7) Question Seven

To determine whether prioritization should be a key factor at the local level, participants were asked whether saving businesses rather than private property—such as homes—should be a higher priority in the community during a disaster. For example, if the fire department were to prioritize protecting the business sector of a community as opposed to trying to save homes during wildland fires, would this produce a better economic recovery for the whole community? Although the destruction of homes is terrible for homeowners, the loss of multiple businesses could result in long-term economic hardship for the community, which might cause homeowners to eventually lose their homes to foreclosure in a cascade of events. Eighty percent believed the value of establishing businesses as a priority—with caveats. Many participants expressed concerns that

prioritization should not impede or restrict the ability of first responders to make life-safety decisions, depending on the situation. Likewise, participants worried about liability protection for first responders against legal action should they choose the business sector over homes. The development of local priorities would require significant public input and education. However, as one respondent noted, “Temporary shelter can always be established, but a temporary grocery store, pharmacy, gas station, etc., is much harder [to establish].”

(8) Question Eight

Participants were asked what changes they would make to the Stafford Disaster Relief and the Emergency Assistance Act to focus communities on business. Responses ranged from creating tax incentives for businesses that enact and develop continuity plans to consolidating the SBA and United States Department of Agriculture functions under a new category called business assistance (BA). BA would complement individual assistance (IA) and public assistance (PA) following a disaster, and the consolidation would centralize post-disaster relief and assistance under one agency. Other suggestions included modifying the acts to address cyber, terrorism, or other specialized or overlapping hazards. The consistent theme throughout all the recommendations featured the need to establish incentives before the disaster to mitigate its overall impact. Such incentives may be more applicable to federal code related to taxes but illustrate the need to steer businesses and communities in this direction.

(9) Question Nine

Participants were asked to explain what caused the delay in creating an economic recovery plan for their organizations. This question expanded on the information gained from questions three, four, and five of the first round of questions. The majority of responses featured the lack of time and personnel capacity required to develop the plan. Existing staff are engaged in other projects, or they do not have the technical acumen to develop the plan successfully. Also, approximately 40 percent of respondents noted a lack of political will or leadership to drive the planning process. Almost all participants viewed

the process as labor-intensive, requiring an inordinate amount of time to research, design, develop, and communicate to the public.

(10) Question 10

This question asked respondents to expand on the information gained from question seven, in which they ranked the top three organizations responsible for disaster economic recovery. Non-governmental organizations (NGOs) ranked fourth, which was a surprise. This question aimed to ensure a uniform understanding of what constitutes an NGO. All respondents reflected a similar knowledge of it as an organization—in most cases with the tax exemption identification code of 501(c)(3) from the U.S. Internal Revenue System—that operates independently from government assistance and of the profit-driven motive of business. Examples listed included the American Red Cross, the Salvation Army, the United Way, and Team Rubicon. Despite a collective understanding of what an NGO is, it is curious why participants in round one ranked NGOs high compared to other organizations typically responsible for economic recovery. Perhaps the first-round question was poorly worded or misinterpreted. Although NGOs play a significant role during recovery operations, the research team posits that such organizations are not historically responsible for economic recovery. NGOs are facilitators, providing a valuable service to a community during a disaster event as opposed to having the responsibility of planning for and mitigating the actual economic recovery of a community following a disaster.

(11) Question 11

Due to the importance of PPPs, participants were asked to provide examples of successful PPPs and the attributes that make them successful. Various samples were provided, but the success stories that came out of New Orleans following Hurricane Katrina and Joplin, Missouri, surfaced consistently. For example, in New Orleans, healthcare administrators and medical providers made a concerted effort to improve the public health system to ensure greater resilience during a disaster. Their efforts established a network of 70 community-based clinics that can support in upwards of 100,000 patients per year and

has reduced the uninsured rate by eight percentage points.¹¹⁶ In Joplin, the Missouri Veterinary Medical Association in conjunction with Missouri Southern State University supported the care and sheltering of 1,308 animals displaced by the tornado. In addition, Sprint helped Joplin’s public safety team with communications while the Empire District Electric Company immediately surged its capability to return power.¹¹⁷ None of the participants provided attributes that made the PPP successful, but the underlying premise was identifying a need, and the community in conjunction with the business sector developed a unique solution to resolve that need. Unfortunately, these examples emphasize that such efforts take place either during or after the disaster. A more proactive approach would provide opportunities to build redundancy, establish long-term relationships, and test solutions to ensure their validity.

(12) Question 12

The final question of the survey asked participants to provide three metrics, along with an explanation, that practitioners and leaders could use to measure the success of an economic recovery program. Unanimously, the participants recommended that the first metric examine the number or percentage of businesses that re-opened following a disaster. Secondary recommendations, albeit not unanimous, included monitoring the unemployment rate within a municipality or county, as well as complete services and goods provided to the population within a specific geographical boundary. Other recommendations included monitoring post-disaster tax revenue to see whether it rises or falls, along with the total number of participants within a community-based recovery support function. The overall assessment is that a variety of aspects require consideration, similar to those established in the recent development of the “lifeline” construct. The lifelines, or lines of effort, include safety and security; food, water, and shelter; health and

¹¹⁶ Lisa Marsa, “Top-Notch Community Health Care Emerges in New Orleans from Hurricane Katrina’s Rubble,” *USA Today*, August 28, 2015, <https://www.usatoday.com/story/news/2015/08/28/community-healthcare-emerges--hurricane-katrina-rubble--new-orleans/71331792/>.

¹¹⁷ Federal Emergency Management Agency, *The Response to the 2011 Joplin, Missouri, Tornado Lessons Learned Study* (Washington, DC: Department of Homeland Security, 2011), 19–20, <https://kyem.ky.gov/Who%20We%20Are/Documents/Joplin%20Tornado%20Response,%20Lessons%20Learned%20Report,%20FEMA,%20December%2020,%202011.pdf>.

medical; energy; communications; transportation; and hazardous material, which focus response on stabilizing the disaster (see Figure 6).¹¹⁸ As noted, these lifelines address the response phase of the disaster, in which FEMA’s continued effort focuses, as opposed to an equal emphasis on response and recovery. The attributes of these lifelines are essential to ensure a successful recovery of the community, but at present, they are viewed primarily as stabilization during the response phase.



Figure 6. FEMA Lifelines¹¹⁹

C. SUMMARY

The feedback and results from the survey endorse the point that economic recovery is a hard, complicated, and nebulous core capability. The information gathered also validates findings from the 2018 *National Preparedness Report*, which determined the capability a persistent challenge. However, unlike in the report, the survey illustrates the issues are not only external factors—outside the emergency management community’s control, such as the lack of business-sector continuity plans or their difficulty in navigating post-disaster economic recovery programs—but internal factors as well.¹²⁰ These factors include everything from stakeholder inconsistency concerning economic recovery’s essential elements across all domains, to limited professional acumen and training for individuals who are responsible for implementing economic recovery following a disaster. Overall, the survey results not only confirm that economic recovery is a persistent

¹¹⁸ Federal Emergency Management Agency, “Community Lifelines Implementation Toolkit” (Washington, DC: Department of Homeland Security, February 2019), 10–17, https://www.fema.gov/media-library-data/1550596598262-99b1671f270c18c934294a449bccca3ce/Tab1b.CommunityLifelinesResponseToolkit_508.pdf.

¹¹⁹ Federal Emergency Management Agency, 6.

¹²⁰ Federal Emergency Management Agency, *2018 National Preparedness Report*, 38–40.

challenge but also stress the significant confusion and limited capability within all domains. This constraint, in turn, restricts interoperability and integration and directly affects support for the economic recovery of the community.

Although the data underscore that significant effort must take place to bring about improvements, the survey also foreshadows positive outcomes are feasible and practical through new ideas and perspectives. These viewpoints include recommendations for prioritizing government and business-sector services and saving businesses before protecting other private property to help practitioners make decisions. These decisions are challenging to make but, in the long run, will improve the economic recovery of the community following a disaster. Practitioners also suggested attributes that individuals should possess if they are responsible for supporting the capability, along with metrics that will help achieve success. These efforts demonstrate that practitioners desire not only to bring about success but also to contribute numerous ideas and insight to support this goal.

Although the data from the survey provide significant insight and perspectives, they require further examination to generate a complete evaluation of the capability. Therefore, the capability itself must go through an additional analysis that uses established evaluation criteria—the results of the surveys along with a comparison to existing literature—with the intent of generating an overall assessment of economic recovery. This assessment, in turn, will provide policymakers, practitioners, and stakeholders with a shared understanding of where to focus efforts to enable a long-term change that produces positive results.

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V. NET ASSESSMENT ANALYSIS

The next step in determining how to bring about improvements in economic recovery is to conduct a net assessment. As previously discussed, a net assessment assesses the threat an adversary poses by examining its military, economic, political, and technological capabilities.¹²¹ However, such an assessment not only encompasses an adversarial threat assessment but also measures the impact an adversary will have on the organization and provides decision-makers with a capabilities assessment that describes how capabilities can counter or mitigate the adversary's impact.¹²² The net assessment sets out not to create short-term solutions or recommendations but to identify issues so that leaders can implement long-term changes to resolve them.¹²³ Therefore, this assessment examines the National Disaster Recovery Framework (NDRF), the operational environment that supports economic recovery and governance. Instead of using traditional criteria like risk or threat, the assessment focuses on flexibility, standardization, and unity of effort as evaluation criteria.

To establish a shared understanding, clearly defining the three categories and the evaluation criteria used in the assessment is essential. As Carl von Clausewitz wrote in his enduring book *On War*, "Not until terms and concepts have been clearly defined can one hope to make any progress in examining the question clearly and simply and expect the reader to share one's views."¹²⁴ Therefore, the categories and evaluation criteria used to support this net assessment follow.

A. CATEGORIES

The three categories selected represent all of the components used to implement economic recovery. The three mutually support each other, meaning they depend on each

¹²¹ Dahl, "A Homeland Security Net Assessment Needed Now," 64–65.

¹²² Dahl, 70.

¹²³ Bracken, "Net Assessment," 95–96.

¹²⁴ Carl von Clausewitz, *On War*, ed. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1976), 132.

other to achieve success. This symbiotic relationship prevails throughout the various levels of government, as well as the private sector, and nests with the overall concept of the whole of community—a paramount concept in the *National Preparedness Goal*.

National Disaster Recovery Framework: The nation’s framework outlines the strategy to build, sustain, and coordinate all aspects of the mission area recovery. The core capability of economic recovery is one of eight capabilities in the NDRF that were created to lessen the risks identified in the *Strategic National Risk Assessment*.¹²⁵ The document and its principles, scope, and capabilities all have an interdependency that links directly back to one another. The *Assessment* is a vital component of the *National Preparedness System* and was designed to meet the overall intent of the *National Preparedness Goal*.¹²⁶

Operational Environment is the environment in which stakeholders and organizations work while supporting economic recovery efforts. This environment spans both pre- and post-disaster periods and is composed of the “conditions, circumstances, and influences that affect the employment of capabilities” and the decisions made by individuals or organizations.¹²⁷

Governance is the process through which society, or groups within it, organize to make decisions.¹²⁸ This category includes local, state, federal, and tribal governments, along with non-governmental organizations and the business sector.

B. EVALUATION CRITERIA

The evaluation criteria chosen to conduct the assessment are the guiding principles of the *National Incident Management System*, a process local, state, federal, and tribal governments, along with “non-governmental organizations . . . and the private sector use to collaborate to prevent, protect against, mitigate, respond to, and recover from

¹²⁵ Federal Emergency Management Agency, *National Disaster Recovery Framework*, 24.

¹²⁶ Federal Emergency Management Agency, 1–3.

¹²⁷ Department of the Army, *Operational Environment and Army Learning*, Training Circular 7-102 (Washington, DC: Department of the Army, 2014), 1-1, <https://community.apan.org/wg/tradoc-g2/ace-threats-integration/m/documents/210907>.

¹²⁸ “What Is Governance?,” Institute on Governance, June 10, 2019, <http://iog.ca/what-is-governance/>.

incidents.”¹²⁹ This system is a vital component of the *National Preparedness System*, which in turn supports the *National Preparedness Goal*, so the concepts and ideas are an established lexicon used across a variety of domains.¹³⁰ They are also commonly understood by general practitioners.

Flexibility is a methodology that is adaptable, scalable, and therefore applicable for a multitude of situations that vary widely in terms of “hazard, geography, demographics, climate, culture, and organizational authorities.”¹³¹

Standardization is a methodology that ensures uniform organizational structure, practices, and terminology within an environment that fosters cohesion across various organizations, thereby supporting integration, interoperability, and connectivity among different jurisdictions and organizations.¹³²

Unity of Effort: The *National Incident Management System* defines unity of effort as “coordinating activities among various organizations to achieve common objectives. Unity of effort enables organizations with specific jurisdictional responsibilities to support each other while maintaining their authorities.”¹³³

C. NET ASSESSMENT ANALYSIS

This assessment uses information gathered during the two Delphi surveys, as well as existing academic literature discussed throughout the thesis, to produce an objective evaluation based on facts and observations. This assessment aims to provide policy and decision-makers with insight, so they can determine whether modifications to the existing framework and processes are required. The following scale is used throughout the assessment: “inadequate” means that significant issues exist related to resourcing or

¹²⁹ Federal Emergency Management Agency, *National Incident Management System*, 3rd ed. (Washington, DC: Department of Homeland Security, 2017), 1–3, https://www.fema.gov/media-library-data/1508151197225-ced8c60378c3936adb92c1a3ec6f6564/FINAL_NIMS_2017.pdf.

¹³⁰ Federal Emergency Management Agency, *National Preparedness System*, 1.

¹³¹ Federal Emergency Management Agency, *National Incident Management System*, 3.

¹³² Federal Emergency Management Agency, 3.

¹³³ Federal Emergency Management Agency, 3.

capability, and extensive effort must take place to bring about improvement; “adequate but needs improvement” means that some issues exist related to resourcing or capability, and moderate effort must take place to bring about improvement; and “adequate” means sufficient resources or capability exists.

1. National Disaster Recovery Framework Assessment

a. Flexibility

Although the NDRF is written in a way that it is adaptable and applicable for a multitude of situations, it does not provide realistic expectations for scalability. Therefore, it rates as adequate but needs improvement.

An example of an unrealistic expectation is its recommendation to establish a local disaster recovery manager (LDRM). The LDRM is responsible for organizing, coordinating, and advancing the recovery effort at the local level following a disaster, which includes economic recovery.¹³⁴ The LDRM works with the state disaster recovery coordinator, the federal disaster recovery coordinators (FDRCs), and in some cases, the tribal disaster recovery coordinator, depending on the size and scale of the disaster.¹³⁵ If the disaster requires a federal response, and if federal recovery support functions take effect, as discussed later in this chapter, an economic recovery support function (ERSF) field coordinator, responsible for the coordination of primary and supporting organization efforts, is also established.¹³⁶ Ideally, communities would establish an ERSF coordinator to facilitate unity of effort and to mitigate the span of control issues. On the surface, this sounds like an appropriate method to support economic recovery efforts. However, as discussed in Chapter II, the Mesa County Emergency Service Division in Colorado was limited in its ability to provide resources before, during, and after a disaster. Many organizations do not have the technical background to support the role of an LDRM, let

¹³⁴ Federal Emergency Management Agency, *National Disaster Recovery Framework*, 31.

¹³⁵ Federal Emergency Management Agency, 20.

¹³⁶ Federal Emergency Management Agency, *Recovery Federal Interagency Operational Plan*, 2nd ed. (Washington, DC: Department of Homeland Security, 2016), D-13, https://www.fema.gov/media-library-data/1471451918443-dbbb91fec8ffd1c59fd79f02be5afddd/Recovery_FIOP_2nd.pdf.

alone an ERSF field coordinator. Feedback from surveyed practitioners who expressed the belief that individuals responsible for economic recovery do not have the skills, training, or knowledge required to ensure success also supports this conclusion.

In addition to personnel and technical capacity, the NDRF recommends the development of a multitude of plans such as the local hazard mitigation strategy, pre-disaster recovery plans, non-governmental and private sector organization plans, and incident action plans, all of which encompass aspects of economic recovery. Once again, such a recommendation establishes an unrealistic and scalable expectation. For example, when asked whether their organizations had any programs or procedures related to recovery, participants responded with varying degrees of completion, along with different levels of implementation. Regarding the primary reason for the delay, the top three responses were a lack of time, personnel capacity, and a lack of political will or leadership. A Government Accountability Office (GAO) report to Congress found that 60 percent of states surveyed did not have an NDRF-based recovery plan.¹³⁷ Therefore, the expectations and recommendations in the NDRF do not support realistic scalability at the local level. This limited factor establishes an unrealistic expectation that localities and, in some cases, states can successfully implement the doctrine, roles, and responsibilities listed in the NDRF.

b. Standardization

Overall, the NDRF establishes a standard methodology to support economic recovery and is assessed as adequate but needs improvement. The NDRF adequately creates a structure that denotes roles, responsibility, and terminology, which are all critical factors in achieving standardization. However, the publication is not universally understood across the domains. For example, the NDRF introduces the new concept of recovery support functions (RSFs). These six functions are designed to help coordinate critical areas of recovery support and nest with their parent core capability.¹³⁸ However,

¹³⁷ Eugene L. Dodaro, *Disaster Recovery: FEMA Needs to Assess Its Effectiveness in Implementing the National Disaster Recovery Framework*, GAO-16-476 (Washington, DC: Government Accountability Office, 2016), 31, <https://www.gao.gov/products/GAO-16-476>.

¹³⁸ Federal Emergency Management Agency, *National Disaster Recovery Framework*, 36.

the names for the RSFs are the same as the core capabilities, which is confusing. Each RSF has a specific federal coordinating agency that assists in the management of relationships and integration between various stakeholders; the Department of Commerce is responsible for economic recovery.¹³⁹ RSFs are similar to ESFs but take place during recovery; ESFs are “primary, but not exclusive, federal coordinating structures for building, sustaining, and delivering the Response core capabilities.”¹⁴⁰ This concept, which was meant to improve recovery efforts, muddles the idea of standardization. Practitioners are confused about the role of the RSF vis-à-vis the ESF. This confusion explains why a GAO report found that 80 percent of the states surveyed did not understand aspects of the NDRF.¹⁴¹ This confusion would also explain why every participant surveyed as part of the Delphi survey had a different description or definition for economic recovery, and no one listed the three critical tasks described in the NDRF as essential elements of the capability.

Overall, the NDRF has not established a foundational understanding that fosters cohesion and collaboration. The lack of understanding and acceptance denotes the need for additional emphasis, training, and clarification to achieve consistency that supports effective teamwork across a multitude of domains.

c. Unity of Effort

An assessment of inadequacy derives from the fact the NDRF has not established a unifying effort to support economic recovery activities among various organizations. Although the document was the combined effort of 600 stakeholders from various domains, it has not generated the desired results to date.¹⁴² For example, every participant surveyed provided a different definition of economic recovery and noted that because most organizations do not have an economic recovery plan, they have no established metrics or defining elements. The NDRF expressly states, “Local government has primacy in preparing for and managing the response and recovery of its community,” yet it cannot

¹³⁹ Federal Emergency Management Agency, 38.

¹⁴⁰ Federal Emergency Management Agency, 33.

¹⁴¹ Dodaro, *Disaster Recovery*, 31.

¹⁴² Federal Emergency Management Agency, *National Disaster Recovery Framework*, 3.

accomplish this task without significant support.¹⁴³ However, every respondent expressed the belief that economic recovery is not universally understood throughout all domains of government. This current limitation means it is nearly impossible to achieve success due to the lack of common objectives due to confusion, a lack of pre-disaster plans with metrics, or scalability at the local level.

FEMA acknowledges these limitations. For example, it recognizes the challenge of providing skilled individuals to assist in training and recovery exercises due to a lack of qualified FDRCs.¹⁴⁴ Although the intent was to have in upwards of 23 trained FDRCs throughout the nation, the number is more likely one per FEMA's regional headquarters. This limited number of FDRCs exacerbates the problem that many of these individuals are deployed to other regions to support federal recovery efforts following a disaster.¹⁴⁵ Without training and education, unity of effort is crippled as the capability only resides at the federal level. If support to the local level is a priority, then a more significant effort must provide the technical skills, knowledge, and capability to achieve success.

2. Operational Environment Assessment

a. Flexibility

Because disasters affect communities in unique ways, and the impact on the business and homes within that community are different as well, flexibility provides government and stakeholders with a menu of choices to support recovery. Although this assessment finds flexibility within the operational environment, certain restraints preclude plasticity, so it ranks as adequate but needs improvement.

The loan programs offered by the SBA are an excellent example of limited flexibility. As discussed in Chapter III, the SBA offers the BPDFL and EIDL programs. Following Hurricane Katrina, Congress passed the Small Business Disaster Response and Loan Improvements Act of 2008, which established three new loans: the Expedited

¹⁴³ Federal Emergency Management Agency, 14.

¹⁴⁴ Dodaro, *Disaster Recovery*, 26.

¹⁴⁵ Dodaro, 26–27.

Disaster Assistance Loan Program (EDALP), which provides up to \$150,000 in loans to businesses more quickly than standard SBA disaster loans; the Immediate Disaster Assistance Program (IDAP), which provides businesses with \$25,000 in interim loans through private-sector lenders within 36 hours after SBA receives the loan application; and the Private Disaster Assistance Program (PDAP), which would provide up to \$2 million in guaranteed loans to both businesses and homeowners.¹⁴⁶ However, these programs were never fully implemented, thereby restricting flexibility. A GAO report in 2014 determined that the three programs had languished for years, which meant business owners impacted by Hurricane Sandy in 2014 did not have access to them.¹⁴⁷ Three years later, in testimony to Congress, the GAO judged that the SBA did not decide how to proceed with the implementation of the three programs.¹⁴⁸ Either spurred by GAO testimony or congressional influence, the SAB launched a pilot program for its existing Express Bridge Loan Program, which provides small businesses with government-guaranteed disaster loans of up to \$25,000 using their existing banking relationships.¹⁴⁹ Although it improves upon the SBA assistance programs, it still falls short of the overall requirement.

As discussed throughout this thesis, disasters not only affect businesses but directly impact local, state, and tribal governments as well. Similar to the SBA loan programs that support the business community, FEMA’s Public Assistance program provides grant funding to local government to support everything from the removal of debris to the repair, replacement, or restoration of publicly owned facilities.¹⁵⁰ However, these funds follow disasters and play no role in prevention. Funding for pre-disaster efforts would help ensure that communities develop economic recovery plans before the event. These funds exist,

¹⁴⁶ Food, Conservation, and Energy Act of 2008, Public Law 110-234, §§ 12083–12085, 122 Stat. 923 (2008), <https://www.govinfo.gov/content/pkg/PLAW-110publ234/pdf/PLAW-110publ234.pdf>.

¹⁴⁷ William B. Shear, *Additional Steps Needed to Help Ensure More Timely Disaster Assistance*, GAO-14-760 (Washington, DC: Government Accountability Office, 2014), 39, <https://www.gao.gov/assets/670/666213.pdf>.

¹⁴⁸ Shear, *Actions Taken to Help Improve Disaster Loan Assistance*, 7.

¹⁴⁹ John Reosti, “SBA Launches Program to Let Banks Fast-Track Disaster Relief,” *American Banker* 183, no. 228 (November 2017): 1, EBSCO.

¹⁵⁰ Chris Currie, *FEMA Has Made Progress, but Challenges and Future Risks Highlight Imperative for Further Improvements*, GAO-19-617T (Washington, DC: Government Accountability Office, 2019), 13, <https://www.gao.gov/assets/700/699957.pdf>.

but because of the current confusion and complexity of economic recovery, the first payments support those capabilities that are tangible and present within the environment. For example, the five core capabilities within the mission area of recovery, including economic recovery, received approximately \$5 million in 2017 pre-disaster funding, compared to the approximately \$300 million that supported response core capabilities.¹⁵¹ As one federal employee quipped, “We never get to the point where we transition from response to recovery because recovery is hard.”¹⁵² A slight shift in emphasis, which should include training for a multitude of stakeholders and using existing pre-disaster funding to support economic recovery, could generate greater flexibility within the operational environment.

b. Standardization

A concerted effort within the operational environment supports standardization. This assessment includes the development of the framework, terminology, and roles and responsibility, all with the desire to foster integration, interoperability, and connectivity among different practitioners and jurisdictions. Therefore, this criterion merits a rating of adequate.

It merits this rating because an actual framework exists, and practitioners are attempting to use it—albeit with significant room for improvement in universal understanding. Practitioners have continued to learn from past mistakes and take corrective action to address limitations. For example, FEMA received the recommendation to establish a national mitigation investment strategy to assist governments across all domains with prioritizing and planning for efforts that support resiliency. These efforts would include elements that support economic recovery. FEMA projects the publication of the strategy in fall 2019, and the draft document is based on six themes: improved coordination, increased investment, shared fiscal responsibility, greater access to data, risk-

¹⁵¹ Federal Emergency Management Agency, *2018 National Preparedness Report*, 9.

¹⁵² Comment made to the author during a training exercise by a federal emergency management professional who prefers to remain anonymous, personal communication, June 19, 2018.

informed communication, and a resilient built environment.¹⁵³ This effort demonstrates a willingness at the federal level to take constructive criticism, modify existing practices and procedures, and then implement revised processes to bring about a positive change.

In addition to the willingness at the federal level, the state and local levels seem inclined to implement elements of the established recovery framework. For example, the state of Colorado incorporated elements of the NDRF to include RSFs and organizational structure, roles, and responsibilities; nevertheless, Colorado created more than the established six RSFs, and theirs are more task-oriented, as an annex to their state emergency operations plan.¹⁵⁴ If improvements were to take place that increased FDRC staffing, along with boosting training and exercise opportunities to eliminate confusion, other states would achieve more of the established standards, thereby increasing economic recovery integration and interoperability. However, this process will take time and significant effort since most of the participants in the Delphi survey highlighted that their organizations do not have programs or procedures in place to support economic recovery. Colorado seems to be an exception as participants also reported most of the organizations do not establish metrics or standards to determine economic recovery success, primarily because there are no existing programs to assess. Those that have programs or procedures felt the metrics were ill-defined or not disseminated to the appropriate individuals. However, with time and effort, this assessment will undoubtedly improve, thereby improving the overall effectiveness of recovery and the economic recovery capability.

c. Unity of Effort

Within the operational environment, unity of effort is inadequate. The earlier analysis highlighted the significant confusion regarding the recovery framework. For example, survey participants reported that economic recovery is not universally understood within all levels of government, meaning not everyone rationalizes it from the same perspective. One participant noted, “The process [economic recovery] is very ad hoc and

¹⁵³ Mitigation Framework Leadership Group, “National Mitigation Investment Strategy” (fact sheet, Federal Emergency Management Agency, 2018), 2, <https://www.fema.gov/media-library-data/1515689913243-56ec8e5bfeab242eb6a01117b903a52a/NMIS-Fact-Sheet-010918.pdf>.

¹⁵⁴ Dodaro, *Disaster Recovery*, 16.

situational dependent” while another said, “I do not believe it is totally understood across all disciplines.” Therefore, if the basic idea or concepts of economic recovery are not understood, then it is unrealistic to think practitioners are working toward a set of common objectives.

Participants also reported a belief that the development of a universal definition would be a benefit, thereby increasing knowledge, capability, and unity of effort. What is interesting is the NDRF already provides a definition: “return[ing] economic and business activities (including food and agriculture) to a healthy state and develop[ing] new business and employment opportunities that result in an economically viable community.”¹⁵⁵ Only one practitioner used this definition in the response, which highlights the disconnect between elements within the operational environments. This disconnect underscores the premise that fundamental elements of understanding do not exist. For example, practitioners assessed their proficiency with economic recovery as low, ranking it 30 out of 32 core capabilities. This assessment would explain why a practitioner reported, “We continued to have the same issues and have not found ways to improve upon the outcomes” while another said, “Economic experts are not well versed or experienced in disaster economic impacts.” The argument, therefore, is that unity of effort does not exist as the majority of stakeholders are operating on independent and “siloed” knowledge, thereby restricting a collective effort.

3. Governance Assessment

a. Flexibility

Although various programs support the economic recovery capability during pre- and post-disaster recovery efforts, these programs are somewhat inadequate. For this reason, the assessment of governance flexibility is adequate but needs improvement.

Examples of these programs include FEMA’s IA and PA, which provide support to the community, and SBA’s BPD and EIDL, which provide support to the business sector and homeowners, but the EDALP, IDAP, or PDAP were never fully implemented, thereby

¹⁵⁵ Federal Emergency Management Agency, *National Disaster Recovery Framework*, 25.

restricting options. The lack of options could be just another example of government bureaucracy, but this limitation has broad implications. Researchers Sardana and Dasanayaka determined the process by which governments and non-government organizations influence, assist, and support small businesses' efforts to rebuild is critical to success.¹⁵⁶ Therefore, the absence of these programs limits the ability to provide flexible solutions to meet the needs of the business sector, which in turn has a direct impact on the community.

Governance could influence flexibility, thereby increasing capacity in other ways. For example, a community could prioritize protecting the properties of a community's business sector over those of other private property. Such a priority might be a controversial course of action because community leaders are communicating that the business sector takes priority over all other factors such as homes and public property. When viewed through the adaptive resiliency framework, which considers the community's values, goals, and aspirations against the pressures it will face during the recovery processes, this choice may make sense as it provides increased flexibility to support recovery.¹⁵⁷ Practitioners unanimously supported the idea when asked whether placing a higher priority on saving businesses over private property made sense. However, any local leader would be unlikely to make this statement, let alone implement it, so local governance is restricted in its flexibility to execute a policy that would benefit the community as a whole.

Finally, governance can take the appropriate measures to execute reconstructions that provide increased flexibility to the community. Reconstruction efforts provide a community with a short-term economic benefit. However, these measures need to take place before the disaster so that plans are in place and ready for execution. These proactive plans should consider areas that are prone to disasters, such as wildland fires or floods, so that new construction does not begin there or new building codes to mitigate the impact of earthquakes or hurricanes. Efforts like these can also support groups within the community that are less fortunate and may require additional assistance, such as low-income

¹⁵⁶ Sardana and Dasanayaka, "Economic Recovery from Natural Disaster," 386–87.

¹⁵⁷ Drennan, McGowan, and Tiernan, "Integrating Recovery," 83.

populations and the elderly, as opposed to those groups that have the financial capability to rebound from the disaster.¹⁵⁸ Various frameworks or methodologies exist, and full implementation would increase the flexibility of governance to support economic recovery.

b. Standardization

Standardization within the framework of governance is judged as adequate but needs improvement. Within local, state, federal, and tribal governments, organizing programs and procedures with the appropriate elements such as structure, standard operational procedures, and terminology receives significant effort. However, governance does a poor job at disseminating this information to stakeholders who must execute the program or procedure, thereby needlessly complicating the situation. This complication, in turn, impacts the clientele who are required to follow the program or procedure as the lack of knowledge creates an ineffective environment. For example, a survey participant noted that many “areas still struggle with economic recovery. . . . Slow assistance programs, reliance on federal grants or loans, [a] lack of understanding about recovery programs, and their design all contribute.” When stakeholders are confused about the methodology to develop and execute an economic recovery plan, or they are unsure of their roles and responsibilities when it comes to the plan, it confirms a lack of standardization. Having governance create standardized documents or procedures is only a part of the standardization. These elements must bring organizations together to achieve integration, interoperability, and connectivity among different jurisdictions or groups.

In addition to the limited standardization around programs and procedures, a lack of standardization relates to the process used to stabilize the environment so that businesses and the community can return to normal day-to-day activities. As a reminder, academics Stephanie Chang and Adam Rose advocate the idea that economic recovery is a process based on the time and activities that take place *after* the disaster and the results they produce.¹⁵⁹ If that is the case, then establishing a standard post-disaster process to support economic recovery would be beneficial. For example, the process could provide

¹⁵⁸ Edgington, “Viewpoint,” vii.

¹⁵⁹ Chang and Rose, “Towards a Theory of Economic Recovery from Disasters,” 172.

communities with ideas as to where to place their emphasis. This prioritization intends to provide leaders and stakeholders with an understanding of what services are essential, thereby establishing a foundational methodology to support economic recovery. Practitioners surveyed emphasized the need to focus efforts on emergency services, public communications, and water with regards to governmental services, as well as supply chain management, mass communications like phone, TV, and internet, and access to fuel like gas and propane within the business sector. Although each community is slightly different, this standardized information could provide communities with a starting point to initiate economic recovery efforts. As the writer and philosopher Wilferd Peterson once said, “Decision is the spark that ignites action.”¹⁶⁰ Therefore, this list of prioritized services provides community leaders with a process to work from in the confusion of post-disaster recovery if one does not already exist.

c. Unity of Effort

Within the framework of governance, unity of effort is assessed as adequate but needs improvement. For example, although the *National Preparedness Goal* states that the United States will use an “integrated, layered, and all-of-Nation approach,” challenges such as political will at the local level or a lack of effort in placing greater emphasis on the capability restricts a unified effort to support economic recovery efforts.¹⁶¹ Furthermore, participants reported a lack of political will in emphasizing the development of economic recovery plans. Research conducted by Amy Donahue, Catherine Eckel, and Rick Wilson supports this perspective.¹⁶² Their findings show that political officials find it much harder to convince a community to invest in economic recovery and mitigation plans than to seek federal recovery assistance after the disaster strikes.¹⁶³ This acceptance of risk—in other words, allowing resources that are extremely limited to go toward more tangible projects—allows the organization to place a greater emphasis on areas deemed a higher priority. The

¹⁶⁰ Derl Keefer, *Open Doors for Preaching, Teaching, and Public Speaking* (Lima, OH: CSS Publishing Company, 2001), 24.

¹⁶¹ Federal Emergency Management Agency, *National Preparedness Goal*, 1.

¹⁶² Donahue, Eckel, and Wilson, “Ready or Not?,” 93S.

¹⁶³ Donahue, Eckel, and Wilson, 93S.

use of these resources to resolve the communities' immediate issues as opposed to disasters that may not take place for years or, in some cases, not at all is a thorny choice. To be clear, this choice does not represent malfeasance but a business practice that assumes the risk and places its burden on a different level of responsibility. These circumstances, unfortunately, lead to limited unity of effort to ensure plans are established, published, and disseminated to the various stakeholders.

If a disaster does devastate a community, the local government can seek assistance from the state and the federal government to finance repairs through PA programs whereas businesses can seek assistance through the SBA. These programs do represent a certain amount of unity of effort but are reactive. A concerted effort to transition the whole community's business practices, both private and governmental, to a more proactive approach would increase the unity of effort overall. However, until there is greater emphasis on the capability itself or incentives are established to support a proactive approach, such a shift is unlikely. When asked how current federal funding could be redirected to support this emphasis, one participant suggested the development of a BA program. Similar in nature to the IA and PA programs, the BA program would fall under FEMA and would place a greater emphasis on the business sector. The program would increase governance unity of effort two-fold. First, businesses would have to develop and submit mitigation plans to receive the benefits of the program. These plans would meet existing or updated pre-disaster mitigation requirements and reduce the administrative effort on the leeward side of the disaster for local, state, and the federal government.

Second, the program would fall under FEMA, thereby reducing the number of coordinating agencies the community would need to work with while centralizing the post-disaster relief and emergency assistance effort under one organization. The development of a BA program would require a modification to existing legislation because § 312 of the Stafford Act "prohibits recipients of disaster aid from receiving similar types of aid from other federal sources."¹⁶⁴ Also, FEMA would need to ensure it has sufficiently trained individuals with the longevity to support the program. The significant turnover within

¹⁶⁴ Lindsay, *The SBA Disaster Loan Program*, 16.

regional offices is an obstacle in establishing collaborative relationships.¹⁶⁵ Because this would require changes to legislation, along with transitioning from a sequential to a parallel collaboration methodology, such a program might be unfeasible. Overall, the political will and obstacles are impediments to ensuring unity of effort within governance is stronger to support economic recovery. These impediments mean additional analysis is required to determine how government at the local, state, and federal level might increase its capability to support economic recovery through improvements in the unity of effort.

D. SUMMARY

The net assessment demonstrates significant room for improvement in how the United States conducts and supports economic recovery. Table 7 depicts the assessment in a stop-light chart to emphasize it graphically.

Table 7. Stop-Light Chart for Net Assessment

	Flexibility	Standardization	Unity of Effort
NDRF	Adequate but Needs Improvement	Adequate but Needs Improvement	Inadequate
Operational Environment	Adequate but Needs Improvement	Adequate	Inadequate
Governance	Adequate but Needs Improvement	Adequate but Needs Improvement	Adequate but Needs Improvement

Although the NDRF establishes a standardized doctrine to support economic recovery efforts, practitioners neither understand nor follow it. The document also establishes unrealistic objectives that are difficult, and in some instances impossible, for local and state officials to implement. Although programs exist within the operational environment that are designed to provide low-interest loans to businesses, these programs do not provide the resources required in a timely or effective manner. Efforts to resolve these limitations have been unsuccessful. Confusion about programs, processes, and

¹⁶⁵ Dodaro, *Disaster Recovery*, 26.

doctrine, along with a lack of emphasis related to training and fiscal support for the capability, limits the nation's capacity to support economic recovery. A lack of political will and business practices at the local and state levels that assign risk to the federal government all restrict the capability and exacerbate the confusion. Although this assessment provides a pessimistic appraisal, some examples denote that a shift in priorities and funding could produce positive results. FEMA continues to be receptive to constructive criticism and is making improvements to its practices. Efforts between the public and private organizations to establish PPPs continually demonstrate a proactive approach that provides a capability where none exists or it is limited, thereby leveraging capabilities in a unified way. With increased training, funding, and emphasis, along with modifications to existing practices, improvements in economic recovery are possible.

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VI. CONCLUSION

In determining how the United States can improve economic recovery to mitigate the impacts a disaster has on a community, this thesis identified three issues that have hindered the existing capability: limited unity of effort, unrealistic objectives, and a lack of emphasis on economic recovery. The following summary underscores the process of deriving this conclusion.

Unity of effort is limited because institutional knowledge regarding the capability is minimal. For example, the majority of the participants surveyed emphasized the significant lack of knowledge about economic recovery. As all participants listed different ideas of essential elements, stakeholders cannot be working toward a set of common objectives or elements. Although the NDRF provides a list of essential elements for economic recovery, it provides very little content and may be meaningless because not a single participant referenced it when explicitly asked to provide examples. Every participant during the survey expressed the belief that economic recovery is not universally understood throughout all governmental domains and the private sector. Finally, stakeholders rated themselves as having a limited aptitude or proficiency in economic recovery: 30 out of 32 core capabilities.¹⁶⁶ A combination of all these elements supports the conclusion that the unity of effort across domains and within the business sector is minimal. If individuals are not working toward common goals and objectives, or they do not understand how to achieve these objectives, then practitioners and stakeholders are not working together as a collective unit. This assessment means limited resources, such as personnel, funding, or time, are allocated in a scattered and disjointed effort that is producing lackluster results.

Unrealistic objectives also contribute to the existing shortcomings of economic recovery that require improvement. Strong recommendations to local and state jurisdictions to identify and train a local disaster recovery manager, develop a multitude of recovery plans, and enforce the idea that local government has primacy for recovery efforts

¹⁶⁶ Federal Emergency Management Agency, *2018 National Preparedness Report*, 11.

in their community complicate an already nebulous and multi-faceted topic. As the federal government continues to modify and refine its framework from lessons learned, local and state jurisdictions have difficulty keeping up with the changes. Participants expressed limitations, such as time, personnel capacity, and political will, as fundamental reasons why they have no pre-disaster economic recovery plans. The federal government continues to work from the premise that it supports local communities and states when they become overwhelmed, but these jurisdictions are already overwhelmed in keeping up with current demands and changes within the framework. When asked whether their organizations had any programs or procedures related to recovery, participant responses spanned varying degrees of completion and different levels of implementation. A GAO report to Congress reported that 60 percent of states surveyed do not have established recovery plans.¹⁶⁷ In the end, processes and practices regarding economic recovery are ad hoc, do not leverage the full capability within the environment, and do not adequately support the economic recovery of the community.

Finally, a lack of emphasis on economic recovery hampers the nation from building a capability that can meet the needs of the community while supporting a national framework. As discussed in this thesis, the lack of prominence includes efforts to delay the implementation of loan programs such as the EDALP, IDAP, or PDAP.¹⁶⁸ This delay restricts flexible solutions designed to meet the needs of small businesses and demonstrates a lack of priority for economic recovery. The federal government acknowledges it does not have the capacity to provide skilled individuals to assist in training and recovery exercises, thereby demonstrating the lack of will to develop the professional acumen required for success. A continued effort to steer funding toward other capabilities, such as \$300 million to support response capabilities as opposed to only \$5 million for recovery, demonstrates a higher priority for capabilities other than economic recovery.¹⁶⁹ This higher significance is especially interesting because economic recovery has continually been identified as a

¹⁶⁷ Dodaro, *Disaster Recovery*, 31.

¹⁶⁸ Shear, *Steps Needed to Help Ensure More Timely Disaster Assistance*, 39.

¹⁶⁹ Federal Emergency Management Agency, *2018 National Preparedness Report*, 9.

persistent preparedness challenge since 2012.¹⁷⁰ However, little effort seems to be dedicated to investigating this challenge and acting on it. Otherwise, one would expect improvement within the capability.

This thesis concludes that improving unity of effort, establishing realistic objectives, and emphasizing economic recovery would produce positive results. These results would allow the nation to improve its preparedness capability but, more importantly, provide practitioners and stakeholders the tools to support the citizens they serve.

A. RECOMMENDATIONS

The findings and conclusions from this thesis have led to the following recommendations, which could bring about improvements in economic recovery.

- (1) Adopt and publicize a universal definition of economic recovery.
 - This research discovered considerable confusion regarding economic recovery at multiple levels of government and the private sector. Many of the participants expressed this confusion, and the majority supported the idea of establishing a universal definition.
 - Revise the definition of economic recovery. This definition should place more importance on the process by which the community re-establishes the environment. Elements that make up the definition must include the activities that take place after the disaster, the time these actions take, and the results they would produce. This revision will support improvement within the unity of effort.
- (2) Revise essential elements of economic recovery.
 - The findings from the research denote confusion on essential elements of economic recovery.

¹⁷⁰ Federal Emergency Management Agency, 38.

- Modify the existing essential elements, so they nest with the revised definition of economic recovery. These elements include those activities that take place after a disaster such as the re-establishment of critical government and business-sector services. This research provided a recommended priority list as a starting point. This revision will improve unity of effort
- (3) Determine the limits of implementing SBA loan programs.
- The research determined that the SBA has not fully implemented the EDALP, IDAP, or PDAP.
 - The overall recommendation is to implement these programs to support local businesses following a disaster. However, further insight will help determine why they are not fully utilized to date. Their implementation not only provides the fiscal support required to get them back on their feet promptly but also demonstrates a greater emphasis on economic recovery.
- (4) Increase training opportunities for economic recovery.
- The findings demonstrate a lack of training in the recovery framework, which affects the economic recovery capability. These findings also highlight a lack of skilled individuals who have the expertise and knowledge to provide this training.
 - To support training opportunities, a re-direction of funds that support other mission areas or capabilities within FEMA is appropriate. These funds could support educational efforts, thereby ensuring practitioners are trained on the elements of the NDRF, the revised definition, and the revised essential elements. Training builds knowledge, thereby drawing everyone to work toward the same goals and objectives. This process will improve unity of effort and demonstrate a more significant emphasis on economic recovery.
- (5) Establish pre-disaster funding as a part of a mandated economic recovery plan.
- The research determined that economic recovery is a persistent problem in that practitioners do not have the time or resources to develop plans.

- Establish a specific amount of pre-disaster funding solely to support the development of economic recovery plans. For example, apply \$75 million of the \$350 million spent on the planning capability in 2017 to this effort. These funds would enable jurisdictions to overcome existing impediments, such as personnel who have limited knowledge or skill sets to develop these plans. These funds must be explicitly tied to the creation and dissemination of the plans developed for the community. These funds will provide resources to meet the objective of having pre-disaster plans and place a greater emphasis on economic recovery.
- (6) Conduct additional research on economic recovery.
- This research on economic recovery is not representative of the entire body of practitioners and stakeholders. It also found quite limited research on the topic.
 - A recommendation to mitigate this issue is to have other institutions, such as universities, IAEM, or NEMA, conduct a more robust study. Effort should go toward determining how to create unity of effort, followed by what constitutes realistic expectations of local and state jurisdictions and stakeholders. This research will improve unity of effort and successfully achieve a greater emphasis on economic recovery.

B. CONCLUSION

While the implementation of these recommendations will not solve all of the issues related to economic recovery, they are a step in a new direction. A universal definition for economic recovery, revisions of the essential elements, and training will support initial efforts to improve unity of effort—economic recovery’s most pressing issue, according to the paper’s overall assessment. The implementation of the EDALP, IDAP, and PDAP or, at a minimum, a detailed review as to why they are not fully implemented or utilized along with designated pre-disaster funding will provide the fiscal capability required to support the efforts of the private sector to re-open. These efforts, along with a continued emphasis on researching and investigating alternative economic recovery methods, will provide the capabilities needed to mitigate the effects of a disaster and bring about improvement in economic recovery.

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APPENDIX A. EMAIL INVITATION TO PARTICIPANTS

To: _____

Subject: Thesis research - Building Community Capacity & Resilience through Improvements in Economic Recovery

I am in a Department of Homeland Security Master's program at the Naval Postgraduate School in Monterey, CA. I am requesting that you participate in a Delphi survey that I am conducting for my thesis. My thesis is exploring how to improve economic recovery to mitigate the impacts a disaster has on a community.

The survey will consist of two rounds of questions, each round taking approximately 30 minutes to complete. I will keep your responses anonymous and only my advisor and myself will have access to the raw data. Individual responses will be aggregated and reported in a way that will allow your individual response to remain confidential and anonymous.

If you are willing to participate, please continue with the survey below. Please read the first question that serves as a consent form. It describes your protections in participating in this voluntary study. I would appreciate it if you could complete this survey within the next two weeks. <link to be published>

If you have any questions about what this would entail, please call or email me.

Thank you for your time.

Kevin D. McMahan

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APPENDIX B. NPS CONSENT TO PARTICIPATE: SECOND SURVEY

Introduction. You are invited to continue your participation in a research study entitled Building Community Capacity & Resilience through Improvements in Economic Recovery. The purpose of the research is to improve economic recovery to mitigate the impacts a disaster has on a community.

Participation is voluntary. Refusal to participate will involve no penalty or loss of benefits to which you would otherwise be entitled, and you may discontinue participation at any time without penalty or loss of benefits to which you otherwise would be entitled.

The purpose of the research is to determine how we can improve economic recovery to mitigate the impacts a disaster has on a community. The expected duration of the survey is 30 minutes.

- There is a possible risk of a breach of confidentiality.
- There is no direct benefit for a participant. This research will provide potential benefits to Department of Navy and DoD.
- The alternative of participation is not to participate.

Procedures. If you agree to participate in this study, you will be asked 12 survey questions. The survey is expected to take less than 30 minutes and will be performed by individuals from government, non-governmental, and business organizations. A total of 14 participants will take part in the study. Participants are not audio- or video-recorded since the study is conducted via a survey. Survey questions are answered anonymously, and results are maintained by the Naval Postgraduate School. Personal information, such as names and email addresses, are for recruitment purposes only and will not be stored with survey data. This information will be deleted when the research is complete; however, there is always the possible risk of a breach of confidentiality.

Location. Online using Lime Survey.

Cost. There is no cost to participate in this research study.

Compensation for Participation. No tangible compensation will be given.

Points of Contact. If you have any questions or comments about the research, or you experience an injury or have questions about any discomfort that you experience while taking part in this study, please contact the principal investigator, Mr. Glen Woodbury, at (831) 656-3038 or glwoodbu@nps.edu. Questions about your rights as a research subject or any other concerns may be addressed to the Navy Postgraduate School's IRB Chair, Dr. Larry Shattuck, at 831-656-2473 or lgshattu@nps.edu.

Statement of Consent. I have read the information provided above. I have been given the opportunity to ask questions, and all the questions have been answered to my satisfaction. I have been provided a copy of this form for my records, and I agree to participate in this study. I understand that by agreeing to participate in this research I do not waive any of my legal rights and that the first question of the survey will serve as the consent form. If I check “no” on the consent question, the survey will end. If I check “yes,” the survey will begin.

APPENDIX C. DELPHI SURVEY FIRST-ROUND QUESTIONS

Research Question: How do we **improve** economic recovery in order to mitigate the impacts a disaster has on a community?

1. How would you characterize your area of expertise?
 - 1 (Emergency management)
 - 2 (Policy and governance)
 - 3 (Public safety)
 - 4 (Entrepreneurship or business management)
 - 5 (Other—Please explain)
2. How would you categorize your organization?
 - 1 (Federal government)
 - 2 (State government)
 - 3 (County or local government)
 - 4 (Business sector)
 - 5 (Non-governmental organization)
 - 6 (Other—Please explain)
3. In your own words, please provide a description of disaster economic recovery. What are its essential elements?
4. Does your organization have any programs or procedures that address these elements during mitigation, response, or recovery? Please explain what these programs or procedures are and how they work.
5. How do you or will you measure the success of these programs?
6. In your opinion, is disaster economic recovery universally understood within all levels of government and the business sector? Meaning, does everyone rationalize disaster economic recovery from the same perspectives? Please explain.

7. Rank the top three organizations responsible for disaster economic recovery:
- Federal government
 - State government
 - County and/or local government
 - Individual citizen
 - Business sector
 - Non-governmental organizations
 - Equal responsibility between the federal government and business sector
 - Equal responsibility between the state government and business sector
 - Equal responsibility between the county/local government and business sector
8. What recommendations would you make to the lead agency for disaster economic recovery to bring about improvement? Please explain.
9. From your perspective, what should be the primary focus of disaster economic recovery?
- 1 (Focused on alleviating direct losses, those losses one can point to and calculate an immediate loss of capital like goods, services, and assets of the small business)
 - 2 (Focused on alleviating indirect losses, those losses caused by the after-effects of the disaster like unemployment or lower property values)
 - 3 (Focused on government activities that take place after the disaster like debris removal and critical infrastructure repair, the time it takes, and the results this process bears)
 - 4 (Focused on the damage suffered by small business, the effectiveness of government-managed programs, and the extent to which businesses used these programs)
 - 5 (Unsure of emphasis)
 - 6 (Other, please explain)
10. How involved are the following organizations in the development of disaster economic recovery plans? Use the following scale: 1 (very involved), 2 (moderately involved), 3 (limited involvement), 4 (not involved), or 5 (unsure).
- Federal government
 - State government
 - County and/or local government
 - Individual citizen
 - Business sector
 - Non-governmental organizations
11. In your opinion, do individuals responsible for disaster economic recovery have the skills, training, and knowledge required to ensure success? Please explain.

12. In your own words, list three skills, training, and knowledge elements an individual responsible for disaster economic recovery should have.

13. What is the estimated size of your customer base? For the purpose of this question, if you work for the government, how many citizens do you support, and if in business, how many physical customers do you have?

1 (0 to 999)

2 (1,000 to 19,999)

3 (20,000 to 99,999)

4 (100,000 to 299,999)

5 (More than 300,000)

Thank you for contributing to this research.

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APPENDIX D. DELPHI SURVEY SECOND-ROUND QUESTIONS

Research Question: How do we **improve** economic recovery in order to mitigate the impacts a disaster has on a community?

1. How would you categorize your organization?
 - Federal government
 - State government
 - County or local government
 - Business sector
 - Non-governmental organization
 - Other—Please explain

2. Please rank-order the following government services from most important to least important regarding their importance in achieving economic recovery goals and success following a disaster.
 - Freedom of movement: Access to roads, debris removal, bridge inspection, etc.
 - Inspections: Health, building, etc.
 - Water
 - Transportation: Buses, subways, etc.
 - Schools
 - Public communication: Status/availability of services and resources
 - Electrical
 - Emergency services
 - Other—Explain

3. Would the development of a universal definition for disaster *economic recovery* be a benefit or distractor in bringing about improvements in knowledge, capability, and unity of effort? Please explain your response.

4. If the federal government redirected existing grants or established new ones specifically focused on economic recovery, what should these funds go toward? Please explain your response.

5. Please describe the most important thing a practitioner must know/comprehend to bring about improvements in economic recovery. Please explain your answer.

6. Please rank-order the following business sector services from most important to least important to help other businesses get back up and running following a disaster.

Fiscal institutions

Communications: Phone, print, internet service, TV, radio, etc.

Nourishment: Groceries, restaurants, etc.

Accommodation: Lodging, short-term shelters, long-term housing

Fuel: Gas stations, propane

Major retailers: Home Depot, Lowes, Target, etc.

Shipping: UPS, FedEx

Medical: Hospitals, pharmacy, dialysis, etc.

Supply chains: Distributors, suppliers, etc.

Other

7. Do you believe there is value in establishing priorities at the local level that place a higher priority on saving business over private property? For example, a community fire department is told to protect the businesses of a community before or instead of homes during wildland fires. Please explain your answer.
8. What changes, if any, would you make to the Stafford Disaster Relief and Emergency Assistance Act that would help a community focus on businesses in ways that are currently prohibited?
9. If your organization does not have an economic recovery plan, or the plan took a lengthy time to develop, what is/was the primary reason for the delay in creating one? Please explain your answer.
10. Please provide a definition of a non-governmental organization, offer examples of the resources they provide specific to disaster economic recovery, and provide the names of NGOs that provide this resource.
11. Please provide an example of a public-private partnership that was successful in economic recovery. What were the attributes that made it a success?
12. Please provide three metrics and an explanation for each that practitioners and leaders could use to help measure the success of an economic recovery program.

Thank you for contributing to this research.

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