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**IDENTIFYING EFFECTIVE LOCAL EMERGENCY
MANAGEMENT PROGRAMS THROUGH
COLLABORATIVE CAPACITY**

Mireles, Dominick

Monterey, CA; Naval Postgraduate School

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**NAVAL
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MONTEREY, CALIFORNIA

THESIS

**IDENTIFYING EFFECTIVE LOCAL
EMERGENCY MANAGEMENT PROGRAMS
THROUGH COLLABORATIVE CAPACITY**

by

Dominick Mireles

March 2024

Co-Advisors:

Lauren S. Fernandez (contractor)
Mitchell Friedman

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REPORT DOCUMENTATION PAGE			<i>Form Approved OMB No. 0704-0188</i>
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington, DC, 20503.			
1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE March 2024	3. REPORT TYPE AND DATES COVERED Master's thesis	
4. TITLE AND SUBTITLE IDENTIFYING EFFECTIVE LOCAL EMERGENCY MANAGEMENT PROGRAMS THROUGH COLLABORATIVE CAPACITY		5. FUNDING NUMBERS	
6. AUTHOR(S) Dominick Mireles			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000		8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A		10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.			
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release. Distribution is unlimited.		12b. DISTRIBUTION CODE A	
13. ABSTRACT (maximum 200 words) Local emergency management is implemented differently in individual cities and states across the United States. After-action reports continue to document deficiencies and areas for improvement after major incidents, thus raising the question of what makes local emergency management effective. One indicator of effectiveness is a high level of collaboration. This author engaged nine of the most populated U.S. cities through an Interagency Collaborative Capacity Assessment (ICCA) survey to identify characteristics of the most collaborative agencies. The thesis examines the survey results in the context of staffing, organization, accreditation and standards, and experience to identify commonalities of these agencies and create a blueprint for building effective, collaborative local emergency management agencies. From its findings, this thesis offers recommendations across these four areas to advance the understanding of collaboration and the field of local emergency management as a whole.			
14. SUBJECT TERMS local emergency management, interorganizational collaborative capacity, ICC		15. NUMBER OF PAGES 115	
		16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UU

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)
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**IDENTIFYING EFFECTIVE LOCAL EMERGENCY MANAGEMENT
PROGRAMS THROUGH COLLABORATIVE CAPACITY**

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Submitted in partial fulfillment of the
requirements for the degree of

**MASTER OF ARTS IN SECURITY STUDIES
(HOMELAND SECURITY AND DEFENSE)**

from the

**NAVAL POSTGRADUATE SCHOOL
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ABSTRACT

Local emergency management is implemented differently in individual cities and states across the United States. After-action reports continue to document deficiencies and areas for improvement after major incidents, thus raising the question of what makes local emergency management effective. One indicator of effectiveness is a high level of collaboration. This author engaged nine of the most populated U.S. cities through an Interagency Collaborative Capacity Assessment (ICCA) survey to identify characteristics of the most collaborative agencies. The thesis examines the survey results in the context of staffing, organization, accreditation and standards, and experience to identify commonalities of these agencies and create a blueprint for building effective, collaborative local emergency management agencies. From its findings, this thesis offers recommendations across these four areas to advance the understanding of collaboration and the field of local emergency management as a whole.

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LIST OF ACRONYMS AND ABBREVIATIONS

AAR	after-action review
CRS	Community Rating System
DHS	Department of Homeland Security
EMAC	Emergency Management Assistance Compact
EMAP	Emergency Management Accreditation Program
EOC	emergency operations center
FEMA	Federal Emergency Management Agency
FRA	Federal Rail Administration
ICCA	Interorganizational Collaborative Capacity Assessment
IP	improvement plan
NFPA	National Fire Protection Association
SPR	Stakeholder Preparedness Review
THIRA	Threat and Hazard Identification and Risk Assessment
UASI	Urban Area Security Initiative

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EXECUTIVE SUMMARY

Disasters are occurring more frequently. Dealing with these disasters and other daily emergencies largely falls to local emergency management agencies through planning, organization, equipment, training, and exercises. Nevertheless, after-action reports and corrective actions indicate that local efforts to manage these events remain insufficient, resulting in fatalities, public embarrassment, the termination of leaders, lawsuits, and long-term socioeconomic impacts.

The Federal Emergency Management Agency (FEMA) establishes doctrine for the entire emergency management enterprise, and local jurisdictions translate that doctrine into individual efforts and approaches. FEMA has developed standards and communicated efforts through the Threat and Hazard Identification and Risk Assessment/Stakeholder Preparedness Review (THIRA/SPR), and the independent non-profit Emergency Management Accreditation Program (EMAP) has defined other standards. Despite these standards and assessments, what makes local emergency management effective is largely unknown.

In the business world, studies have shown that high collaboration is closely tied to effectiveness.¹ Given this correlation in the business realm, researchers and practitioners could identify the most effective local emergency management agencies to understand what contributes to their collaborative capacity. Collaboration in emergency management involves elements from every level and necessary function of government, private industry, non-profit organizations, and individuals working around a shared goal or problem, at times during extreme crisis, through reliance on shared information and trust.

By measuring collaborative capacity, this thesis sought to answer two questions: (1) What are the characteristics of the most collaborative local emergency management programs? (2) To what extent do staffing, structure, experience with disasters, governmental organization, accreditation, and other factors influence collaboration and,

¹ Jay Jamrog et al., *Purposeful Collaboration: The Essential Components of Collaborative Cultures* (Seattle: Institute for Corporate Productivity, 2017).

thus, effectiveness? To answer these questions, this author employed a survey based on the Interorganizational Collaborative Capacity Assessment (ICCA) to quantify agencies' collaboration. The emergency management agencies of the 21 most populated U.S. cities were invited to participate in an online survey that captured responses to Likert-scale questions along with open-ended context and demographic questions tailored for this thesis.

The ICCA was originally developed at the Naval Postgraduate School and validated with a test group consisting of homeland security and defense contracting and acquisition professionals. The ICCA asks 52 questions, divided into 13 factors and grouped into 5 domains—purpose and strategy, structure, incentives and reward systems, people, and lateral mechanisms. This author adapted the ICCA for this thesis by adding questions about staffing, organization, accreditation and standards, and experience.

Survey responses were collected from nine participants representing city emergency management agencies among the top 21 most populated U.S. cities. The collected responses from November and December 2020 provide insight into big-city emergency management and offer a foundation for further investigation. Additionally, the survey affirmed findings from the first use of the ICCA, particularly that organizations assigned the highest rating to feeling the need to collaborate and the lowest rating to the use of metrics for collaboration, among the factors presented.

The primary finding of the survey was that big-city emergency management agencies, despite many similarities, were resourced, organized, and implemented differently across the survey participants. These differences involved staffing, emergency management's placement in the organizational hierarchy, the operational elements used to accomplish their work (e.g., watch desks, on-call teams, or duty officers), their Urban Area Security Initiative (UASI) standing, their accreditation status, and disaster experience at the individual and organizational level. In sum, the big cities surveyed followed no template for local emergency management.

To better understand how staffing, organization, accreditation and standards, and experience influence collaboration, this author examined these practices in emergency

management and other professions. First, as collaboration predominantly involves individual actors between entities, the staff requires the capacity to collaborate. Survey respondents revealed three primary variables in their staffing decisions: available budget, fundamental elements of the emergency management field, and the local threats and hazards. Thus, this author investigated how staffing models might be developed for emergency management. Second, organization largely focuses on where the agency lies in the jurisdiction's organizational chart and how the agency is structured internally. Thus, organization can have a real and perceived influence on how agencies work. This author explored whether the participating agencies were part of other larger departments or stand-alone agencies, how the agencies interacted with their designated UASI, and what operational capacity they had to work with other organizations. Third, recognizing that accreditation and standards bring about uniformity and performance expectations, the agencies' experience with EMAP and the application of FEMA's THIRA/SPR were contrasted with the participation of similar efforts in other professions. Finally, acknowledging that focusing events often lead to opportunities for learning and a window for policy change, the agencies' experience with disasters was investigated. Given that actual disasters are not preferred, though real-world experience is invaluable, ways to increase this experience were explored.

The thesis makes nine recommendations based on the survey responses and additional inquiry into staffing, organization, accreditation and standards, and experience:

1. Develop a staffing model that accounts for proactive and reactive tasks.
2. Create goals and metrics for staff collaboration.
3. Assess the strengths and weaknesses of local emergency management situated as an independent organization, executive office, public safety, police, or fire entity.
4. Measure the effectiveness of UASI areas compared to non-UASI areas—including whether UASIs are best organized as fiscal, preparedness, or operational entities.

5. Identify the indicators that warrant different operational emergency management elements and their optimal organization, including on-call teams, duty officers, watch desks, and dedicated responders.
6. Through FEMA's continuous improvement guidance, derive quantifiable variables specific to collaboration and require after-action activities during declared disasters.
7. Package the ICCA in a way that helps emergency management programs plan strategically or conduct continuous improvement activities.
8. Develop an incentive plan for the adoption of accreditation and standards through FEMA's preparedness grants or an insurance premium program similar to FEMA's Community Rating System and the Insurance Services Office's rating systems.
9. Assess programs like FEMA's Emergency Manager Exchange or deployment opportunities with voluntary agencies active in disaster for their ability to provide critical experience for local emergency management organizations and their staff.

Traditional emergency management risks are intensifying, emergency management's involvement in human and social issues is increasing, the world is becoming more globally connected and dependent, and scientific frontiers are expanding. Given these elements of an ever-riskier world, identifying the elements of successful local emergency management is imperative for their broader, more effective implementation across the enterprise.

ACKNOWLEDGMENTS

Participation in this program has been one of the greatest honors and achievements of my career.

I owe my success with this project to many people. My colleagues and leadership with the city of Philadelphia afforded me an incredible opportunity to participate and supported me in so many ways throughout the process. My advisors, the faculty, and staff of the Center for Homeland Defense and Security have been unbelievably supportive and patient throughout the entire process. Dr. Lauren Fernandez and Dr. Mitchell Friedman have been visionary, encouraging, and meticulous, both with incredible grace. My peers made sure to check in along the way and demonstrated the ability to be professionals, students, and individuals simultaneously. Last, but certainly not least, I thank my family, particularly my wife, Kathryn, who made sure that completing this project was the only option. Kathryn's dedication to this project was as strong as mine, and I appreciate the sacrifices and support she offered along the way.

This project is dedicated to those in my life who I lost along the journey but were so incredibly proud of my pursuits—CM, PM, and RC—and to those who fortunately joined my life along the way—JM and BGM. I draw my “why” from these people. It is in their honor that I dedicate myself to this work and to those I have the opportunity to serve.

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I. INTRODUCTION

A review of annual presidential and major disaster declarations from 1970 to 2019 indicates that despite fluctuations year to year, the United States is trending toward a higher incidence of disasters overall. As shown in Figure 1, a steady increase in disaster declarations, from 19 in 1970 to 101 in 2019, means more death, more destruction, and higher costs every year. Of the 3,250 disasters declared from 1980 to 2017 in the United States, 219 individually cost \$1 billion or more, and together, they cost over \$1.9 trillion.¹ Nevertheless, natural disasters are not the only events to threaten life and property. Technological disasters such as bridge collapses and aging infrastructure for transporting and storing hazardous chemicals loom large. Likewise, human-made threats such as terrorist attacks on public events, houses of worship, gathering places, and computer systems, as well as public health emergencies, also wreak havoc.

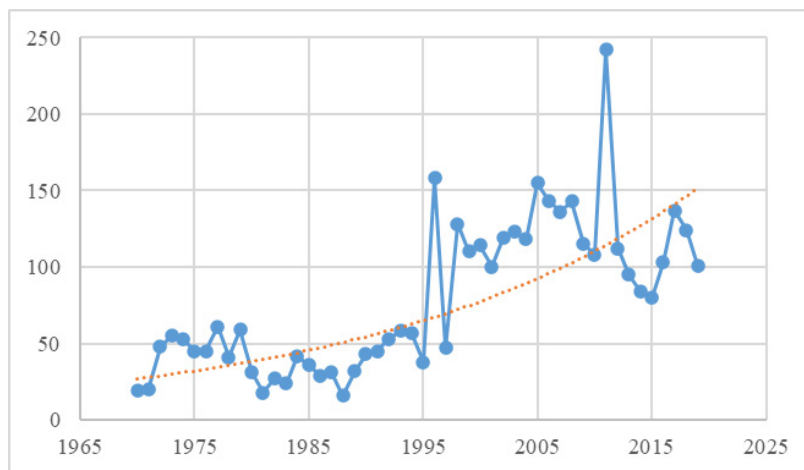


Figure 1. Federally Declared Disasters, 1907–2019.²

¹ “Disaster Information,” Federal Emergency Management Agency, accessed December 31, 2019, <https://www.fema.gov/disasters>; Adam B. Smith, “2017 U.S. Billion-Dollar Weather and Climate Disasters: A Historic Year in Context,” Climate.gov, January 8, 2018, <https://www.climate.gov/news-features/blogs/beyond-data/2017-us-billion-dollar-weather-and-climate-disasters-historic-year>.

² Source: Adapted from “Disaster Declarations for States and Counties,” Federal Emergency Management Agency, March 9, 2023, <https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties>.

A nimble and robust incident preparedness, prevention, mitigation, response, and recovery strategy is paramount to protecting the U.S. homeland in the face of these many challenges. Despite the many involved parties from the government, non-profit, private, and academic sectors, local government bears the primary responsibility in coordinating stakeholders for most disasters. More specifically, county and municipal emergency management agencies are the hubs of coordination and communication between all sectors. Local emergency management realizes this strategy through planning, organization, equipment, training, and exercises. Executing the strategy successfully requires sufficient experienced and qualified staff well-organized to address the disaster before it happens.

Yet, local emergency management continues to come up short in preparedness for the broad range of incidents that threaten jurisdictions. The number of corrective actions cited at the conclusion of such events highlights this preparedness gap, as demonstrated in numerous case studies.³ The results of these failures range from public embarrassment and termination of leaders, to expensive lawsuits, to the loss of life and significant lasting socioeconomic impacts.

Local emergency management agencies continue to demonstrate shortcomings, as indicated by the frequency of scathing after-action reports and detailed improvement plans. For example, the 2017 Tubbs Fire response in Sonoma County, California, was largely criticized for the lack of public warning, and sadly, the 2023 Lahaina Fire in Maui County, Hawaii, received almost identical criticism.⁴ Whether the root of such failures lies in an experience problem, a staffing challenge, or some other organizational shortcoming remains unclear, but these deficiencies persist.

³ Kip Harkness, “2017 City Council Special Study Session on the Status of Emergency Management in the City of San Jose” (official memorandum, San Jose, CA: City of San Jose, 2017), https://sanjose.granicus.com/MetaViewer.php?view_id=52&clip_id=10100&meta_id=696524; Hannah Beausang, “Sonoma County to Overhaul Emergency Management Program following Wildfires,” *Press Democrat*, August 14, 2018, <https://www.pressdemocrat.com/news/8634656-181/sonoma-county-to-overhaul-emergency>.

⁴ Rebecca Boone, Jennifer Sinco Kelleher, and Audrey McAvoy, “In Deadly Maui Wildfires, Communication Failed. Chaos Overtook Lahaina along with the Flames,” Associated Press, August 15, 2023, <https://apnews.com/article/hawaii-lahaina-wildfire-warnings-sirens-chaos-f4bb9bb77c093ac8ff16440b54ade4a6>; “Lahaina Wildfire Timeline,” Associated Press, accessed January 26, 2024, <https://interactives.ap.org/hawaii-timeline/>.

The Federal Emergency Management Agency (FEMA) has crafted emergency management doctrine that identifies the core capabilities often required for federal funding.⁵ However, local agencies individually translate these core capabilities into functions depending on the influence, or lack, of political will, funding, or experience. Standardized approaches, such as FEMA’s Threat and Hazard Identification and Risk Assessment/Stakeholder’s Preparedness Review (THIRA/SPR) or standards set by the independent non-profit Emergency Management Accreditation Program (EMAP), require that the end users analyze risks and define desired outcomes, a challenge further discussed in Chapter IV. Moreover, although jurisdictions might tailor their efforts to local threats and hazards based on these universal standards, they could just as easily exclude some threats or hazards from these assessments.

What makes local emergency management agencies effective is only partially known, but the business world has correlated effectiveness, or productivity, with collaboration.⁶ If high collaboration is an indicator of effectiveness for the business realm, this principle can be applied to emergency management. To this end, this thesis explores the aspects of collaboration that contribute to the most effective local emergency management organizations.

While literature on the private sector considers the range of factors critical to successful collaboration, emergency management lacks a clear blueprint for what drives collaboration at the local level. Does experience increase collaboration? Does having an adequate number of staff produce positive outcomes? By answering these questions, among others, this thesis lays the groundwork for a model of highly collaborative—and thus effective—organizations, based on similar municipal populations, climates, and threats and hazards, as a standard for effectiveness.

⁵ “Mission Areas and Core Capabilities,” Federal Emergency Management Agency, July 20, 2020, <https://www.fema.gov/core-capabilities>; “National Risk and Capability Assessment,” Federal Emergency Management Agency, June 12, 2023, <https://www.fema.gov/threat-and-hazard-identification-and-risk-assessment>.

⁶ Jay Jamrog et al., *Purposeful Collaboration: The Essential Components of Collaborative Cultures* (Seattle: Institute for Corporate Productivity, 2017).

The verb *collaborate*, according to *Merriam-Webster*, means “to work jointly with others or together especially in an intellectual endeavor.”⁷ While this definition is straightforward and widely accepted, this thesis needs a definition of collaboration within the emergency management context. The definition should have elements of a “who” and “what.” Researcher Kaiju Chang’s study of local emergency management collaboration supplies the actors in the definition: “local governments [creating] a long-term relationship with other public agencies, private companies, or non-profit organizations.”⁸ Regarding why these entities coalesce, Thomas Currao references a “shared goal” and Chang identifies “[solving] problems that an organization on its own cannot solve, or will have a difficult time solving.”⁹

How entities build trust and share information is also defined in the literature on collaboration. Currao adopts a concept of “swift trust” as fundamental to collaboration “so that all participants perceive that they belong to a temporary team and have a shared goal.”¹⁰ Furthermore, in studying the response to the 9/11 terrorist attacks, Louise Comfort posits that “achieving coordinated action among a disparate group of actors depends fundamentally on their access to timely, valid information and their ability to engage in information search, exchange, absorption, and adaptation.”¹¹ According to Comfort, this informational exchange requires a technical structure, organizational policies and procedures, and cultural openness.¹²

⁷ *Merriam-Webster*, s.v. “collaboration,” accessed January 24, 2024, <https://www.merriam-webster.com/dictionary/collaboration>.

⁸ Kaiju Chang, “Exploring the Dynamics of Local Emergency Management Collaboration in the United States,” *EurAmerica* 48, no. 1 (March 2018): 6, https://www.ea.sinica.edu.tw/allQuarterly_main.aspx?QSID=394.

⁹ Thomas J. Currao, “A New Role for Emergency Management: Fostering Trust to Enhance Collaboration in Complex Adaptive Emergency Response Systems” (master’s thesis, Naval Postgraduate School, 2009), 6, <https://hdl.handle.net/10945/4460>; Chang, “Local Emergency Management Collaboration,” 6.

¹⁰ Currao, “A New Role for Emergency Management,” 6.

¹¹ Louise K. Comfort, “Managing Intergovernmental Responses to Terrorism and Other Extreme Events,” *Publius* 32, no. 4 (2002): 30, <https://www.jstor.org/stable/3331025>.

¹² Comfort, 30.

Drawing on the literature, collaboration in emergency management incorporates elements from every level and necessary function of government, private industry, non-profit organizations, and individuals working around a shared goal or problem, at times during extreme crisis, through a reliance on shared information and trust. Using collaborative capacity as an indicator, this thesis seeks to identify the most collaborative local emergency management agencies and understand what elements contribute to their collaborative capacity.

A. RESEARCH QUESTION AND SUB-QUESTIONS

Primary research question:

1. What are the characteristics of the most collaborative local emergency management programs?

Secondary research questions:

2. Of the 21 most populated U.S. cities, which are more effective as measured by collaborative capacity?
3. What can other agencies learn from more-collaborative programs to make their program more effective?
4. To what extent do staffing, structure, experience with disasters, governmental organization, accreditation, and other factors influence collaboration and, thus, effectiveness?

B. EMERGENCY MANAGEMENT BACKGROUND

EMAP defines an emergency management program as “a jurisdiction-wide system that provides for management and coordination of prevention, mitigation, preparedness, response, and recovery activities for all hazards. The system encompasses all organizations, agencies, departments, entities, and individuals responsible for emergency

management and homeland security for that jurisdiction.”¹³ A contemporary local emergency manager’s time might be spent preparing a tabletop exercise for an upcoming presidential election, coordinating with local and state public health authorities on a COVID-19 outbreak in a long-term care facility, and negotiating with state and federal emergency management officials about bringing financial resources through a disaster declaration to recent victims of hurricane-caused flooding. The work is varied. The pace is rigorous. The margin of error is slim.

Public emergency management programs are active at three levels: federal, state, and local or tribal. Nevertheless, as Tom Ridge, the first secretary of homeland security, pointed out, all disaster response is local.¹⁴ This sentiment has been the “push” from federal agencies, essentially laying the majority of responsibility on local jurisdictions for myriad adverse events. This idea, starting in the early days of the Department of Homeland Security (DHS), persists in today’s administration. Regarding the 2018 hurricane season, for example, President Trump, backed by then-FEMA Administrator Brock Long, stated, “Disaster response and recovery is best achieved when it’s federally supported, state-managed, and locally executed.”¹⁵ Federal guidance has long been that while federal and state entities have roles to play, the lion’s share of responsibility for managing any adverse event begins and ends with the local jurisdiction.

C. RELEVANCE OF THIS RESEARCH

Heavy is the burden on emergency managers, specifically at the local level and particularly today. With so much responsibility placed on a critical function of government, academic research is of the utmost importance as agency heads and elected officials seek proven guidance for program organization. With vanilla guidance along the lines of “have a plan,” “collaborate,” or “measure outcomes,” a clear-cut roadmap is unavailable based

¹³ “Home Page,” Emergency Management Accreditation Program, accessed February 23, 2020, <https://emap.org/>.

¹⁴ Thomas J. Ridge and Lary Bloom, *The Test of Our Times: America under Siege . . . and How We Can Be Safe Again* (New York: Thomas Dunne Books, 2009), 175.

¹⁵ “Remarks by President Trump at 2018 Hurricane Briefing,” White House of Donald J. Trump, June 6, 2018, <https://trumpwhitehouse.archives.gov/briefings-statements/remarks-president-trump-2018-hurricane-briefing-3/>.

on existing data. Frustration over this lack of guidance is more salient as funding becomes tighter and disaster events increase. The age-old problem of doing more with less is most pertinent to the emergency management field for the time being. This thesis explores how current methods employed by local jurisdictions can contribute to the guidance needed at the local level.

It is the hope that this research will inspire others and illuminate areas for further inquiry. Perhaps, future researchers will develop risk-based staffing models for jurisdictions to follow, or researchers will answer the question about whether emergency management is a law enforcement, fire service, or an independent function. Research may weigh in on whether accreditation programs are worth their cost and effort or whether DHS's current threat assessment process and its relation to funding are hitting the mark in preparing the nation for all hazards. This research hopefully identifies a path forward for local emergency management program development and management.

D. LITERATURE REVIEW

The primary research question focuses on collaboration, a subject uncovered after toiling to define what makes a local emergency management program effective. Effectiveness is difficult to define in emergency management. Unlike other spheres of government where success might be evident (e.g., crime reduction, constituent satisfaction surveys, or on-time refuse collection), there is no good measure for emergency management. This is largely due to emergency management's significant investment of time in the preparedness phase. That is, it requires preparing plans and resources for what-if scenarios. Further, a jurisdiction would prefer not to test those scenarios in the real world as it would likely mean the loss of life or destruction of property. But it is impossible to know whether those preparedness activities are effective without a test—akin to questioning the worth of car insurance if one never has an accident.

Ultimately, tests do occur. Jurisdictions frequently face adverse events small and large. Many of these events culminate in a post-event after-action review (AAR), many of which highlight where the response, predicated on preparedness, went wrong. As detailed by disability rights advocates, following New York City's Hurricane Sandy response, the

U.S. District Court for the Southern District of New York “found that the evacuation plan for the City of New York failed to accommodate the needs of persons with disabilities in regard to evacuation and accessible transportation.”¹⁶ Among the changes resulting from the lawsuit, the city hired a disability and access and functional needs coordinator to account for these considerations in all planning efforts. In San Jose, California, after the 2017 flooding of Coyote Creek, the AAR prepared for the mayor and city council admitted

the City was unnecessarily caught off guard when the flooding occurred, placing residents in a potentially dangerous situation. . . . Furthermore, the City was imperfect in its early communications, leaving residents unaware of the potential for flooding and confused once the incident began, and faced challenges in disseminating critical information quickly and broadly in multiple languages.¹⁷

To address these issues, the AAR identified six actions for improvement: (1) strengthen emergency management’s organizational structure; (2) improve emergency planning; (3) complete flood recovery; (4) prepare for the next rainy season; (5) enhance key capabilities; and (6) increase coordination. As related to this thesis, one of the AAR’s recommendations was to increase staffing at the San Jose Office of Emergency Management from 9 to 23 personnel.¹⁸ With calls in the report for better preparedness and enhanced coordination, there well could be a correlation to the recommendation of tripling the size of the agency charged with that work. In a final example, Sonoma County, California, received the following overhaul after its response to the 2017 Tubbs Fire. According to an article in Sonoma’s *Press Democrat*, “The emergency services division—broadly denounced for its failure to issue widespread alerts as the Tubbs fire raced toward Santa Rosa—[would] be reorganized into an independent department with its own leader.”¹⁹ In addition to planning and equipment capability enhancements, five staff were added with the following

¹⁶ “Brooklyn Center for Independence of the Disabled (BCID) et al. v. Mayor Bloomberg et al.,” Disability Rights Advocates, accessed February 24, 2020, <https://dralegal.org/case/brooklyn-center-for-independence-of-the-disabled-bcid-et-al-v-mayor-bloomberg-et-al/>.

¹⁷ Witt O’Brien’s, *2017 Coyote Creek Flood After Action Review & Improvement Recommendations Report* (San Jose, CA: City of San Jose, 2017), i, http://sanjose.granicus.com/MetaViewer.php?view_id=&event_id=2696&meta_id=646447.

¹⁸ Harkness, “Status of Emergency Management in the City of San Jose,” 1.

¹⁹ Beausang, “Sonoma County to Overhaul Emergency Management Program.”

functions: a director, two staff focused on alerts and warnings, an emergency services coordinator, and a community preparedness coordinator.²⁰ As illustrated in these examples, organizational issues abound at the local level. The challenge in solely measuring effectiveness after an event is that it leaves open the possibility of being unprepared and failing in the response.

In seeking a proactive way to measure emergency management effectiveness, scholars and practitioners frequently cite collaboration as the key to success and effectiveness. Waugh and Streib identify collaborative networks as the core of disaster response. They write, “It is a mistake to assume that a response can be completely scripted or that the types of resources that are available can be fully catalogued. It is also a mistake to assume that any individual or organization can manage all the relief and recovery efforts during a catastrophic disaster.”²¹ Waugh and Streib make a point to highlight that emergency managers play a coordinating role for first and second responders, who fill operational roles. They contend that in large jurisdictions, the role is even more crucial as emergency managers work on behalf of the chief executive.²²

Waugh and Streib acknowledge that in an emergency or disaster there can be a strong desire for hierarchy or a single person or entity to take charge and responsibility. However, they emphasize that managing the complex issues in these circumstances involves more than any one person or agency can typically handle. Professional emergency managers rely on collaborative activities to navigate these problem spaces.²³ Naim Kapucu finds communities that collaborate daily perform better in disasters because of their increased trust. Activities such as sharing information and values help to create a

²⁰ Beausang.

²¹ William L. Waugh and Gregory Streib, “Collaboration and Leadership for Effective Emergency Management,” *Public Administration Review* 66, no. S1 (December 2006): 134, <https://doi.org/10.1111/j.1540-6210.2006.00673.x>.

²² Waugh and Streib, 135.

²³ Waugh and Streib, 138.

collaborative environment.²⁴ Similarly, Waugh and Streib find that emergency management activities like establishing a central emergency operations center (EOC), communicating between responders, and providing access to policymakers are concrete ways to build a collaborative environment.²⁵

Researchers have examined what successful collaboration entails and where it thrives. From their 2011 survey of Florida county and city officials about emergency management efforts to foster public and private relationships, MacManus and Caruson found that differences between city and county governments and the respondents' status as first responders had an impact on the quality of those relationships. The research indicated that while county officials reported more extensive and higher-quality partnerships, both cities and counties maintained a significant number of public and private partnerships. MacManus and Caruso conclude that more research must delve into emergency management collaboration at the local level.²⁶

Similarly, in a 2008 study, Christopher Reddick surveyed cities with populations greater than 100,000 to determine their level of collaboration in homeland security preparedness and identify factors contributing to preparedness. Reddick's study, which focused on city managers, found that respondents self-reported high levels of collaboration in preparedness and that the factors of greatest influence included the city's median family income; the city manager's gender, i.e., male; and the city manager's education, i.e., a graduate degree. However, the self-reporting of preparedness and the study's focus on individual variables are not useful in this thesis—the goal of which is to identify programmatic elements. Nevertheless, Reddick makes one relevant conclusion: “The use of performance systems to gain accountability is not very common. With the lack of performance management systems in place, . . . there is little follow up to determine the

²⁴ Naim Kapucu, “Interagency Communication Networks during Emergencies: Boundary Spanners in Multiagency Coordination,” *American Review of Public Administration* 36, no. 2 (June 2006): 210, <https://doi.org/10.1177/0275074005280605>.

²⁵ Waugh and Streib, “Collaboration and Leadership,” 135.

²⁶ Susan A. MacManus and Kiki Caruson, “Emergency Management: Gauging the Extensiveness and Quality of Public- and Private-Sector Collaboration at the Local Level,” *Urban Affairs Review* 47, no. 2 (March 2011): 280–99, <https://doi.org/10.1177/1078087410362050>.

effectiveness of homeland security collaboration and preparedness.”²⁷ This observation is particularly insightful as this thesis seeks a better method for measuring collaboration and identifying programmatic structures that may contribute to collaboration.

Some researchers have contributed their own interpretations of successful collaboration. Kapucu and Garayev write, “The networked governance performance in emergency management is dependent on structural, spatial, and temporal issues embedded into interorganizational relationships.”²⁸ They have studied how interdependent relationships, network complexity, and information-communication technology influence what they call *network sustainability*—the continuation of “relationships in the absence of triggering factors for network collaboration.”²⁹ Drawing from previous research, Kapucu and Garayev have based some of their hypotheses on the thought that collaborative partnerships are not unidirectional but are nurtured and enhanced among related partners, thus increasing preparedness and organizational capacity for all involved. They recommend that disconnected players may pose a liability.³⁰ For their research on using network analysis, Kapucu and Garayev find that network relationships and the technical capacity of participants contribute to the effectiveness of emergency activities.³¹

Practitioner-researcher Samantha Phillips has conducted primary research building on Kapucu and Garayev’s work. From her formative program evaluation, Phillips offers six recommendations to create a structure with sufficient room for innovation in disaster response:

1. Develop mutually agreed upon priorities
2. Improve consistent understanding of roles and responsibilities
3. Explore opportunities for flexible and adaptive management

²⁷ Christopher G. Reddick, “Collaboration and Homeland Security Preparedness: A Survey of U.S. City Managers,” *Journal of Homeland Security and Emergency Management* 5, no. 1 (2008): 17, <https://doi.org/10.2202/1547-7355.1414>.

²⁸ Naim Kapucu and Vener Garayev, “Designing, Managing, and Sustaining Functionally Collaborative Emergency Management Networks,” *American Review of Public Administration* 43, no. 3 (May 2013): 312, <https://doi.org/10.1177/0275074012444719>.

²⁹ Kapucu and Garayev, 316.

³⁰ Kapucu and Garayev, 325.

³¹ Kapucu and Garayev, 326.

4. Improve coordination with local communities during recovery
5. Continue to use planned events as training opportunities
6. Continue to focus on private sector integration.³²

With these previous studies in mind, this thesis seeks to identify programmatic elements for large local jurisdictions that will positively impact collaboration. The literature indicates that personnel, real-world experience, and voluntary or mandated collaborative structures may all have some influence on collaboration. The following section explores ways to objectively measure collaboration and uncover structures that contribute to it.

E. METHOD

This author's initial research—as detailed in the literature review—involved examining the relationship between collaboration and effectiveness. Then, this author explored structures in emergency management and other organizational spheres that influence collaboration. A unique contribution of this thesis encompassed a survey of local emergency management programs and a close examination of various structures and practices of large local jurisdictions. This research required Institutional Review Board approval, which was granted under protocol #NPS.2020.0074.

A survey formed the primary research method of this thesis as it provided a structured communication technique and anonymity for the individual participants. The goal of the survey was to identify highly collaborative organizations and ascertain certain characteristics among them relating to staffing, organization, experience with disasters, and the use of accreditation or standards. Identifying these characteristics meant they could be investigated to derive the factors that contribute to effective organizations for further study or practical exploration.

With the extremely diverse landscape of emergency management at different levels of government and different community compositions, this author sought a group with similar missions, resources, and organization. Thus, the survey focused on emergency

³² Samantha C. Phillips, "Rethinking Disasters: Finding Efficiencies through Collaboration" (master's thesis, Naval Postgraduate School, 2012), 64, <https://hdl.handle.net/10945/27889>.

management agencies in the 21 most populous U.S. cities. A homogeneous group like this one limited some variables for the sake of stronger comparisons while also providing for some variability naturally present in the geographic and political distribution of the 21 targeted cities. The limit also provided a manageable sample size and accounted for potential participant attrition. To access these subjects, this author obtained emails from departmental websites and other publicly available sources.

The survey for this thesis was derived from the Interorganizational Collaborative Capacity Assessment (ICCA), which quantitatively measures organizations' ability to collaborate.³³ The ICCA was developed at the Naval Postgraduate School in 2012 by Jansen et al. to measure an organization's capacity to collaborate, with homeland security agencies in mind. Collaborative capacity, as defined by the assessments' creators, is "the capability of organizations (or a set of organizations) to enter into, develop, and sustain interorganizational systems in pursuit of collective outcomes."³⁴ Jansen et al. identify the following benefits of collaboration: "reduced litigation, cost savings through the transfer of smart practices, better decision making as a result of advice and shared information, enhanced capacity for dispersed units to act collectively, and innovation resulting from the cross-pollination of ideas and recombination of scarce resources."³⁵ The study of collaboration within the homeland security realm was appropriate due to the "complex, interdependent, and dynamic" nature of the problems facing the industry.³⁶

Along with the ICCA's questions, the survey captured demographic characteristics, such as agency size, the model for staffing of the agency (e.g., budget-based, population ratio, or risk-based), the presence of county support, and other factors. See Appendix A for the questions used in this application of the ICCA. With the survey, this author sought to reveal the most collaborative agencies and common characteristics among them to

³³ Susan Page Hocesvar, Erik Jansen, and Gail Fann Thomas, *Inter-organizational Collaborative Capacity (ICC) Assessment* (Monterey, CA: Naval Postgraduate School, 2012), 11.

³⁴ Erik Jansen et al., *Interorganizational Collaborative Capacity: Development of a Database to Refine Instrumentation and Explore Patterns*, NPS-AM-08-148 (Monterey, CA: Naval Postgraduate School, 2008), 1.

³⁵ Jansen et al., 1.

³⁶ Jansen et al., 45.

determine their influence on the collaboration score. This approach was taken to understand the characteristics of effective programs and identify some strategies for achieving such success at the local level. With the survey results, this author measured agencies against mean ICCA scores from the sample group. Programs scoring above the mean—in other words, the most collaborative programs—were considered “effective.”

F. CHAPTER ROADMAP

Chapter II details the data collection methods used for the survey and supplemental research. Chapter III discusses the characteristics of the most collaborative agencies, as revealed in the survey results, while Chapter IV expounds on these themes through additional research and municipal vignettes. Chapter V concludes the thesis with a set of recommendations to further explore the impact of staffing, organization, standards and accreditation, and experience on local emergency management collaboration and, thus, successful outcomes during emergencies and disasters.

II. DATA COLLECTION

Establishing a quantitative measure of effectiveness for emergency management programs has proven difficult. Certainly, productivity can be measured by the time spent developing plans, the number of preparedness exercises delivered, or the value of grant funds secured. However, those measures alone do not equate with effectiveness. As measuring the absence of disasters was not an option, an analogy for measuring effectiveness was required for this study. As identified in the previous chapter, for industries outside emergency management, strong collaboration has correlated positively with effectiveness. The thesis assumes this proposition, employing the ICCA to measure collaboration, a proxy for effectiveness, in the emergency management and homeland security sphere.

A. SURVEY

A survey, consisting primarily of the ICCA, was the chosen method for engaging all participants of the primary research as a way to elicit comparable responses. Surveys are well suited to generating standardized data for quantification and comparison. Additionally, they facilitate efficient data collection and provide a replicable process.³⁷ Well-designed surveys with close-ended questions typically lead to high response rates and reduce the likelihood of collecting irrelevant information.³⁸ Finally, surveys allow researchers to make generalizations about a sample population when it is infeasible to seek information from every member of the studied population.³⁹

This author intended not only to identify highly effective or collaborative organizations but also to understand what factors made them that way. The ICCA alone did not elicit those details, as discussed later in this chapter. Supplemental questions were added to the survey to understand the organizational characteristics that might contribute

³⁷ Louis M. Rea and Richard A. Parker, *Designing and Conducting Survey Research: A Comprehensive Guide*, 2nd ed (San Francisco: Jossey-Bass, 1997), 5.

³⁸ Rea and Parker, 35.

³⁹ Rea and Parker, 97.

to effectiveness. The research was designed to identify any correlation between the dependent variables, the scores of the ICCA, and the independent variables, which represented policy decisions and characteristics of the environments within which these agencies operate.

1. Independent Variables

The goal of this research was to determine what factors influence the interorganizational collaborative capacity of individual emergency management agencies, as explored in the research questions of this thesis. The study sought to uncover whether staffing, an agency's organization, standards and accreditation, or real-world experience had an impact on collaborative capacity. These categories formed the independent variables of this study, or the "change agents" of interorganizational collaborative capacity.⁴⁰ The ICCA score, then, was the dependent variable, influenced by the staffing, organization, standards and accreditation, and experience. The original ICCA included context and demographic questions to complement the Likert-scale questions.⁴¹ This thesis replaced the original ICCA context questions with questions specific to emergency management staffing, agency organization, standards and accreditation, and experience.

2. Dependent Variables

The scores of the ICCA were the dependent variables. The ICCA scores were based on self-reported responses to the Likert-scale questions of the survey. The categories of the ICCA were compared to the independent variables to determine areas of commonality, which might indicate a contributing factor to higher collaborative capacity and, thus, higher effectiveness.

3. Interorganizational Collaborative Capacity Assessment

The ICCA is a survey method that measures organizational collaborative capacity based on the participant's response. With the ability to assess respondents collectively

⁴⁰ Rea and Parker, 156.

⁴¹ Hocevar, Jansen, and Thomas, *Inter-organizational Collaborative Capacity Assessment*, 11.

using Likert-scale questions, the ICCA provides a quantitative approach for measuring collaboration. Researchers at the Naval Postgraduate School developed the ICCA in 2008 after identifying a lack of valid measures for collaborative capacity and positing there would be no way to make meaningful contributions to collaborative capacity theory without a means for measuring it.⁴²

For such an important subject, the research team found that a major stumbling block to its advancing theory and agencies' evaluating themselves was the absence of an effective tool. The team sought to answer the question of how it could “measure or assess interorganizational collaborative capacity.”⁴³ The development of the assessment began in 2002 when the team identified a conceptual model of collaborative capacity in a planning context. A literature review was combined with an educational workshop for mid- and senior-level homeland security professionals to build that model. Several themes arose from this stage of the research. Through refinement, the research team identified 13 factors that aligned with Galbraith's star model, a framework for thinking about organizations holistically. According to the model, organizations comprise strategy, people, structure, rewards, and processes—and these factors align in an effective organization.⁴⁴

Identified through study participants and research as either enablers or barriers to collaboration, these 13 factors were then nested under Galbraith's domains. The research team prepared a graphical representation of these factors within the broader domains (see Figure 2). This figure has become the conceptual model used to illustrate collaborative capacity.⁴⁵ The pentagonal shape represents the entirety of an organization, consisting of the five domains. Figure 3 represents how organizations—oriented toward their own goals and objectives and drawing from their internal domains to achieve them—interrelate and jointly accomplish common goals as interagency teams and workgroups. The effectiveness

⁴² Jansen et al., *Development of a Database*, 6.

⁴³ Jansen et al., 6.

⁴⁴ Jay R. Galbraith, *Designing Organizations: Strategy, Structure, and Process at the Business Unit and Enterprise Levels*, 3rd ed. (San Francisco: Jossey-Bass, 2014), 17.

⁴⁵ Hocevar, Jansen, and Thomas, *Inter-organizational Collaborative Capacity Assessment*, 3.

of this system as it relates to interorganizational efforts depends on the congruence of the individual domains of each participating agency.⁴⁶

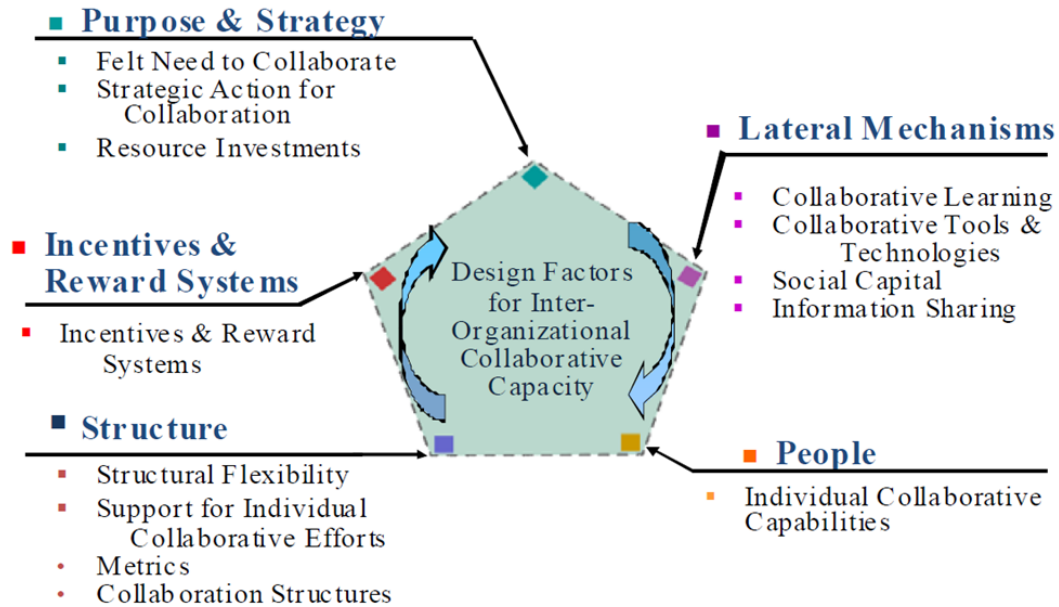


Figure 2. Individual Organization's Design Factors for Interorganizational Collaborative Capacity.⁴⁷

⁴⁶ Jansen et al., *Development of a Database*, 5.

⁴⁷ Source: Hocevar, Jansen, and Thomas, *Inter-organizational Collaborative Capacity Assessment*, 3.

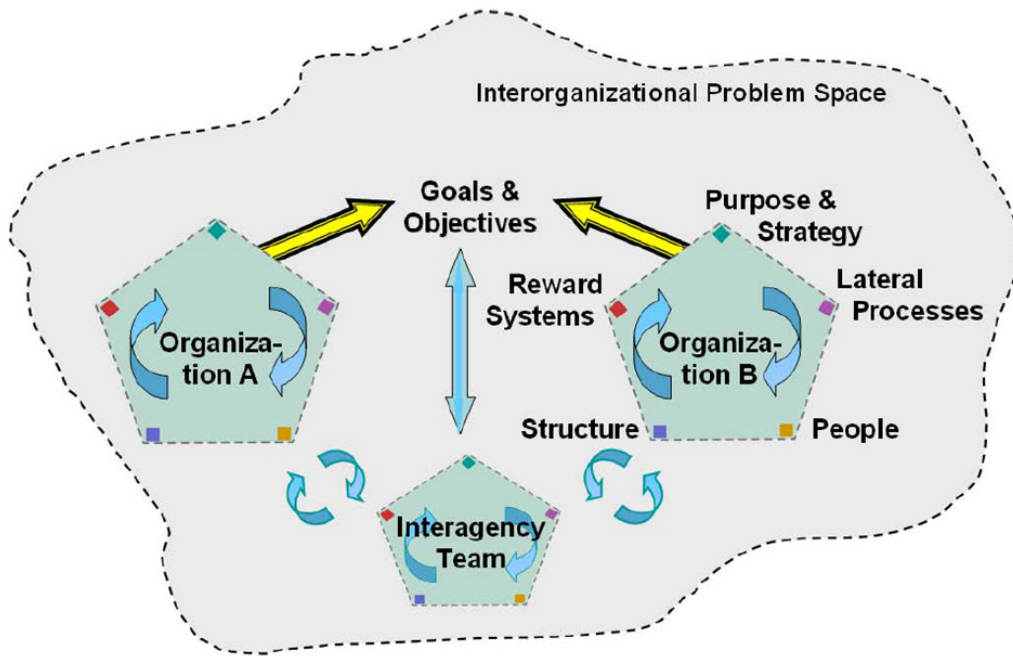


Figure 3. Interorganizational Problem Space.⁴⁸

With a conceptual model developed, the research team sought to validate the tool. The research team engaged participants from the homeland security and acquisition/contracting fields. Based on a series of individual elements taken from the 13 factors and five domains, respondents gauged their agreement with questions on a Likert scale of 1, (strongly disagree) to 6 (strongly agree). Table 1 shows the relationship between domains, factors, and elements in the ICCA; five domains, the broadest themes at work in collaborative capacity, are broken into more-specific factors and individual elements that materialize in the survey questions. In sum, the ICCA consists of 52 unique questions used to assess one of five main domains of collaborative capacity (see Appendix A).

⁴⁸ Source: Jansen et al., *Development of a Database*, 6.

Table 1. Relationship between Domains, Factors, and Elements

Domain	Factor	Elements
Purpose & Strategy	Felt Need to Collaborate	5 elements
	Strategic Action for Collaboration	5 elements
	Resource Investments	3 elements
Structure	Structural Flexibility	4 elements
	Support for Individual Collaborative Efforts	4 elements
	Metrics	3 elements
	Collaboration Structures	3 elements
Incentives & Rewards Systems	Incentive & Reward Systems	4 elements
People	Individual Collaborative Capabilities	7 elements
Lateral Mechanisms	Collaborative Learning	5 elements
	Collaborative Tools & Technologies	3 elements
	Social Capital	3 elements
	Information Sharing	3 elements

In addition to the Likert-scale questions, the ICCA collects context and demographic questions from survey respondents.

The ICCA has been employed for several research efforts at the Naval Postgraduate School. It provides a multi-domain evaluation of collaborative capacity that often highlights areas for improvement and initiative. Using the ICCA domains to evaluate the emergency responses in three Florida disasters based on their AARs, Hall gauged the reports’ observations for positive or negative factors, thus determining whether the responses were successful.⁴⁹ Further, Holbrook used some of the ICCA’s domains to assess collaboration among public safety agencies in Sacramento, California, and Nahmod used elements of the ICCA to determine the importance of institutional trust and

⁴⁹ Richard D. Hall, “Smart Practices in Building Interorganizational Collaborative Capacity to Strengthen the Florida Comprehensive Disaster Management Enterprise” (master’s thesis, Naval Postgraduate School, 2011), <http://hdl.handle.net/10945/10616>.

organizational culture on collaboration among New York City’s frontline public safety supervisors.⁵⁰

4. Adapting the ICCA for This Process

While the ICCA was developed with significant input from homeland security and defense contracting/acquisition experts, the tool can be used by practically any industry or organization looking to assess its capacity. The ICCA was adapted slightly to evaluate big-city emergency management agencies. Custom context and demographic questions were developed and used to replace the generic ones provided by the ICCA. These custom questions were derived from the interest and experience of this author—drawing from anecdotal observations about the field of local emergency management—to answer the secondary research questions of this thesis.

This author sought to answer the following primary research question: What are the characteristics of the most collaborative local emergency management programs? In investigating this question, the author considered the influences of staffing, organization, accreditation and standards, and experience. At the outset of the research, it was hypothesized that the most collaborative local emergency management programs would share similarities across staffing, organization, accreditation and standards, or experience; similarly, less-collaborative programs would share characteristics as well. The supplemental questions were designed to elicit elements of each responding agency that might influence its ICCA score.

Notably, the ICCA had evolved from the assessment developed in 2008 to the 2012 version adapted in this study. During this timeframe, two factors—collaboration and interagency teams—and their respective elements were removed, and three factors—support for individual collaboration efforts, collaboration structures, and collaborative

⁵⁰ Christopher C. Holbrook, “The Preparedness Web Regional Collaborative Networks for Homeland Security Preparedness” (master’s thesis, Naval Postgraduate School, 2007); Abdo Nahmod, “The Collaborative Capacity of the NYPD, FDNY, and EMS in New York City: A Focus on the First Line Officer” (master’s thesis, Naval Postgraduate School, 2010), <https://hdl.handle.net/10945/5443>.

tools and technologies—and their respective elements were added.⁵¹ Further, the 2012 study suggested “context and demographic” questions while the 2008 study offered “select interview questions for assessing [interorganizational collaborative capacity].”⁵² Given the differences between the two studies, this author tailored the context and demographic questions for this thesis while keeping the 2012 ICCA survey questions the same.

5. Survey Collection

Another adaptation of the survey from prior uses was the use of an online platform as opposed to paper collection. Through the Naval Postgraduate School, the LimeSurvey platform was employed for this research. LimeSurvey is a web-based platform that provides an online database organized around user-defined questions and parameters.⁵³ LimeSurvey allowed for the collection of Likert-scale responses to the prescribed ICCA assessment as well as the collection of open-ended responses from participants. The survey results were maintained in the password-protected online database with the only identifiable self-reported information being the respondents’ answers to a question asking for the name of their organization. This online survey method took all respondents 8–38 minutes to complete. Survey responses for this thesis were collected between November 13, 2020, and December 12, 2020.

The adaptation of the online survey for this thesis did not influence the outcome of the survey but instead allowed for a more flexible collection method. The intention was to maximize participation with an online platform, and the founding ICCA research team did not propose or dictate one collection method over another.

6. Recruitment of Participants

Emergency management in large urban jurisdictions is unique among local governments. For this research, the 21 most populous U.S. cities were identified for

⁵¹ Jansen et al., *Development of a Database*; Hocevar, Jansen, and Thomas, *Inter-organizational Collaborative Capacity Assessment*.

⁵² Hocevar, Jansen, and Thomas, *Inter-organizational Collaborative Capacity Assessment*, 11; Jansen et al., *Development of a Database*, 51.

⁵³ “LimeSurvey Manual,” LimeSurvey, accessed July 27, 2021, <https://manual.limesurvey.org/>.

investigation. While nearly 800 cities or local jurisdictions in the United States are home to more than 50,000 people, these 21 selected cities each have populations of 690,000 people or more. The populations of these 21 cities represent nearly 11 percent of the U.S. population, with over 35 million people.⁵⁴ This author used the U.S. Census Bureau’s city and town population totals for 2019 to identify these 21 cities, as shown in Table 2.

Table 2. Most Populated U.S. Cities.⁵⁵

1 New York City, New York (8,336,817)	12 Jacksonville, Florida (911,507)
2 Los Angeles, California (3,979,576)	13 Ft. Worth, Texas (909,585)
3 Chicago, Illinois (2,693,976)	14 Columbus, Ohio (898,553)
4 Houston, Texas (2,320,268)	15 Charlotte, North Carolina (885,708)
5 Phoenix, Arizona (1,680,929)	16 San Francisco, California (881,549)
6 Philadelphia, Pennsylvania (1,584,064)	17 Indianapolis, Indiana (876,384)
7 San Antonio, Texas (1,547,253)	18 Seattle, Washington (753,675)
8 San Diego, California (1,423,851)	19 Denver, Colorado (727,211)
9 Dallas, Texas (1,343,573)	20 Washington, DC, (705,749)
10 San Jose, California (881,549)	21 Boston, Massachusetts (692,600)
11 Austin, Texas (978,908)	

Note. City populations appear in parentheses.

Big cities are different from smaller cities in many aspects. For the majority, consolidated government functions report through one chief executive. Often, these functions are larger with significantly more resources than smaller jurisdictions. Another significant distinction of big cities is their reliance on career services over volunteer support. Particularly with fire department and emergency management services, big cities often staff full-time career departments instead of relying on volunteers. By contrast,

⁵⁴ “City and Town Population Totals: 2010–2019,” U.S. Census Bureau, February 16, 2022, <https://www.census.gov/data/tables/time-series/demo/pepctot/2010s-total-cities-and-towns.html>.

⁵⁵ Source: U.S. Census Bureau.

smaller jurisdictions rely on volunteer services to augment career services, if there are any career services at all. Thomas Phelan explains this dichotomy in his book:

As emergency management departments, offices, and agencies grow in size, the number of positions increase. In many local, usually county, emergency management offices, there may be only one or two employees. . . . Cities with large populations and business centers nevertheless operate as local governments with local emergency management offices. Yet the nature of emergency management, when hundreds of thousands of people are collected in a few square miles, requires far more personnel than a less densely populated area. Cities are well known for their emergency management initiatives.⁵⁶

Chang highlights that volunteers are often used by local governments for both direct emergency management services (e.g., operating an EOC) and indirect services (e.g., serving meals and staffing shelters).⁵⁷ For example, Will County, Illinois, with a population of over 690,000 and 45 miles from Chicago, relies on volunteers for various response and preparedness capabilities.⁵⁸ Lancaster County, Pennsylvania, with a population of over 550,000 and 63 miles from Philadelphia, leverages volunteers in its EOC to write plans and conduct community outreach.⁵⁹ Hamilton County, Indiana, with a population of over 310,000 and 28 miles from Indianapolis, staffs its EOC with volunteers.⁶⁰

The senior leadership of each organization targeted for this thesis was contacted to participate in the survey. Through agency website searches, an email address for a senior point of contact was found for each agency. An email invitation explaining the purpose of the research and linked to the research survey was delivered to each contact. A response

⁵⁶ Thomas D. Phelan, *Emergency Management and Tactical Response Operations: Bridging the Gap* (Oxford: Butterworth-Heinemann, 2008), 98.

⁵⁷ Chang, “Local Emergency Management Collaboration.”

⁵⁸ “Volunteer Response Divisions,” Will County, Illinois, Emergency Management Agency, accessed February 10, 2024, <https://www.willcountyema.org/response-divisions>.

⁵⁹ “Emergency Management Duly Enrolled Volunteer Program,” Lancaster County, Pennsylvania, accessed February 10, 2024, <https://www.co.lancaster.pa.us/2722/Emergency-Management-Duly-Enrolled-Volun>.

⁶⁰ “Emergency Management EOC Volunteer Program,” Hamilton County, Indiana, accessed February 10, 2024, <https://www.hamiltoncounty.in.gov/1287/EOC-Volunteer>.

rate of 33 percent was set as the goal and achieved through the initial outreach and one round of follow-up communication. Contacts who did not respond to the initial email were sent a second email requesting participation. In total, nine responses, representing nearly 43 percent of agencies contacted, were received. These responses came from agencies in the U.S. Northeast, Southwest, and West. Representation included the top 5, top 10, and top 21 most populated cities. Nine responses were considered a representative sample of all 21 jurisdictions and were sufficient to be informative.

B. SUPPLEMENTAL DATA

As a way to paint a more comprehensive picture of each jurisdiction and identify factors that contributed to the collaborative capacity of agencies, additional information was collected on each organization. This information largely focused on the characteristics of the jurisdiction and the agency surveyed. Most of the information was collected through the survey tool while other elements were collected through additional research or independent calculations. Table 3 outlines the information collected and the method used to do so (i.e., survey or calculation with available information). The questions in this table were designed to evaluate the four categories of influence on collaboration—staffing, organization, accreditation and standards, and experience—areas identified by the author of this thesis.

Table 3. Sources of Information

Staffing	
Number of full-time personnel (including detailees from other organizations)	Surveyed
How many personnel are partially or fully funded outside of your jurisdiction's annual budget?	Surveyed
Percent of staff grant funded	Independent calculation
Ratio of emergency management staff to population	Independent calculation
How have you designed your current staffing (e.g., based on a population, based on available budget, or specific to your threats and hazards)?	Surveyed
Organization	
Does your jurisdiction rely on a separate county government?	Surveyed
Which of the following does your organization fall into (fire department, police department, public safety and communications, executive, or other)?	Surveyed
Which of the following functions do you have in your emergency management agency (on-call duty officer, field response teams on call or 24/7, 24/7 emergency management watch, standing EOC activation, or other)?	Surveyed
Are you a part of an Urban Area Security Initiative (UASI)? If yes, describe the type of UASI (operational, planning/preparedness-oriented, or fiduciary-only).	Surveyed
Accreditation/Standards	
Is the agency currently EMAP accredited or seeking accreditation?	Surveyed
Has your agency submitted a 2019 THIRA/SPR for the local or regional level?	Surveyed
Experience	
Estimated total days of EOC activation or full-scale exercise activation between calendar years 2015 and 2019	Surveyed
Estimated total number of days your agency, or personnel, has supported disasters outside of the home jurisdiction between calendar years 2015 and 2019 (1 person for 5 days = 5; 2 people for 5 days = 10)	Surveyed
Number of declared disasters since 9/11/01	Independently researched
Background	
How would you rate the overall success of your organization in collaborating with other organizations?	Surveyed
For what organization do you work?	Surveyed
Population	Independently researched

C. LIMITATIONS OF THE RESEARCH METHOD

While the data collection method yielded the desired results in terms of the number of respondents, there were limitations to the study. Though the number of survey responses was considered representative of the full population, more responses from the 21 identified big cities, if not all of them, would have been preferred. Furthermore, individual responses to the survey posed some challenges. One respondent did not complete the Likert-scale questions, which had not been deemed mandatory in the survey software. One respondent did not identify the jurisdiction in the open-ended context questions. The absence of this information prevented further analysis with independently researched information. Finally, some responses to the open-ended context questions strayed from the core issue. Future use of the ICCA in this capacity should consider these challenges in the research design. At a minimum, a response validation method is recommended so that researchers may follow up with respondents to clarify responses. Notably, the ICCA may pair well with participant interviews after completion.

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III. ANALYSIS AND FINDINGS

The raw ICCA Likert responses on their own did not provide sufficient opportunity to compare data collected across the responding organizations nor to compare to the original implementation of the ICCA used with homeland security agencies. A simple method was used to find the mean of each factor and then the overall mean for each agency so that they could be compared in a more useful way. This simple approach afforded several opportunities. First, it facilitated a side-by-side comparison with the original research team's first implementation of the ICCA with homeland security professionals. This comparison revealed a surprisingly similar trend between the participants of each study, as discussed in the following sections. Second, it enabled the ranking of big-city emergency management agencies into groups according to level of collaboration relative to the mean scores of the overall sample. Finally, it provided an opportunity to highlight commonalities or differences among the respondents. Ultimately, the study yielded insights on both interorganizational collaborative capacity and the organization of big-city emergency management agencies in the United States at the time of the survey, in 2020. While a strong or clear contributor to higher collaborative capacity might not have emerged, the findings certainly suggest areas for further research, which are discussed extensively in Chapters IV and V.

A. SUMMARIZING THE DATA BY FACTORS TO MAKE INSIGHTS

To compare data across agencies and factors, the individual element (question) responses were grouped by factor and a mean for each factor was derived. If a participant responded to all elements within a factor, the raw Likert ratings were grouped and averaged for a factor's mean rating. For example, using the Felt Need factor for Agency A, responses to the five elements (questions) in that section were Likert ratings of 6, 6, 6, 6, and 5. The average then for the factor of Felt Need for Agency A was 5.8.

B. COMPARING THE BIG-CITY EMERGENCY MANAGEMENT SURVEY RESULTS TO THE ORIGINAL STUDY

In the development and validation of the ICCA, Jansen et al. provided readers with sample data. As shown in Table 4, this first study comprised a sample of 319 survey respondents representing homeland security and defense acquisition and contracting professionals. This sample was used by Jansen et al. to validate their tool and gain baseline results. Responses from the first study were combined to derive mean values. While the original sample represented homeland security and acquisition and contracting respondents combined, it provided a measure for understanding the collaborative qualities of this survey's respondents, big-city emergency management agencies. The first study provided a usable comparison because nearly three-quarters of that original sample size included U.S. offices of emergency management, municipal police and fire departments, and utilities.⁶¹ Further, understanding the core principles and elements of collaboration would be useful to virtually any profession.

⁶¹ Jansen et al., *Development of a Database*, 9.

Table 4. ICCA Response Means of First Study v. Big-City Emergency Management.⁶²

Domain	Factor	First Study	Big-City Emergency Management
Purpose & Strategy	Felt Need to Collaborate	4.7	5.675
	Strategic Action for Collaboration	4.3	4.7
	Resource Investments	3.7	4.42
Structure	Structural Flexibility	4.1	4.72
	Support for Individual Collaborative Efforts	N/A	5.01
	Metrics	3.0	2.75
	Collaboration Structures	N/A	4.08
Incentives & Rewards Systems	Incentive & Reward Systems	3.4	4.06
People	Individual Collaborative Capabilities	4.1	4.82
Lateral Mechanisms	Collaborative Learning	3.5	4.47
	Collaborative Tools & Technologies	n/a	3.96
	Social Capital	4.2	5.13
	Information Sharing	4.1	4.92

Note. Means scores were based on a Likert scale of 1, *strongly disagree*, to 6, *strongly agree*.

The higher the score, the stronger the agreement with individual elements of each factor. Of interest, in comparing these two samples, the means of big-city emergency managers indicated stronger agreement in every category except one compared to the first study’s group. Metrics was the only category to receive lower agreement scores among big-city emergency managers than with the first study’s sample. This author hypothesizes that the first study’s association with contract and acquisition work meant that its participants identified more closely with measurements and metrics given their familiarity with accounting in that field. Another observation is that both studies’ factors, where possible to compare, trended similarly. In other words, they were higher or lower across the means for the same factors (see Figure 4).

⁶² Figures for the first study were derived from Jansen et al., *Development of a Database*, while figures on big-city emergency management were derived from this author’s survey results.

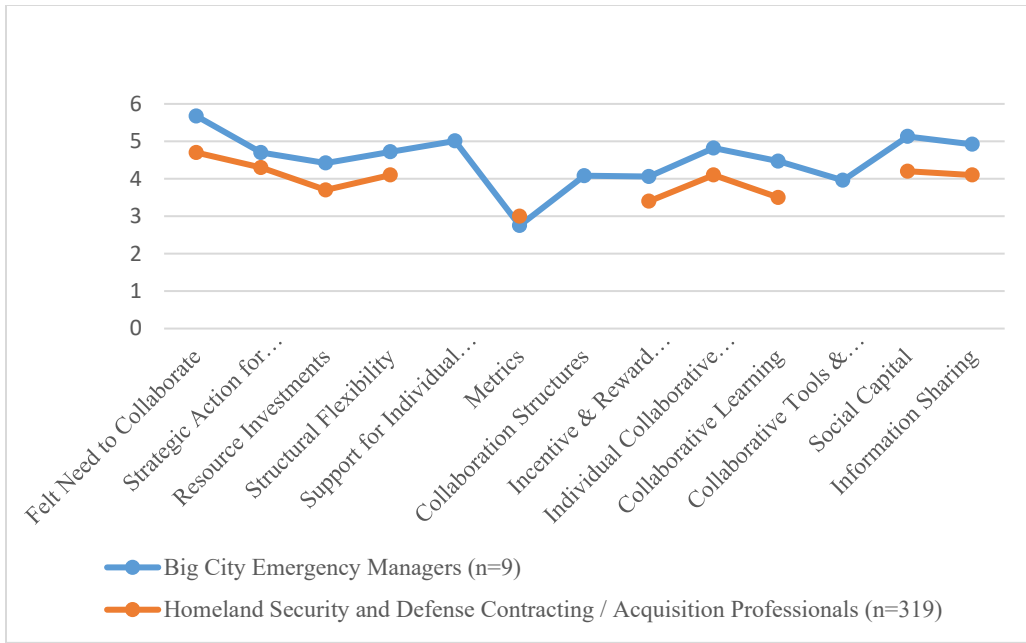


Figure 4. Mean Trends, Big-City Emergency Management v. First Study.⁶³

C. BIG-CITY EMERGENCY MANAGEMENT RESULTS BY AGENCY

This study employed a mean-of-means analysis to identify and further examine the most collaborative organizations. The means across all 13 factors were averaged to rank the responding entities. The most collaborative agencies were those whose scores exceeded the mean of means. See Table 5 for individual agencies' overall means in descending order and the mean of means. See Appendix B for a breakdown of the means for each factor and agency.

⁶³ Adapted from Jansen et al.

Table 5. Big Cities' Overall Mean Indicating Level of Collaborative Capacity

Agency	Overall Mean
E	5.122527473
A	5.099801587
I	5.093406593
F	4.921245421
Mean of All Agencies	4.430348421
G	4.366483516
C	3.929304029
B	3.804029304
D	3.798168498
H	unknown

Note. Agency H did not complete the ICCA portion of the survey, so an overall mean could not be determined.

Table 6 identifies characteristics of the most collaborative agencies, agencies E, A, I, and F, as compared to all responding agencies.

Table 6. Characteristics of the Most Collaborative Agencies

Staffing	
Number of full-time personnel (including detailees from other organizations)	Most Collaborative: Ranged from 7 to ~250
	All Respondents: Ranged from 7 to ~250
	Least Collaborative: Ranged from 11 to 50
Percent of staff partially or fully grant funded	Most Collaborative: Ranged from 14.28% to 100%
	All Respondents: Ranged from 14.28% to 100%
	Least Collaborative: Ranged from 33.3% to 73.9%
Ratio of emergency management staff to population	Most Collaborative: Ranged from 1:33,347.3 to 1:240,141.7
	All Respondents: Ranged from 1:4,970.1 to 1:240,141.7
	Least Collaborative: Ranged from 1:25,651.9 to 1:92,890.5
How have you designed your current staffing (e.g., based on a population, based on available budget, or specific to your threats and hazards)?	Most Collaborative: Included available budget, threats/hazards, and fundamentals of emergency management
	All Respondents: Included available budget, threats/hazards, and fundamentals of emergency management
	Least Collaborative: Included available budget, threats/hazards, and fundamentals of emergency management

Organization	
Does your jurisdiction rely on a separate county government?	Most Collaborative: 3 of 4 agencies replied “yes”
	All Respondents: 5 of 9 agencies replied “yes”
	Least Collaborative: 2 of 4 agencies replied “yes”
Which of the following does your organization fall into (fire department, police department, public safety and communications, executive, or other)?	Most Collaborative: All 4 replied with “independent,” “stand-alone,” or “executive”
	All Respondents: Ranged from independent/standalone/executive to public safety; 1 within a fire department; 0 within a police department
	Least Collaborative: 2 public safety, 1 city manager, 1 fire department
Which of the following functions do you have in your emergency management agency (on-call duty officer, field response teams on call or 24/7, 24/7 emergency management watch, standing EOC activation, or other)?	Most Collaborative: All 4 replied with an on-call duty officer or EOC team; 1 with a 24/7 staffed watch center and field response staff
	All Respondents: All maintain on-call duty officer or EOC team; 3 maintain a 24/7 staffed watch and/or field response staff; 1 relies on fire and police dispatch
	Least Collaborative: All replied with an on-call duty officer or EOC team; one replied with a 24x7 staffed watch center and field response staff; one relies on fire and police dispatch
Are you a part of a UASI? If yes, describe the type of UASI (operational, planning/preparedness-oriented, or fiduciary-only).	Most Collaborative: All part of a UASI; UASI types varied by function—planning/preparedness most common (3 of 4)
	All Respondents: All part of a UASI; UASI types varied by function—planning/preparedness most common (6 of 9); primarily fiduciary-focused for 3; operational for 2
	Least Collaborative: All part of a UASI; 2 planning/preparedness-oriented and fiduciary, 1 primarily fiduciary
Accreditation/Standards	
Is the agency currently EMAP accredited or seeking accreditation?	Most Collaborative: 2 of 4 responded “yes”
	All Respondents: 5 of 9 responded “yes”
	Least Collaborative: 2 of 4 responded “yes”
Has your agency submitted a 2019 THIRA/SPR for the local or regional level?	Most Collaborative: All 4 responded “yes”
	All Respondents: All 9 responded “yes”
	Least Collaborative: All 4 responded “yes”

Experience	
Estimated total days of EOC activation or full-scale exercise activation between calendar years 2015 and 2019	Most Collaborative: Ranged from 91 to 250 days; 2 responded unknown
	All Respondents: Ranged from 25 to 250 days; 2 responded unknown
	Least Collaborative: Ranged from 25 to 130 days
Estimated total number of days your agency, or personnel, has supported disasters outside of the home jurisdiction between calendar years 2015 and 2019 (1 person for 5 days = 5; 2 people for 5 days = 10)	Most Collaborative: Ranged from 12 to 1,250 days; 1 responded unknown
	All Respondents: Ranged from 0 to 1,250 days; 1 responded unknown
	Least Collaborative: Ranged from 0 to 30 days
Number of declared disasters since 9/11/01	Most Collaborative: Ranged from 10 to 19; 1 reported unknown
	All Respondents: Ranged from 8 to 23; 1 reported unknown
	Least Collaborative: Ranged from 8 to 23
Background	
How would you rate the overall success of your organization in collaborating with other organizations?	Most Collaborative: Responses included “highly successful,” “very well,” “well,” and “overall excellent”
	All Respondents: Responses included those mentioned above as well as “good . . . [but] setting realistic expectations . . . can be challenging,” “fair,” “5 on a 10 scale,” and “moderate to good”
	Least Collaborative: Responses included “fair,” “5 on a 10 scale,” “moderate to good,” and “good at . . . relationships. Setting realistic expectations can be challenging”

D. TRENDS FROM THE RESPONSES

The survey responses indicated little to no agreement on common characteristics among the most collaborative agencies. Staffing numbers, ratios, funding, and design varied greatly. Regarding agency organization, more than half of the respondents reported having the support of a county government, and the most collaborative comprised independent or executive agencies. Among the big-city respondents, functioning as part of a police or fire department was uncommon. All agencies reported relying on an on-call duty officer program while few reported using a 24/7 staffed emergency management function. Given that all agencies reported being part of a UASI, as designated by FEMA,

they most likely performed planning and preparedness work in addition to administering the financial grant, and they were less likely to perform operational functions.

Regarding accreditation and standards, the respondents were split down the middle for voluntary EMAP participation, both for the most collaborative agencies and across the entire group. All respondents reported participating in FEMA's THIRA/SPR, most likely the result of being UASI designated, which requires participation. In evaluating experience from EOC activations, deployments to other jurisdictions, and the number of presidential disaster declarations, no trend emerged—other than the wide variability of responses. Finally, an interesting but perhaps not significant finding was that the most collaborative agencies reported a more favorable view of their collaborative capacity than the least collaborative agencies, which took a more modest view of their capacity.

E. SUMMARY

Comparing characteristics to the collaborative capacity scores yielded significant variations among big-city emergency management agencies. Thus, this author could not identify or validate a common template for collaborative capacity among such agencies. The emergency management function may still lack the necessary research and data required to create replicable highly collaborative and highly effective programs. Moreover, it is questionable whether local jurisdictions could conform to a common approach in preparing for, responding to, and recovering from emergencies, disasters, and other complex events. In any case, Chapter IV investigates the categories of influence further, drawing on other research, assessments, and applications so that future studies of emergency management collaboration and effectiveness may have a starting point.

IV. AREAS TO INVESTIGATE

Without obvious common characteristics among the most collaborative organizations, or the least collaborative organizations for that matter, all focus areas warrant further investigation. This chapter expounds on current and prospective methods for staffing, organization, accreditation and standards, and experience. Each section considers opportunities based on an evaluation of a focus area’s strengths and weaknesses to create more-collaborative organizations. With the aim of identifying a standard for local emergency management organizations, this chapter highlights several examples that not only provide a tangible effort to further evaluate but also demonstrate different practices of local emergency management agencies that could be employed more widely.

A. STAFFING

Staffing models—dependent on population, risks, available budget, or other factors—varied across the jurisdictions that responded to the survey. The survey was administered during the first year of the COVID-19 pandemic when many jurisdictions imposed strict lockdown procedures and other public health measures to curb the virus’s spread. Some of these measures impacted tax revenue and ultimately led to untenable public budgets, which resulted in reductions in workforce for some jurisdictions. The ICCA did not pose questions about COVID-19’s impact on the participating organizations; however, the timing of the survey might have affected some of the responses and the variation. Regardless, workforce plays a major role in determining a program’s capacity.

The workforce is particularly important in collaborative environments. Local emergency management agencies must have not only the capacity to complete the work assigned to them but also additional capacity to “boundary span,” or collaborate with individuals and organizations outside their areas of operation. As defined by Naim Kapucu, “Boundary spanners are organizational members who link their organization with the external environment.”⁶⁴ This boundary spanning expectation for emergency management

⁶⁴ Kapucu, “Interagency Communication Networks,” 210.

is unique among government agencies. Other local governmental entities focus on service delivery, such as refuse collection or code enforcement. Notably, boundary spanning and collaboration have become more in vogue as complexities like opioid addiction, homelessness, mental health, and climate change have merged with everyday life.

In contrast, emergency management agencies are expected to integrate across various sectors—including chemical and nuclear, commercial and private, communications and information technology, emergency services and public safety, critical infrastructure including energy and water, food, government services, health and social services, natural and cultural resources, and transportation. Frankly, emergency management cannot deliver any of these services without this integration. The importance of these sectors and the expectation for emergency management to integrate with them is clear through FEMA’s guidance on community lifelines and core capabilities.⁶⁵

The importance of this level of collaboration is not only highlighted in current doctrine but also backed by contemporary research. Kapucu has studied interagency communication networks during emergencies. Examining the September 11, 2001, attack on the World Trade Center in New York City, Kapucu looked at the interactions between public, private, and non-profit agencies that played a role in the response. Kapucu found that “the size of the network is critical to the structure of interorganizational communications.”⁶⁶ Kapucu points to the importance of individual actors in positively affecting the density, size, and complexity of networks. Indeed, their significance cannot be overstated.

The use of staffing models and minimum staffing requirements is common in many industries. For example, hospitals base nurse staffing on patient care ratios, and police departments budget for and assign officers based on calls for service. Nevertheless, no existing staffing model has been widely adopted for emergency management work. Two main reasons explain this difference. First, emergency management is implemented

⁶⁵ “Community Lifelines,” Federal Emergency Management Agency, accessed January 23, 2022, <https://www.fema.gov/emergency-managers/practitioners/lifelines>; Federal Emergency Management Agency, “Mission Areas and Core Capabilities.”

⁶⁶ Kapucu, “Interagency Communication Networks,” 215.

differently, as local emergency management agencies vary in size and organization. Emergency management, like the fire service, differs in how it is staffed; some entities are all-volunteer organizations, others rely on municipal administrators to assume emergency management responsibilities as a secondary function, and some are full-time professional organizations. Second, emergency management is largely a preventive or contingency measure, much like personal insurance coverage. Absent mandates on minimum levels of service—or coverage—emergency management finds itself routinely under-resourced before significant emergency or disaster events. Much like an insurance policy, the coverage amount is not fully valued or even considered until after it is needed.

The practice or even discussion of staffing models for emergency management is not something found widely today. In a 2018 book detailing his experience in local emergency management and an assessment of the nation’s preparedness, Kelly McKinney recommends an all-disasters-are-local staffing model. McKinney says, “Every local jurisdiction—town, city, county—requires a minimum of twenty full-time professional emergency management staff for every million residents.”⁶⁷ McKinney goes on to prescribe a minimum of seven staff members for jurisdictions with fewer than 500,000 residents.⁶⁸ McKinney’s approach is too simplistic: while it does account for population and consequences for the public, it does not account for the unique threats and vulnerabilities of each jurisdiction. Illustrating the shortcomings of this model, the 650,000 residents of a 48-square-mile coastal, symbolic, and economic center like Boston, for example, face different threats and vulnerabilities from the 650,000 residents of a 141-square-mile landlocked, sprawling jurisdiction like Las Vegas.⁶⁹ Still, McKinney’s proposal lends one aspect toward more uniformly staffing emergency management functions.

⁶⁷ Kelly McKinney, *Moment of Truth: The Nature of Catastrophes and How to Prepare for Them* (Savio Republic, 2018), 220.

⁶⁸ McKinney, 220.

⁶⁹ “QuickFacts: Boston City, Massachusetts,” U.S. Census Bureau, accessed February 10, 2024, <https://www.census.gov/quickfacts/fact/table/bostoncitymassachusetts/POP060220>; “QuickFacts: Las Vegas City, Nevada,” U.S. Census Bureau, accessed February 10, 2024, <https://www.census.gov/quickfacts/fact/table/lasvegascitynevada/PST045222>.

Staffing for emergency services can provide some parallels. Fire and police departments and hospital emergency rooms across the country must maintain minimum staffing levels so that core services can be delivered at all times. Fry, Magazine, and Rao have looked at fire departments' staffing and accounting for absences when determining workforce. They highlight that computer programs, such as those developed by Deccan International for fire and emergency services, facilitate deciding how many fire companies should be deployed and where they should be dispersed geographically.⁷⁰ Deccan International's Apparatus Deployment Analysis Module uses historical service data with an area's unique geography to analyze how staffing deployments will affect response performance.⁷¹

A report prepared by the International City/County Management Association identifies common methods and proposes a way for police departments to design their staffing deployments. Common methods may consider crime trends, officers per capita, minimum staffing based on past practices or management, authorized budget, or workload.⁷² The report recommends developing a keen understanding of the number of personnel available for patrol, the workload of the personnel, and the time spent on calls for service to devise a workload-based staffing model. Correctly balancing these factors translates into having enough officers to handle calls for service through 9–1-1 (reactive), as well as police-generated calls for service (proactive).⁷³

Both public safety models mentioned rely heavily on response-oriented indicators, but the Federal Railroad Administration (FRA) lends a more preventive, mitigative model. The FRA's responsibilities include proactive and reactive rail safety measures and the enforcement of regulations across U.S. railways, the vehicles on them, and the related

⁷⁰ Michael J. Fry, Michael J. Magazine, and Uday S. Rao, "Firefighter Staffing Including Temporary Absences and Wastage," *Operations Research* 54, no. 2 (April 2006): 353, ProQuest.

⁷¹ "ADAM," Deccan International, accessed May 23, 2022, <https://deccanintl.com/what-we-do/adam/>.

⁷² James McCabe, *An Analysis of Police Department Staffing: How Many Officers Do You Really Need?* (ICMA Center for Public Safety Management, 2019), 5, https://icma.org/sites/default/files/305747_Analysis%20of%20Police%20Department%20Staffing%20_%20McCabe.pdf.

⁷³ McCabe, 26.

infrastructure.⁷⁴ The FRA has five disciplines and conducts routine inspections as well as complaint or accident-based investigations. Ostensibly, the FRA has a mitigation and preparedness mission for its proactive programs and a response and recovery mission for its reactive programs.

In 1990, the FRA’s safety inspection program received criticism for its computerized staffing models, which provided inadequate estimates to meet its safety mission. The FRA’s goals were to calculate the number of inspectors needed and allocated per region, to meet the demands of time and frequency for inspection, and to focus inspections toward the highest-risk locations and with the poorest safety records. Critics of the model argued that while the FRA had accounted for staffing needs based on historical data and its available budget, it had not incorporated standards or a strategy for addressing the high-risk railroads, or “mission factors.”⁷⁵

The General Accounting Office recommended that the FRA develop a staffing model to account for safety inspection requirements—including disciplines, the time required to perform inspections, and inspection frequency—and a strategy to identify high-risk locations with poor safety records. Three opportunities were highlighted to gather the necessary information. The first involved measuring the time devoted to safety inspections as well as travel and other workload demands down to the hour. The second involved gathering detailed information about railroad activity, including volume and type of railroad activity, as well as physical characteristics of the system including distance and rail-specific infrastructure. The third opportunity involved identifying high-risk locations; more specifically, the agency’s data on prior accidents could help identify target areas with a higher incidence of accidents.⁷⁶

⁷⁴ “Federal Railroad Administration,” Department of Transportation, accessed February 5, 2022, <https://www.transportation.gov/briefing-room/safetyfirst/federal-railroad-administration>.

⁷⁵ John W. Hill Jr. et al., *Railroad Safety: FRA’s Staffing Model Cannot Estimate Inspectors Needed for Safety Mission*, GAO/RCED-91-32 (Washington, DC: General Accounting Office, 1990), 2, <https://www.gao.gov/products/rced-91-32>.

⁷⁶ Hill et al., 7.

The challenge facing the FRA was to maintain a proactive posture by targeting the areas of greatest risk while providing a minimum level of safety inspections and reactive incident or complaint investigations across its entire system. The challenges were much like those facing local all-hazards emergency management agencies, whose mission is to be prepared for and mitigate myriad threats and hazards while providing response and recovery capabilities when an incident occurs. As revealed in the ICCA survey responses for this thesis, agencies' design and resourcing run the gamut from budget-based, to workload-based, to past practices. Interestingly, no survey respondent specifically referenced population as a primary determinant in its staffing mix.

One means of achieving staff capacity is to supplement direct staff positions with contracted or other non-permanent staffing services. This approach often coincides with highway maintenance and construction. Often, the highway authority conducts routine maintenance but outsources more-intensive projects, such as roadway replacement or bridge building, to contractors given their specialties and capacity. Additionally, FEMA uses a mix of non-permanent staff types to meet their mission. These include reservists, on-call employees hired for a specific period, local hires in disaster areas, and FEMA Corps service members.⁷⁷

Two studies in Australia have examined the use of contractors. The first, led by Stephen Rimmer, found that contracting can lead to lower costs but could not determine how contracting impacted service quality.⁷⁸ Despite some potential benefits, Rimmer highlights contract failure and contractual disputes as two risks when relying on contractors. Further, McKeown and Lindorff found that among 28 Australian municipalities, 45 percent of the workforce was full time, 35 percent was part time, and 20 percent comprised temporary or casual employees.⁷⁹ However, workforces outside the

⁷⁷ "Career Paths," Federal Emergency Management Agency, January 21, 2024, <https://www.fema.gov/careers/paths>.

⁷⁸ Stephen J. Rimmer, "Competitive Tendering and Contracting: Theory and Research," *Australian Economic Review* 27, no. 3 (1994): 79–85, <https://doi.org/10.1111/j.1467-8462.1994.tb00851.x>.

⁷⁹ Tui McKeown and Margaret Lindorff, "Temporary Staff, Contractors, and Volunteers: The Hidden Workforce in Victorian Local Government," *Australian Journal of Public Administration* 70, no. 2 (June 2011): 191, <https://doi.org/10.1111/j.1467-8500.2011.00722.x>.

core direct employees received less strategic human resource management, which meant less oversight and less assurance that the services were meeting the strategic goals.⁸⁰ Additionally, the authors strongly recommend that steps be taken to retain institutional knowledge from non-permanent employees if they are employed. This specific recommendation raises one major concern regarding the use of contractors for local emergency management. Much of emergency management relies on relationship building as a part of the preparedness process. Using contractors might not allow emergency management to build the kind of long-standing, deep relationships indispensable for its work. Still, contracting may be a solution for some staffing capacity.

Staff, either direct or contracted, appropriately deployed to work through these efforts can help ensure there are enough people available to engage in these collaborative processes in authentic and lasting ways. Proper workload management allows staff members to develop meaningful relationships with partners. As revealed in the ICCA survey, the Felt Need category had the highest scores from survey respondents, indicating that respondents sense the importance of collaboration. Having adequate personnel to carry out that work should then be prioritized—despite the lower ranking of Resource Investment among survey respondents.

B. ORGANIZATION

The internal and external organizational structure is worth a close examination for its impact on collaborative capacity. For internal organization, what functions and specialties are identified in the organization, how they are grouped, and how much capacity is available for each function are all worth examining. Regarding external organization, the emergency management agency's placement in the overall hierarchy of its local government is of interest—whether the organization is closely aligned with a law enforcement or fire and rescue function or remains independent of them and whether the organization has access to local executives to effectively prepare for, respond to, and

⁸⁰ McKeown and Lindorff, 197.

recover from emergencies. While these organizational decisions may seem trivial, these nuances have real and perceived impacts across local emergency management agencies.

1. Emergency Management as a Function and Placement in the Governmental Hierarchy

Focusing on external organization, there are several common arrangements found in local jurisdictions: emergency management as an independent function, closely aligned with 9–1-1 and emergency communications, under fire and rescue services, or as a law enforcement function. Moreover, at the state level, emergency management may be a military function, part of the state’s department of military affairs and aligned with National Guard functions. This subsection examines the effectiveness of each type of organization and the perception of emergency management aligned with law enforcement vis-à-vis another alignment.

EMAP defines an emergency management program as “a jurisdiction-wide system that provides for management and coordination of prevention, mitigation, preparedness, response, and recovery activities for all hazards. The system encompasses all organizations, agencies, departments, entities, and individuals responsible for emergency management and homeland security for that jurisdiction.”⁸¹ This definition suggests that emergency management’s function is broader than that maintained by law enforcement or fire and life safety professionals. This statement is not intended to discount the important role of law enforcement and fire rescue services in emergency management or such agency alignment, but this broader perspective should inform strategies for situating an emergency management agency.

Even the most effective emergency management entity established as a function of another public safety agency should expect real and perceived hurdles with that arrangement. For instance, given current social movements, especially those surrounding the role of law enforcement, an emergency management function under a law enforcement agency should anticipate hurdles in establishing trust with partners and the public or

⁸¹ “Who Is Accredited? EMAP Accredited Programs,” Emergency Management Accreditation Program, accessed October 12, 2020, <https://emap.org/index.php/what-is-emap/who-is-accredited>.

gaining access to certain communities. Furthermore, by relegating the emergency management function to a larger agency, not only does emergency management run the risk of not establishing an identity, but it also risks being deprioritized when tough decisions must be made around budgets and other resources.

Conversely, aligning emergency management with a larger public safety function might have real benefits. Understandably, emergency management may be misunderstood or not recognized by members of the public, who might conflate local emergency management with FEMA. With many requirements placed on emergency management, building and maintaining a brand as a distinct function is often an afterthought, but it has implications beyond public recognition. For example, elected officials, those legislating and passing budgets, might not be as familiar with the emergency management function as they are with its public safety counterparts. Thus, being an extension of an established public safety agency could assist emergency management with brand recognition and resource allocation, either outright or shared as a force multiplier.

These considerations aside, an equally important organizational aspect is access to the jurisdiction's chief executives. When disaster events occur, critical decisions need to be made quickly. Often, the chief executives need to execute powers reserved specifically for them. In the interest of saving lives, protecting property, and protecting the environment, it is critical that the emergency management function have direct access. Burying emergency management too many levels below the chief executives or cobbling the function together with another critical function might cause critical gaps in service delivery, especially when such services are most needed.

FEMA's placement in the federal organizational hierarchy is relevant to both organizational placement and chief executive access and illustrates the lack of cohesion in the emergency management function. FEMA is a DHS agency that reports to the homeland security secretary; however, it also has a direct line to the president during times of disaster.⁸² FEMA was established as a federal department by President Carter, became a

⁸² "Organization," Federal Emergency Management Agency, October 20, 2021, <https://www.fema.gov/about/organization>.

cabinet agency under President Bill Clinton’s administration, and was situated under the newly formed DHS during President George W. Bush’s presidency. In 2023, congressional lawmakers called for FEMA to be elevated again to a cabinet agency with the introduction of the FEMA Independence Act.⁸³ The legislation’s writers intended not only to ensure federal emergency management’s access to the chief executive but also to separate its function from the homeland security mission, often focused on terrorism and mired in immigration and transportation security issues.

Jason Sirney has studied the organization or placement of 72 emergency management agencies with populations over 275,000 and 60 counties with populations over 800,000. He posits that “an emergency management program’s design, and its placement within the local government, influences several factors that drive mission effectiveness.”⁸⁴ Citing little existing research on the organization of local emergency management programs, Sirney asks, “How can organizational theory and design principles be used to enhance the effectiveness of a local jurisdiction’s emergency management program?”⁸⁵ Similar to this study, Sirney identifies wide variation in the organizational placement of municipal and county-level emergency management (see Tables 7 and 8).

Table 7. Municipal Emergency Management Organizational Placement.⁸⁶

Organizational Alignment	Number	Percent
Independent department	16	22.2%
Executive office	18	25.0%
Public safety	5	6.9%
Fire	19	26.4%
Police	3	4.2%
Inter-jurisdictional agreement	11	15.3%

⁸³ Jesse Scheckner, “Jared Moskowitz Files Bill to Again Make FEMA a Cabinet-Level Agency,” Florida Politics, September 20, 2023, <https://floridapolitics.com/archives/635704-jared-moskowitz-files-bill-to-again-make-fema-a-cabinet-level-agency/>.

⁸⁴ Jason M. Sirney, “Does Theory Matter? Applying Organizational Theory to Develop Effective Local Government Emergency Management Programs” (master’s thesis, Naval Postgraduate School, 2019), 1, <https://hdl.handle.net/10945/62295>.

⁸⁵ Sirney, 4.

⁸⁶ Source: Sirney, 40.

Table 8. County Emergency Management Organizational Placement.⁸⁷

Organizational Alignment	Number	Percent
Independent department	24	40.0%
Executive office	8	13.3%
Public safety	5	8.3%
Environmental protection	1	1.7%
Fire	9	15.0%
Law enforcement	6	10.0%
Public health	2	3.3%
Public works	1	1.7%
Joint powers agreement	4	6.7%

Sirney’s data corroborate the lack of consensus about where local emergency management should be placed in organizational structures. While independent departments are the most common type of organization, other hierarchies, especially aligned with executive offices or fire or police functions are also common. By comparison, Table 9 highlights the organizational alignment of this study’s nine survey respondents.

Table 9. Big-City Emergency Management Agency Organizational Placement Based on this ICCA Survey

Organizational Alignment	Number	Percent
Independent department	4	44.4%
Executive office	2	22.2%
Public safety	2	22.2%
Fire	1	11.1%

This study found that of the four most collaborative agencies, three were independent, and one was an executive office. These findings align with recommendations made by Sirney. He urges careful consideration by jurisdictional leaders about the placement of the emergency management function. While not outright advocating one organizational

⁸⁷ Source: Sirney, 95.

alignment over another, Sirney offers several recommendations when making a determination. First, the emergency management program must be empowered through an internal hierarchical structure that integrates subject-matter expertise, has appropriate authority to carry out the mission, and limits intra-organizational conflict. Second, the program must have jurisdictional executive access—that is, the executive, such as a mayor or county executive, is responsible for jurisdiction-wide decision-making and often has a statutory responsibility. Third, the program needs executive sponsorship and prioritization. Fourth, collaboration needs to be encouraged with horizontal and vertical channels of communication. Fifth, the organizational culture must be allowed to mature for stakeholders to develop consistent expectations from the program and, thus, build their own culture or preparedness.⁸⁸ Sirney’s recommendations lean toward installing local emergency management programs that are independent of a “parent” organization and appropriately elevated within the larger overarching organization, trends that are illustrated in the following municipal examples.

Examples in Practice

The placement of agencies in government is an evolving discussion. Between 2020 and 2022, Maryland, Oregon, the City of Philadelphia, and the City of Seattle all announced moves to independent departments—away from military departments for the state agencies and away from a fire department and police department, respectively, for each local agency.⁸⁹ These moves—overlapping with the COVID-19 pandemic and social unrest of 2020—would allow greater flexibility and answer “community calls to rethink

⁸⁸ Sirney, 79–81.

⁸⁹ “MEMA Becomes the Maryland Department of Emergency Management,” Maryland Department of Emergency Management, September 30, 2021, <https://news.maryland.gov/mdem/2021/09/30/mema-becomes-the-maryland-department-of-emergency-management/>; “Oregon Department of Emergency Management Brings a New Era of Emergency Management to the State,” Oregon Department of Emergency Management, July 1, 2022, https://www.oregon.gov/oem/equity/Documents/NR-070122_OEM_Establishment_EN.pdf; Jeffrey Kolakowski, “Mayor Announces Appointment of Dominick Mireles as City’s New Director of OEM,” City of Philadelphia, April 1, 2022, <https://www.phila.gov/2022-04-01-mayor-announces-appointment-of-dominick-mireles-as-citys-new-director-of-oem/>; Seattle Office of Emergency Management, *2020 Annual Report* (Seattle: Seattle Office of Emergency Management, 2022), <https://www.seattle.gov/documents/Departments/Emergency/AnnualReports/2020%20Annual%20Report%20FINAL.pdf>.

public safety.”⁹⁰ Clearly, where an agency is situated has real and perceived impacts on its ability to effect its mission, thus highlighting the need for a better understanding of the influence of government placement on collaboration and effectiveness.

2. Urban Area Security Initiative

The UASI is a federal funding program administered by FEMA since 2003, with the purpose of bolstering regional preparedness against terrorism with federal funding.⁹¹ As part of the Homeland Security Grant Program, the UASI’s aim is to “enhance regional preparedness and capabilities in designated high-threat, high-density areas.”⁹² All nine respondents in this study’s ICCA survey reported being part of a UASI, comprising “local government policymakers, officials from first responder agencies, and officials from quasi-governmental authorities like ports and transit agencies.”⁹³

In practice, UASIs are generally organized in three ways. First, planning and preparedness-oriented UASIs leverage federal funds to form various workgroups and other structures to create collaborative solutions to address the threats and hazards facing their region. Not only do they make shared investments, but they also take collaborative approaches to planning and training. This first type of UASI was the most common among the survey respondents. Second, operational UASIs are like planning and preparedness UASIs, but they include operational components that could activate in response to or recovery efforts for disasters and emergencies within or outside the UASI area. This function involves shared or dedicated resources and personnel who respond under the UASI organization as opposed to deploying as part of an individual jurisdiction. This latter framework was the least common UASI organization reported in the survey. The third organizational type of UASI is a fiduciary or financial-only organization, serving primarily

⁹⁰ Seattle Office of Emergency Management, *2020 Annual Report*, 5.

⁹¹ William O. Jenkins Jr., *Urban Area Security Initiative: FEMA Lacks Measures to Assess How Regional Collaboration Efforts Build Preparedness Capabilities*, GAO-09-651 (Washington, DC: Government Accountability Office, 2009), 5, <https://www.gao.gov/assets/gao-09-651.pdf>.

⁹² “Homeland Security Grant Program,” Federal Emergency Management Agency, accessed January 15, 2023, <https://www.fema.gov/grants/preparedness/homeland-security>.

⁹³ Jenkins, *Urban Area Security Initiative*, 6.

to manage the administrative requirements of the Homeland Security Grant Program. This UASI type does not participate in significant planning or preparedness activities, nor does it deploy resources to an incident. This fiduciary or financial-only organization was the second-most common type among survey respondents.

By design, UASIs form collaborative organizations between different jurisdictions and different functions. UASIs frequently work on shared priorities through joint planning, training, or resource investments. The UASI funding program has contributed significant money to local authorities for regional priorities, topping \$832.5 million in a year at the height of the program. Nevertheless, a 2009 Government Accountability Office investigation into how FEMA measured UASI regions' collaborative efforts found that "FEMA [had] no measures to determine the impact of the UASI regions' collaborative efforts on regional preparedness."⁹⁴ In a 2014 study, Errett et al. concurred after examining whether the financial incentive of the UASI grant program improved collaboration. In surveying 49 funded urban areas, the researchers found no information on the collaboration and outcomes from the UASI's funded participants. Instead, participants devised and used their own methods for measuring their collaboration, including AARs of exercises and real-world events and assessments independent of FEMA's requirements.⁹⁵

While the UASI program can and should be used to strengthen urban areas, which extend beyond political boundaries, the program may fall short of meeting that goal. According to Errett et al., 88 percent of regions reported operationalizing regional collaboration by working together, and 92 percent reported sharing resources.⁹⁶ However, even with these high percentages, the UASI program appeared to have some flaws. For example, 10 percent of the respondents reported spending less than a quarter of the funding allocation on regional or shared capabilities as opposed to jurisdiction-specific

⁹⁴ Jenkins, 30.

⁹⁵ Nicole A. Errett et al., "Regional Collaboration among Urban Area Security Initiative Regions: Results of the Johns Hopkins Urban Area Survey," *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science* 12, no. 6 (2014): 362, <https://doi.org/10.1089/bsp.2014.0057>.

⁹⁶ Errett et al., 362.

capabilities.⁹⁷ The researchers conclude that program participants’ positive perceptions of UASI-enabled collaboration illustrate the grant funds’ potential for increasing collaborative preparedness with a lasting effect.⁹⁸ However, the researchers recommend further research to compare UASI with non-UASI regions and to investigate the impact of regional preparedness on national preparedness and the drivers or incentives for it. Further, how a UASI is organized—around planning and preparedness, operations, or fiduciary responsibilities—may have a significant impact on its priorities, the way it leverages funds, and the overall success of collaboration and the region’s efficacy.

By design, the UASI program requires collaboration to “enhance regional preparedness.”⁹⁹ Regions are composed of individual jurisdictions and even more sub-level departments and actors. While all of this study’s survey participants were UASI members, how these UASIs were implemented varied greatly. Still, evidence suggests that UASIs may contribute positively to collaboration and regional preparedness. Thus, the implementation and evaluation of the UASI model warrants more research—not only to measure the return on investment but also to identify an existing and workable model to influence collaboration. Practitioners and policymakers must determine whether there is regional preparedness or the anchor (largest) jurisdiction has become the center of gravity (and capability) for other jurisdictions to orbit. Furthermore, whether broad capability has been built or funds have been funneled to the same few capability types is a crucial question to answer. Finally, practitioners need to know how to organize these unique entities optimally.

3. Support from a County

Several of the study participants’ jurisdictions were city-county combinations while others were city jurisdictions with county emergency management functions, lending local emergency management support before respective state entities. City jurisdictions that rely on counties have nearly instantaneous assistance and often a shared responsibility for

⁹⁷ Errett et al., 363.

⁹⁸ Errett et al., 364.

⁹⁹ Federal Emergency Management Agency, “Homeland Security Grant Program.”

emergency management. This degree of mutual support is because county staff and resources are often in or immediately adjacent to the city. Further, the county has its own responsibilities and requirements in providing services, such as a county sheriff's office with specific duties in addition to the local police department.

MacManus and Caruson have studied the effectiveness of county- and city-level collaboration, seeking to address the issue of which had more extensive and higher-quality relationships. In a statewide survey of Florida county and city officials, 15 public-sector entities and 16 private-sector entities were asked to identify the total number of entities they interacted with and the quality of those interactions.¹⁰⁰ Notably, county officials reported higher-quality networks with public and private partners than city officials did. Still, the study found that collaboration at the local level, both county and municipal, was high, with an average of 10.3 connections for the 15 possible public-sector entities and 10.4 for the 16 possible private-sector entities.¹⁰¹ However, MacManus and Caruson found that county officials gave lower-quality ratings to their collaboration with neighboring cities.

The authors surmise this response might have been due to competition for resources, especially in urban areas.¹⁰² Another finding was that county officials rated their collaboration with state and federal partners more favorably than municipal officials did, but both county and municipal respondents rated their horizontal partnerships more favorably than vertical ones. This uncertainty about whether the interaction discrepancies were the result of different county or municipal responsibilities speaks to the benefits of additional staff capacity to make and maintain those collaborative relationships at different levels of government—or the discrepancies might simply be the result of geography.

The authors conclude that further research must investigate local emergency management, both municipal and county based. For emergency management at the local level, practitioners must understand how overlapping jurisdictions may contribute to or detract from collaborative capacity. Do these relationships serve as force multipliers by

¹⁰⁰ MacManus and Caruson, "Emergency Management."

¹⁰¹ MacManus and Caruson, 286–87.

¹⁰² MacManus and Caruson, 289.

fostering richer, more numerous collaborations, or do they create unhealthy competition for resources and a market share of the relationships and collaborations to be managed?

4. Operational Organization

Collaboration requires an actual mechanism or capacity to collaborate during all phases of emergency management. Many emergency management agencies spend most of their time in the preparedness phase. Response, recovery, and mitigation are often less common. Regarding the origins of emergency management, Phelan states, “Some forms of emergency management were evident following World War II, focused on Civilian Defense. The job was largely preparedness. . . . [Today,] a major difference between the role of the chief of a first responder unit and the role of an emergency manager is the duty related to preparedness or protection.”¹⁰³ Emergency managers typically spend their time researching and writing emergency plans, developing key relationships, exercising, or preparing resources. In contrast to first responder agencies, emergency managers’ work does not typically derive from 9–1-1 calls or other requests for service.

Because of the nature of the work, which commonly follows a traditional work schedule, one challenge that local emergency management agencies face is the capacity to participate in response activities—particularly those that do not rise to the level of an EOC activation or other local emergency declaration. This situation can create critical experience and plan validation gaps, as well as partnership and collaboration disconnects with entities responding to “routine” emergencies frequently. Response, especially for lower-scale events, is good for fostering relationships, building trust, and rehearsing and refining elements of emergency and disaster plans.

This thesis asked survey respondents about their organizational components for response operations. Respondents identified several operational organization types in their agencies. On-call duty officers are agency staff who perform a primary function and have a secondary function to rotate for an on-call requirement to handle emergency management needs as a single resource. On-call teams consist of several agency staff who perform a

¹⁰³ Phelan, *Emergency Management and Tactical Response Operations*, 6.

primary function and have a secondary function to rotate through an on-call requirement to handle emergency management needs with multiple team members. The primary difference between these two types is that duty officers typically provide remote coordination from the EOC while teams provide remote and field capabilities.

While on-call duty officers and teams provide some response capacity, it is often at the expense of less-trained and less-experienced personnel as the response component is a collateral duty. Additionally, there is an inherent delay in engagement when relying on a capability that is on call. In contrast to on-call models, some of the surveyed jurisdictions reported having dedicated operational response elements for incident support and coordination. One element is a watch desk function that typically provides dedicated remote support. Another element is the employment of dedicated responders to perform field functions and other emergency management activities.

All surveyed agencies relied on some element of on-call staffing. An on-call duty officer was the most common operational element cited—seven of nine agencies reported having that operational element, and the other two agencies reported having full on-call teams. Three of the nine survey respondents also had a dedicated watch desk function, and two of those three had full-time field responders. The two agencies with full-time responders and watch desks both had high scores in the Resource Investment and Social Capital categories of the ICCA survey. High social capital in the survey was associated with knowing who to contact in other organizations, taking initiative to build relationships, and having strong networks. Additionally, two agencies with only on-call duty officers had high scores for Social Capital.

Generally, this study found no relationship between relying on on-call operational elements and employing full-time and dedicated operational elements. However, the participants represented a range of organizational types. As local jurisdictions must often be judicious in their use of resources, the effect of full-time dedicated operational elements on local emergency management programs would be worth investigating. Would they influence collaboration or primarily affect the management of workloads and tasks?

Examples in Practice

From resource-scarce to resource-rich organizations, local emergency managers have employed response capacity in several ways. Wake County, North Carolina, which includes Raleigh, employs a staff duty officer for the program. The program ensures that emergency management staff are available 24/7 through a rotational on-call model to provide technical and operational support for all hazards.¹⁰⁴ In another jurisdiction, the City and County of San Francisco maintains an emergency management watch center that serves as a central information hub to create a common operating picture.¹⁰⁵ In a third example, Harris County, Texas, home to Houston, has two full-time industrial liaisons in the Harris County Office of Homeland Security and Emergency Management charged with working directly with the private chemical sector before, during, and after high-profile chemical emergencies in the county. The function is promoted as a key trust broker between various levels of government and the private sector. As summarized by one community member, “The IL [industrial liaison] knows who’s who, where’s where, and what’s what, which eases the tension that results for a mix of cities, elected officials, authorities and citizens who lack this broad knowledge” (brackets in the original).¹⁰⁶

C. ACCREDITATION AND STANDARDS

Accreditation and standards are a way to achieve program accountability at a desired level of service delivery. This study reviewed respondent’s participation in EMAP, the preeminent accreditation program for emergency management agencies, and FEMA’s annual THIRA/SPR. In theory, participation in these efforts drives collaboration and, ultimately, program effectiveness.

¹⁰⁴ “Staff Duty Officer Program,” Wake County, North Carolina, accessed December 26, 2023, <https://www.wake.gov/departments-government/fire-services-emergency-management/emergency-management/staff-duty-officer-program>.

¹⁰⁵ “DEM Watch Center and Emergency Operations Center,” City and County of San Francisco, accessed December 10, 2023, <https://sf.gov/information/dem-watch-center-and-emergency-operations-center>.

¹⁰⁶ Jamie Hannan, “Benefits of Industrial Liaisons—A Harris County Example,” Domestic Preparedness, January 11, 2023, <https://www.domesticpreparedness.com/preparedness/benefits-of-industrial-liaisons-a-harris-county-example/>.

1. Accreditation

Five of nine survey respondents, including two of the four most collaborative respondents, reported having or seeking accreditation through EMAP, an independent non-profit organization that has developed 73 emergency management standards across 13 categories.¹⁰⁷ According to EMAP’s website, relatively few local governments participate in the voluntary program. Of the 3,031 counties in the United States, according to 2017 census data, only 24 counties were accredited through EMAP in November 2023.¹⁰⁸ Of the 21 big cities targeted in this study, seven were accredited at that time, and 33 of 50 U.S. states were too.¹⁰⁹ EMAP’s standards do not specifically address collaboration; however, coordination is referenced in a limited fashion.¹¹⁰

Part of the low participation may be due to a lack of perceived benefits of the process or clear mandate for accreditation. The process does typically require application fees before a lengthy and recurring assessment effort begins. Further, accreditation does little more than provide a seal of satisfactory compliance with the standards, and notably, participation is voluntary. Motivation for completing the process is generally due to an organization’s commitment to accreditation and standards of achievement.

A comparison of accreditation practices in other sectors shows a similarly disjointed landscape with sporadic participation. For police agencies, the Commission on Accreditation for Law Enforcement Agencies is a nationally available program. In addition to this nationwide program, the Department of Justice lists 34 states with their own state-based accreditation program and an additional four states currently developing a program

¹⁰⁷ “Emergency Management Standard,” Emergency Management Accreditation Program, accessed November 12, 2023, <https://emap.org/emergency-management-standard/>.

¹⁰⁸ “2017 Census of Governments—Organization,” U.S. Census Bureau, October 28, 2021, <https://www.census.gov/data/tables/2017/econ/gus/2017-governments.html>; Emergency Management Accreditation Program, “Who Is Accredited?”

¹⁰⁹ Emergency Management Accreditation Program, “Who Is Accredited?”

¹¹⁰ Emergency Management Accreditation Program, *Emergency Management Standard*, EMAP EMS 5–2022 (Falls Church, VA: Emergency Management Accreditation Program, 2022), <https://emap.org/wp-content/uploads/2023/04/EMAP-EMS-5-2022-Emergency-Management-Standard.pdf>.

as of November 2023.¹¹¹ For fire departments, the Center for Public Safety Excellence offers accreditation, but its records show only 13 percent of the U.S. population is protected by any of the 310 accredited agencies.¹¹² State and local assessment and certification programs by other emergency management agencies with jurisdiction are also numerous. For example, Cuyahoga County, Ohio, administers the ReadyCertify program, which provides a set of emergency preparedness standards for local jurisdictions and organizations within the county to attain the certification.¹¹³

2. Standards and THIRA/SPR

Beyond accreditation, standards are an additional way to drive desired performance outcomes. The National Fire Protection Association (NFPA) has been an authority on various safety codes and standards for more than 125 years. For emergency management, the NFPA has maintained the *Standard on Continuity, Emergency, and Crisis Management* since approximately 1995. According to the NFPA’s website, that standard, also identified as NFPA 1600, “[had] been adopted by the U.S. Department of Homeland Security as a voluntary consensus standard for emergency preparedness.”¹¹⁴ In 2023, NFPA 1600 was consolidated with two other standards into NFPA 1660, *Standard for Emergency, Continuity, and Crisis Management: Preparedness, Response, and Recovery*. It is unclear how many professional or governmental organizations have adopted some or all of the standards.

While FEMA sets significant doctrine and policy for local emergency management programs, it stops short of establishing standards or accrediting individual programs. However, FEMA administers a standard process known as THIRA/SPR for objective

¹¹¹ “Law Enforcement Agency (LEA) Accreditation,” Office of Community Oriented Policing Services, accessed November 18, 2023, https://cops.usdoj.gov/LEA_accreditation.

¹¹² “Accredited Agencies,” Center for Public Safety Excellence, accessed November 18, 2023, <https://www.cpse.org/accreditation/accredited-agencies/>.

¹¹³ “Ready Certify Emergency Management Certification Program,” Cuyahoga County, Ohio, accessed November 18, 2023, <https://cuyahogacounty.gov/ready/businesses-schools-communities/readycertify>.

¹¹⁴ National Fire Protection Association, *Standard on Continuity, Emergency, and Crisis Management*, NFPA 1600 (Quincy, MA: National Fire Protection Association, 2019), <https://www.nfpa.org/codes-and-standards/1/6/0/nfpa-1600>.

setting and performance benchmarking. Its processes primarily inform the National Risk and Capability Assessment, requiring high-risk urban areas, states, and territories to identify their hazards of concern, set targets for standard capabilities, and measure these capabilities annually as an eligibility requirement for the federal Homeland Security Grant Program.¹¹⁵

The THIRA/SPR process requires participants to develop several threat and hazard scenarios to estimate impacts in standardized categories. Jurisdictions must then set capability targets for a standardized set of 32 capabilities and measure their ability to meet those capabilities. Then, they may identify gaps related to planning, organization, equipment, training, and exercises. Several of the core capabilities identified could support collaboration. Planning, operational coordination, intelligence and information sharing, community resilience, and situational assessment—all core capabilities identified in the THIRA/SPR process—support collaboration from both a process and a technical capability standpoint.¹¹⁶ While all survey participants for this study confirmed they had submitted a 2019 THIRA/SPR, this universal response was expected. Completion of this federal process is a requirement for grant funding eligibility. In failing to complete the assessment, a jurisdiction would forfeit millions of dollars for preparedness annually.

However, despite universal compliance among the participants and THIRA/SPR's development by the nation's emergency management experts at FEMA, some criticize the THIRA/SPR process for its lack of specificity and limited time allotted for the assessment. In 2018, Jasper Cooke characterized THIRA as “the most commonly used measurement tool for preparedness in the United States.”¹¹⁷ From studying different ways to measure resilience, Cooke makes two recommendations to improve the THIRA process: publish a clear list of indicators for each core capability, and include additional quantitative measures

¹¹⁵ Federal Emergency Management Agency, *Developing and Maintaining Emergency Operations Plans: Comprehensive Preparedness Guide (CPG) 101*, version 3.0 (Washington, DC: Federal Emergency Management Agency, 2021), https://www.fema.gov/sites/default/files/documents/fema_cpg-101-v3-developing-maintaining-cops.pdf.

¹¹⁶ Federal Emergency Management Agency, “Mission Areas and Core Capabilities.”

¹¹⁷ Jasper Cooke, “Measuring State Resilience: What Actually Makes a Difference?” (master's thesis, Naval Postgraduate School, 2018), 19, <https://calhoun.nps.edu/handle/10945/60383#>.

for the assessment.¹¹⁸ Further, the THIRA/SPR process shows weaknesses in its deference to individual participating jurisdictions' standard-setting and assessments. While FEMA provides "standardized impact and target language," participants are permitted to set their own impact estimations and targets.¹¹⁹ It is akin to grading oneself on a test that one created. Finally, in her study of the feasibility of a nonlinear adaptive approach to disaster response, Samantha Phillips is critical of the THIRA process, primarily of the short timeframe with which to complete the assessment.¹²⁰

FEMA has offered criticism of THIRA as well. In a 2019 report, FEMA identifies the following gaps:

- A lack of standardization has affected the data collected. Emergency managers use different language to describe impacts and capabilities.
- The scenarios are not an exhaustive list of risks. FEMA admittedly uses the fewest scenarios possible to challenge the nation's capabilities, very likely neglecting some risks.
- The scenarios do not meet a specific likelihood or frequency, which is largely due to a lack of data on the frequency and likelihood of terrorism, for example, in major urban areas.
- THIRA focuses on the immediate and local impacts, not cascading scenarios. Challenges like supply chain disruptions and long-term psychological impacts are not measured.¹²¹

Considering these criticisms of the THIRA/SPR process, it bears repeating that Metrics was the lowest-rated factor across all respondents to the ICCA survey for this study and

¹¹⁸ Cooke, 82.

¹¹⁹ Federal Emergency Management Agency, "National Risk and Capability Assessment."

¹²⁰ Phillips, "Rethinking Disasters," 51.

¹²¹ Federal Emergency Management Agency, *2019 National Threat and Hazard Identification and Risk Assessment (THIRA): Overview and Methodology* (Washington, DC: Federal Emergency Management Agency, 2019), 14–18, https://www.fema.gov/sites/default/files/2020-06/fema_national-thira-overview-methodology_2019_0.pdf.

the baseline study. Thus, metrics for collaboration—and general application—may be a more elusive element in assessing programs.

Accreditation and standards are a best practice that big-city emergency management agencies currently pursue and attain. Several local agencies have displayed their accreditation or identified goals and performance metrics related to it. For example, the District of Columbia Homeland Security and Emergency Management Agency reports on its compliance with EMAP standards in an annual performance plan.¹²² In a similar effort, the Denver Office of Emergency Management highlights “beginning the Emergency Management Accreditation Program” in its 2022 outlook report.¹²³

D. EXPERIENCE

Focusing events are defined as sudden and uncommon significant events that have the occasion to shape public policy. Recent examples in the homeland security sphere include the 9/11 terrorist attacks with the findings of the *9/11 Commission Report* and Hurricane Katrina with the Post-Katrina Emergency Reform Act. One driving philosophy is that not until policymakers live through such tragic, formative events can they act to fix whatever led to the incidents. More broadly, these events lead to windows of opportunity for learning and other policy changes. Presumably, the lived experience allows participants to find value or see gaps more clearly than before the focusing event. Thus, formative events for emergency managers hypothetically refine and perfect their roles. Similarly, agencies with more experience have better processes for collaboration and success. The idea is that practice makes perfect.

Another indicator of the value of experience is the sheer number of recommendations made after a significant emergency or disaster event. The practice of crafting AARs and devising improvement plans (IPs) is common in emergency management. Often after a major incident and AAR/IP process, oversight agencies extend

¹²² District of Columbia Homeland Security and Emergency Management Agency, *FY2024 Performance Plan* (Washington, DC: Government of the District of Columbia, 2023), 7, <https://oca.dc.gov/sites/default/files/dc/sites/oca/publication/attachments/HSEMA24.pdf>.

¹²³ Denver Office of Emergency Management, *2021 Annual Report* (Denver: City and County of Denver, 2022), 13, <https://denvergov.org/files/sharedassets/public/v/1/final-2021-annual-report.pdf>.

significant recommendations about the actions and organization of the emergency management program. It makes sense that more events lead to more recommendations, which lead to more refined programs. In addition to the Sonoma County and City of San Jose examples highlighted in Chapter I, Buffalo, New York, recently experienced a significant disaster event that reshaped its operations. The December 2022 blizzard claimed 31 lives, bringing about a significant number of recommendations for Buffalo across the emergency preparedness cycle to better prepare for future storms. Notably, for emergency management, this extreme weather event led to hiring a full-time emergency manager, providing training, preparing culturally relevant materials, providing support to businesses, and coordinating with other levels of government, as identified in the AAR.¹²⁴

Following interviews with various emergency management professionals, Samantha Phillips noted, “Few respondents referred to disasters as best practices, but rather spoke of the teachable moments and complexity of the various operations.”¹²⁵ Waugh and Streib have asserted this idea as well, observing that the disaster experience makes communities more resilient to future disasters, particularly by involving nongovernmental participants.¹²⁶ Certainly, drills and exercises are meant to test capabilities and identify gaps, but real-world experience has shown greater value in this study.

This study gauged real-world experience at the organizational and individual level—capturing the influence of an event transforming an organization and, by extension, the individuals who work there. This phenomenon was measured through the number of presidentially declared disasters for the target jurisdictions since September 11, 2001; the number of EOC activations; and the number of events that individual team members spent deployed to other jurisdictions’ disasters.

¹²⁴ Sarah M. Kaufman et al., *Lessons Learned from the Buffalo Blizzard: Recommendations for Strengthening Preparedness and Recovery Efforts* (New York: New York University, 2023), https://wagner.nyu.edu/files/faculty/publications/NYU%20Buffalo%20Blizzard%20Report%20-%20June2023_0.pdf.

¹²⁵ Phillips, “Rethinking Disasters,” 58.

¹²⁶ Waugh and Streib, “Collaboration and Leadership,” 133.

With the idea that experience can lead to more effective disaster management, but not necessarily wanting more disasters, one area for further investigation involves structures and practices that provide this vital real-world experience. For this reason, Phillips recommends using planned training events to develop and refine processes.¹²⁷ Organizing training events to validate plans and field-train emergency management staff can be an effective way to increase experience. These events often provide a predictable lead-up to operations and a controlled and resource-ready environment for testing operational capacity. More specifically, the events provide opportunities for staff to experience various contingency, communications, and coordination efforts in a controlled yet realistic environment. Such experiences also provide a space to validate processes and tools and to rehearse stakeholder roles and responsibilities.

Another way for emergency managers to gain experience is through participating in various disaster responses and recoveries. FEMA personnel, both the regular and reservist workforce, have an emergency deployment expectation.¹²⁸ These personnel are frequently deployed within their region or across the U.S. and its territories for varying lengths of time. Many state agencies also employ the Emergency Management Assistance Compact (EMAC) to share specialized resources like personnel across states during incidents. Local personnel have the fewest incident-sharing opportunities, particularly for larger incidents. Some local personnel have been fortunate enough to join incident management teams, federal urban search and rescue teams, wildfire teams, or other strike forces, but the access is inconsistent. Some local jurisdictions have gone as far as working with others and sharing resources directly by entering into mutual aid agreements and other arrangements. However, this option is typically limited to larger agencies with the resources to make these arrangements and spare the personnel for support.

¹²⁷ Phillips, “Rethinking Disasters,” 58.

¹²⁸ Federal Emergency Management Agency, “Career Paths”; “Reservists (On-Call),” Federal Emergency Management Agency, March 11, 2024, <https://www.fema.gov/careers/position-types/reservists>.

Examples in Practice

The real-world experience of collaboration and participation in emergencies and disasters can take many forms. The Chicago Office of Emergency Management and Communications works closely with planned music festivals to ensure that there are contingency plans for severe weather, safety messaging is shared with attendees, transportation is well coordinated, and emergency communications work as intended.¹²⁹ The DC Homeland Security and Emergency Management Agency tracks and reports the number of days that the EOC is activated, that staff are deployed to incident sites, and that staff are deployed to other jurisdictions.¹³⁰ Similar to Chicago and DC, New York City Emergency Management reports the number of planned events, significant incident responses, and mutual aid deployments to other jurisdictions.¹³¹

E. SUMMARY

There are many potential contributors to collaboration among local emergency management agencies. Each might warrant its own study to support the 21 biggest cities in the United States as well as the thousands of other local jurisdictions. Collaboration is a key to success, and resources can be limited. Ensuring that local agencies are getting the most for their efforts is crucial. The final chapter discusses several targeted recommendations based on the results and research of this study.

¹²⁹ “Lollapalooza Returns to Grant Park, August 3–6,” Chicago Emergency Management and Communications, August 1, 2023, https://www.chicago.gov/content/city/en/depts/oem/provdrs/emerg_mang/news/2023/august/Lollaisback.html.

¹³⁰ District of Columbia Homeland Security and Emergency Management Agency, *FY2024 Performance Plan*.

¹³¹ New York City Emergency Management, *2022 Annual Report* (New York: New York City Emergency Management, 2023), <https://storymaps.arcgis.com/stories/edf86a77c9b048438cb59b6ba90b33e1>.

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V. CLOSING

In further investigating the four domains of staffing, organization, accreditation and standards, and experience, numerous opportunities for initiatives or further investigation have emerged. In fact, the primary research question in this thesis may have well generated several other stand-alone and potentially valuable research opportunities.

A. SUMMARY

This thesis linked high collaboration to effectiveness and sought to uncover what made big-city emergency management agencies more collaborative. The research looked for drivers of collaboration by gathering details on how agencies staff themselves, how they are organized adjacent to or within other agencies, what accreditation and standards they pursue, and what experiences they have to inform their responses to disasters. However, no concrete themes emerged among the survey responses, neither among the most nor among the least collaborative agencies.

In the absence of consensus or themes among the survey results, another truth emerged. Local emergency management is implemented in vastly different ways across big cities, and that may well be an indicator of local emergency management as whole. Now, different does not mean “wrong,” but it certainly is worthwhile to examine what best practices are informing interorganizational collaborative capacity. Not only are significant public funds being spent on emergency management functions, but these functions will continue to be called on during the most difficult times.

B. RECOMMENDATIONS

1. **Staffing: Create a Staffing Model That Accounts for Proactive and Reactive Tasks**

Among survey respondents, the staffing-to-population ratio ranged from 1:4,970 to 1:240,142. These figures raise the question of how many emergency management staff are needed. As reported in Chapter IV, the FRA faced a similar question with its safety inspectors: How many inspectors were needed to proactively inspect the rails and respond

to rail incidents and complaints? Drawing on the FRA’s improvement design and using emergency management’s mitigation, preparedness, response, and recovery phases, three analyses could obtain a desired staffing number.

First, focusing on the proactive activities of mitigation and preparedness, emergency managers could use the identified threats and hazards of the jurisdiction and the number of preparedness plans suggested in FEMA’s *Comprehensive Preparedness Guide 101*. FEMA outlines 21 planning areas under emergency and recovery support functions, 10 additional general functions, and 12 hazard or threat-specific areas, for a total of 43 potential emergency planning efforts.¹³² Each of these efforts has its own set of stakeholders, tools, and critical tasks that require identification, documentation, training, and exercising. Those plans and the associated efforts could be assigned time values, that is, the number of hours, days, or weeks it takes for each individual effort to progress through a collaborative planning effort and the follow-on training and exercising. That number could then be divided among standard working hours to derive a desired number of full-time, part-time, and contracted employees.

Second, in keeping with the proactive work of emergency management, the program should inventory any administratively required efforts involving both planning and operational functions. This accounting would include the federally mandated completion of a hazard mitigation plan and THIRA/SPR, as well as administrative functions like financial and performance management. Similarly, time values could be derived for each effort to determine the necessary staffing.

Third, emergency management must account for the more reactive response and recovery phases. This type of workload planning could look like the law enforcement models that rely on calls for service as an input for staffing requirements. Response and recovery-oriented workloads could be derived based on historical records and projected trends. Records of major response and recovery activities should be maintained through

¹³² Federal Emergency Management Agency, *Developing and Maintaining Emergency Operations Plans: Comprehensive Preparedness Guide (CPG) 101*, version 2.0 (Washington, DC: Federal Emergency Management Agency, 2010), C-12, https://www.fema.gov/sites/default/files/2020-05/CPG_101_V2_30_NOV2010_FINAL_508.pdf.

AARs and other means to account for EOC activations and field support services. The understanding of historical workload could be coupled with climatological outlooks and planned event schedules to derive an estimate for the time that should be devoted to these activities in a more reactive approach. In jurisdictions that warrant and can afford full-time response staff, the need would be addressed by adding those resources directly. In jurisdictions that rely on on-call capabilities, the core mitigation and preparedness staff's workloads could be lightened to provide capacity to conduct the estimated response and recovery activities. However, adjusting the workload might require adding mitigation and preparedness staff to account for the work that was taken off others.

2. Staffing: Create Goals and Metrics for Staff Collaboration

Staffing alone might not have a positive influence on collaboration without direction. To unlock these individuals' potential as boundary spanners, they must be provided the right tools, be given incentives, have goals and metrics, and be placed into collaborative structures. As shown in this study's survey results, Metrics was found to be the lowest-rated element for all respondents—it is an area that could benefit from new ideas.

In *Project Management 2.0*, Harold Kerzner dedicates a full chapter to metrics. Kerzner's ground rules for selecting metrics includes ensuring they are worth collecting, ensuring that what is collected is used, ensuring that metrics are informative, and training the team on the use of the metrics.¹³³ With those recommendations in mind, the following metrics are proposed for emergency management collaboration: (1) identify the number of collaborators; (2) ensure the accuracy of contact information on file; (3) ascertain the diversity of collaborators' field of expertise or lived experience for a given project; (4) track time spent in joint preparedness activities (planning, training, exercises); and (5) calculate the net promoter score from formal stakeholders and the public.

¹³³ Harold Kerzner, *Project Management 2.0: Leveraging Tools, Distributed Collaboration, and Metrics for Project Success* (Hoboken, NJ: Wiley, 2015), 82.

3. Organization: Assess the Strengths and Weaknesses of the Various Configurations of Local Emergency Management

This thesis has made several points of deep inflection on the organization of emergency management agencies. While municipalities would be unlikely to accept a standard for situating local emergency management agencies within government, there is certainly an opportunity to build a body of research on local emergency management's function as an independent organization; an executive office; or part of law enforcement, the fire service, or another function. This issue should be investigated by blending perspectives relating to authorities, approaches, perceptions, and resources.

4. Organization: Compare the Effectiveness and Organization of UASI and Non-UASI Areas

Practitioners should measure the effectiveness of UASI areas vis-à-vis non-UASI areas, including their organization as fiscal, preparedness, or operational entities. Notably, the UASI already incentivizes collaboration today. While they encourage collaboration among some local emergency management functions, UASIs comprise only 40 urban areas across 26 states and the District of Columbia.¹³⁴ Furthermore, no definitive assessment has examined whether UASIs—as opposed to non-UASI areas—are driving collaboration and, thus, preparedness. In addition to measuring whether preparedness has increased with regional collaboration, a subset of this research could answer whether UASIs are best configured as fiscal, preparedness, or operational organizations for optimal collaboration.

5. Organization: Identify Indicators and Optimal Configurations for Operational Emergency Management Elements

Researchers should undertake a project to identify the indicators that warrant different operational emergency management elements—including on-call teams, duty officers, watch desks, and dedicated responders—and the optimal organization of each. The American public has come to expect certain capabilities from other public functions, such as the fire service. When calling 9-1-1, the public can expect assistance with fires, hazardous materials, building collapses, and medical situations. Each of these requires a

¹³⁴ Federal Emergency Management Agency, "Homeland Security Grant Program."

specific resource with associated tools, training, and people. To meet the basic services expected of emergency management, agencies are employing different internal organizations, chiefly on-call teams, duty officers, watch desks, and dedicated field responders. Such operational elements are both a necessity and a luxury, depending on the jurisdiction. Thus, a standard for operationalizing emergency management services in a 24/7 capacity should be developed based on best practices in workload management and perspectives from key stakeholders, with the goal of building stronger connections between organizations.

6. Accreditation and Standards: For FEMA’s Continuous Improvement Guidance, Derive Collaboration-Related Quantifiable Variables and Require After-Action Activities

Despite existing standards for program elements, a standardized measure of collaborative ability and outcomes does not exist. A Johns Hopkins survey of UASI jurisdictions found that AARs were a common way to measure outcomes both regionally and locally.¹³⁵ The researchers suggested that common variables could be derived to better measure collaboration. FEMA currently provides technical assistance guidance for continuous improvement through the use of AARs.¹³⁶ Thus, using this guidance, practitioners should derive quantifiable variables specific to collaboration, and policymakers should mandate that after-action activities be part of presidential disaster declarations or following some other threshold.

7. Accreditation and Standards: Package ICCA for Usability in Strategic Plans and Continuous Improvement Activities

Related to after-action activities and variables for collaboration, the ICCA used to form the survey in this thesis should be more widely adopted by emergency management programs. The ICCA could be incorporated into FEMA’s continuous improvement toolkit or be packaged as a stand-alone tool for emergency management programs’ strategic planning and capacity building.

¹³⁵ Errett et al., “Regional Collaboration.”

¹³⁶ “Continuous Improvement,” Federal Emergency Management Agency, September 14, 2023, <https://www.fema.gov/about/offices/preparedness/continuous-improvement>.

8. Accreditation and Standards: Develop Incentives for Accreditation and Standards through FEMA’s Preparedness Grants or an Insurance Premium Program

Incentivizing compliance with accreditation and standards could lead to better implementation. There are at least two existing frameworks that FEMA could leverage to incentivize the adoption of accreditation and standards and one private, insurance industry example. FEMA offers significant federal funding to municipalities through preparedness grants every year. Awards range from thousands to tens of millions of dollars. Administrators of these competitive grants should contemplate requiring participation for funding eligibility or providing preference points to agencies that are accredited or meet certain standards.

FEMA’s other existing framework is the Community Rating System (CRS), which encourages community floodplain management activities as part of the National Flood Insurance Program. Through voluntary participation, the CRS helps communities obtain a class rating of 1 to 10, translating to a 5–45 percent discount on flood insurance premiums for private residents.¹³⁷ While the CRS focuses on flood management activities and flood insurance, this model could be adopted for an all-hazards approach and applied to other insurance premiums. In a private-sector example, the Insurance Services Office, a for-profit entity, uses available fire service data to assign a class rating of 1 to 10 to individual communities, indicating their ability to suppress fires.¹³⁸ These ratings have been used by private insurance to determine premiums—the higher the rating, the lower the insurance premium.

9. Experience: Assess FEMA’s Emergency Manager Exchange and Other Deployment Opportunities to Provide Critical Emergency Management Experience

Acknowledging the experience of focusing events for both individuals and organizations, more opportunities for staff and teams to participate in real-world events

¹³⁷ “Community Rating System,” Federal Emergency Management Agency, October 16, 2023, <https://www.fema.gov/floodplain-management/community-rating-system>.

¹³⁸ “PPC Program,” Verisk, accessed January 17, 2024, <https://www.isomitigation.com/ppc/>.

should be investigated. For FEMA’s full-time staff and reservists, deploying from one jurisdiction to another is a common practice, but at the state level, personnel could deploy through EMAC. This invaluable experience should be replicated for local emergency management staff. While some local staff may be eligible to deploy under EMAC or other mutual aid agreements, this capability is not universal.

FEMA’s Emergency Manager Exchange program should be evaluated to gauge the impact on a participant’s level of experience. This program may provide a blueprint for local staff and agencies to gain valuable experience. Additionally, voluntary organizations active in disaster like the American Red Cross, Salvation Army, and Team Rubicon frequently deploy volunteer members to disasters. Prospective employers and job seekers should not overlook such opportunities to gain experience. (See Appendix C for a summarized list of recommendations.)

C. CONCLUSION

Emergency management is in vogue at the moment. From more frequent crises to new mission sets for the local emergency manager, these issues and events remain a topic of public discourse and examination. Traditional risks are keeping emergency managers busy as hotter, wetter, and otherwise more severe storm systems impact America’s built environment and aging infrastructure. Mounting human and social issues are compounding traditional risks—homelessness, opioids, street crime, and irregular migration are now common mission sets demanding the attention of local emergency managers.¹³⁹ Moreover, society’s reliance on a connected world means that supply chains, key infrastructure nodes for connectivity, cyber incidents, and misinformation and disinformation online further compound traditional risks and social issues. As if these challenges were not enough, society is expanding capabilities and testing boundaries in many other ways—more than 110 armed conflicts rage on across four continents; the availability of nuclear and other weapons represents an even greater threat; climate change is intensifying; artificial

¹³⁹ “Plenary: State of Emergency—Resource Commitments and Compassion in an Age of Extremes,” Natural Hazards Center, accessed January 24, 2024, <https://hazards.colorado.edu/workshop/2023/session/plenary-state-of-emergency-resource-commitments-and-compassion-in-an-age-of-extremes?row=29>.

intelligence is reshaping what is possible; and space exploration is becoming a form of tourism for the uber-rich.¹⁴⁰

The average person expects that someone has a plan to address these developments, that during a catastrophic event, all levels of government, the military, private industry, and everyday people will band together to address the calamity to protect life and property and return everything to normal quickly. The track record of the United States and the rest of the world indicates otherwise. There is no great calamity avoidance model, so the local emergency management function needs help. Collaboration needs to be second nature to local emergency management for its mitigation, preparedness, response, and recovery functions to be effective. This level of readiness cannot be left to an unspecified number of government workers with unspecified experience, standards, or capacity, working in a basement to make all of these preparations. Specific research in the field of emergency management needs to be transformed into policy and resources at every level.

It is this author's hope that this study has provided valuable insights into the state of local emergency management's collaborative capacity and has identified concrete ways to further advance this topic for future researchers and practitioners.

¹⁴⁰ "Today's Armed Conflicts," Geneva Academy of International Humanitarian Law and Human Rights," accessed January 24, 2024, <https://geneva-academy.ch/galleries/today-s-armed-conflicts>.

APPENDIX A. SURVEY QUESTIONS FOR PRIMARY DATA COLLECTION

This appendix presents the ICCA adapted for this thesis. The ICCA survey questions were combined with open-ended background questions.¹⁴¹ Self-reported responses were then combined with additional information gathered independently from the survey or calculated based on the survey results. The following questions, presented on a web page, allowed participants to select one Likert-scale response for each statement or leave the response blank.

Felt Need to Collaborate		
Purpose & Strategy	Effective interorganizational collaboration is a high priority for my organization.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	My organization recognizes the importance of working with other organizations to achieve its mission.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	Members of my organization understand the benefits of collaborating with other organizations.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	The success of my organization’s mission requires working effectively with other organizations.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	There is agreement within my organization about the purpose and value of interorganizational collaboration.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree

Strategic Action for Collaboration		
Purpose & Strategy	We have clearly established goals for interorganizational collaboration.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	The leaders of my organization emphasize the importance of interorganizational collaboration.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	My organization is willing to address interorganizational goals even if it must compromise its own interests.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	My organization considers the interests of other organizations in its planning.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	Leaders of my organization work productively with those of other organizations to improve our collaborations.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree

¹⁴¹ Hocevar, Jansen, and Thomas, *Inter-organizational Collaborative Capacity Assessment*.

Resource Investments		
Purpose & Strategy	My organization has committed adequate budget, and resources to interorganizational collaboration.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	My organization is willing to invest resources to accomplish interorganizational goals.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	My organization has assigned adequate personnel to the work required for effective interorganizational collaboration.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree

Structural Flexibility		
Structure	My organization can quickly form or modify partnerships as requirements change.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	My organization is flexible in adapting its processes and procedures to better fit with other organizations.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	My organization invests appropriate time and energy to deconflict existing policies and processes that impede collaboration.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	My organization's procedures are flexible and responsive to the requirements of other organizations.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree

Support for Individual Collaboration Efforts		
Structure	Leadership listens to input from subordinates about ways to improve interorganizational collaboration.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	My organization gives people the authority they need to effectively collaborate with other organizations.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	My organization follows through on recommendations from our representatives on interorganizational task forces.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	People are given clear guidance on goals and constraints for their interorganizational work.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree

Metrics		
Structure	My organization has measurement criteria to evaluate interorganizational collaboration efforts.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	My organization has clear performance standards regarding interorganizational work.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	My organization has measurement criteria to evaluate the outcomes of interorganizational collaboration.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree

Collaboration Structures		
Structure	My organization has adequate and appropriate structures (e.g., liaison roles, teams, task forces) for effective interorganizational collaboration.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	My organization establishes specific agreements about each organization's roles and responsibilities in a collaboration.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	My organization's processes and procedures are structured to enable effective interorganizational collaboration.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree

Incentives and Rewards		
Incentives and Rewards	My organization rewards employees for investing time and energy to build collaborative relationships.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	My organization rewards members for their successful interorganizational collaborative activities.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	Collaborative talents and achievements are considered when people are reviewed for promotion.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	Engaging in interorganizational activities at work is important to career advancement.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree

Individual Collaborative Capacities		
People	Members of my organization have the collaborative skills (e.g., conflict management, team process skills) needed to work effectively with other organizations.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	Members of my organization understand the capabilities of other organizations with which we work.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	Members of my organization respect the expertise of those in other organizations with whom we work.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	Members of my organization understand how our work relates to the work of other organizations with whom we need to collaborate.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	Members of my organization are able to appreciate another organization's perspective on a problem or course of action.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	Members of my organization are willing to engage in a shared decision-making process with other organizations.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	Members of my organization seek input from other organizations.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree

Collaborative Learning		
Lateral Mechanisms	My organization commits adequate human and financial resources to training with other organizations.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	My organization has strong values and norms for learning from other organizations.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	My organization works with other organizations to identify lessons learned for improved collaboration.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	My organization understands how the other organizations we work with make decisions.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	My organization takes time to learn about the interests of stakeholder organizations.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree

Collaborative Tools and Technologies		
Lateral Mechanisms	Our interorganizational collaborations are effectively supported by collaborative planning tools and technologies.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	My organization has the necessary information systems' interoperability to enable effective interorganizational collaboration.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	Our interorganizational collaborations are supported by effective communication tools and technologies.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree

Social Capital		
Lateral Mechanisms	Members of my organization know who to contact in other organizations for information.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	Members of my organization take the initiative to build relationships with their counterparts in other organizations.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	Members of my organization have strong networks of professional relationships with people in other organizations.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree

Information Sharing		
Lateral Mechanisms	My organization has strong values and norms that encourage sharing information with other organizations.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	My organization provides other organizations adequate access to information that is relevant to their work.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree
	Members of my organization willingly share information with other organizations.	1 2 3 4 5 6 Strongly Disagree <-----> Strongly Agree

The following open-ended supplemental questions were presented on a web page, allowing participants to input free text for their responses.

Staffing
Number of full-time personnel (including detailees from other organizations)?
How many personnel are partially or fully funded outside of your jurisdiction's annual budget?
How have you designed your current staffing (based on a population, based on available budget, specific to your threats and hazards, etc.)?
Organization
Does your jurisdiction rely on a separate county government?
Which of the following does your organization fall into (fire department, police department, public safety and communications, executive, other)?
Which of the following functions do you have in your emergency management agency (on-call duty officer, field response teams on call or 24/7, 24/7 emergency management watch, standing EOC activation, other)?
Are you a part of an Urban Area Security Initiative (UASI)? If yes, describe the type of UASI (operational, planning/preparedness-oriented, fiduciary-only).
Accreditation/Standards
Is the agency currently Emergency Management Accreditation Program (EMAP) accredited or seeking accreditation?
Has your agency submitted a 2019 Threat and Hazard Identification and Risk Assessment/ Stakeholder's Preparedness Review (THIRA/SPR) for the local or regional level?
Experience
Estimated total days of EOC activation or full-scale exercise activation between calendar years 2015 and 2019?
Estimated total number of days your agency, or personnel, has supported disasters outside of the home jurisdiction between calendar years 2015 and 2019 (1 person for 5 days = 5; 2 people for 5 days = 10)?
Background
How would you rate the overall success of your organization in collaborating with other organizations?
For what organization do you work?

The following comprises supplemental information gathered or calculated independently from the ICCA survey.

Staffing	
Percent of staff grant funded	Independent calculation
Ratio of emergency management staff to population	Independent calculation
Experience	
Number of declared disasters since 9/11/01	Independently gathered
Background	
Population	Independently gathered

APPENDIX B. SUMMARY OF ICCA MEANS

This table summarizes the mean-of-means analysis across agency participants and individual elements (questions) of each factor in the ICCA, with most to least collaborative agency sorted from left to right. As shown, the overall ICCA sample mean was 4.52.

Respondent Agency	E	A	I	F	G	C	B	D	H	Mean by Factor
Felt Need	6	5.8	6	5.8	5.2	6	4.6	6	N/A	5.68
Strategic Action	5.4	5.4	5	5.2	4.6	3.8	3.8	4.4	N/A	4.7
Resource Investment	5.67	5	4.33	4.67	5	4.33	3.67	2.67	N/A	4.42
Structural Flexibility	5.25	5.5	5	6	4.5	3	4.25	4.25	N/A	4.72
Metrics for Collaboration	4	3.67	4	1	3	1	2	3.33	N/A	2.75
Rewards & Incentives	5	3.25	4.75	4.5	4	3.5	4.25	3.25	N/A	4.06
Collaborative Learning	4.8	5.2	5	5	4	3.4	4.6	3.75	N/A	4.47
Information Sharing	5	5.67	5.33	6	4.33	4.67	4.33	4	N/A	4.92
Social Capital	5	6	5.67	6	5.33	5	4	4	N/A	5.13
Individual Collaborative Capacities	5.14	5.71	5.71	5.14	4.71	4.71	3.29	4.14	N/A	4.82
Support for Individual Collaborative Efforts	5	N/A	5.75	5.33	4.75	6	4	4.25	N/A	5.01
Collaborative Structures	5.33	5	4.33	5.33	3.67	3	3	3	N/A	4.08
Collaborative Tools and Tech	5	5	5.33	4	3.67	2.67	3.67	2.33	N/A	3.96
Mean by Agency	5.12	5.10	5.09	4.92	4.37	3.93	3.80	3.80	N/A	

Note. The right-most column shows the mean of all agency means by factor. Bold figures in the table represent scores above the mean for the factor. The means of each factor per agency were averaged to give an overall agency ICCA mean. Agency H completed only the background questions and did not submit the Likert-scale survey.

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APPENDIX C. SUMMARY OF RECOMMENDATIONS

Theme	Recommendation
Staffing	Develop a staffing model that accounts for proactive and reactive tasks.
	Create goals and metrics for staff collaboration.
Organization	Assess the strengths and weaknesses of local emergency management situated as an independent organization; executive office; or public safety, police, or fire entity.
	Measure the effectiveness of UASI areas compared to non-UASI areas, including whether UASIs are best organized as fiscal, preparedness, or operational entities.
	Identify the indicators that warrant different operational emergency management elements and the optimal organization of each, including on-call teams, duty officers, watch desks, and dedicated responders.
Accreditation/ standards	Through FEMA’s continuous improvement guidance, derive quantifiable variables specific to collaboration and require after-action activities during declared disasters.
	Package the ICCA in a way that is useful for emergency management programs to strategically plan or conduct continuous improvement activities.
	Develop an incentive plan for adopting accreditation and standards through FEMA’s preparedness grants or an insurance premium program like FEMA’s CRS or the Insurance Services Office’s rating system.
Experience	Assess the ability of programs like FEMA’s Emergency Manager Exchange or deployment opportunities with voluntary agencies active in disaster to provide critical experience for local emergency management organizations and their staff.

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