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MONTEREY, CALIFORNIA

THESIS

**DESIGNING FOR DISASTER: APPLYING STRUCTURAL
CONTINGENCY THEORY TO GOVERNMENT RISK
MITIGATION AND CONSEQUENCE MANAGEMENT
ORGANIZATIONAL STRUCTURES**

by

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September 2023

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THEORY TO GOVERNMENT RISK MITIGATION AND CONSEQUENCE
MANAGEMENT ORGANIZATIONAL STRUCTURES**

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ABSTRACT

The COVID-19 pandemic served as the latest prominent example in a long history of emergency management, homeland security, resilience, and other government agencies perpetuating long-standing fragmentation, overlaps, and duplication of effort. This thesis investigated how a governmental jurisdiction's mitigation, preparedness, response, and recovery activities can leverage organizational design scholarship to improve effectiveness and efficiency. A structural contingency analytical framework by Richard Daft was adapted for risk mitigation and consequence management organizations. The adapted analytical framework was tested using a case study of Somerville, Massachusetts. The thesis concludes with organizational design recommendations for government risk mitigation and consequence management functions.

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TABLE OF CONTENTS

I.	INTRODUCTION.....	1
A.	PROBLEM STATEMENT	1
B.	RESEARCH QUESTION	15
C.	THESIS ROADMAP	15
II.	RESEARCH DESIGN	17
A.	INTRODUCTION.....	17
B.	STAGE 1: ANALYTICAL FRAMEWORK DESIGN.....	17
C.	STAGE 2: ORIENTING THE FRAMEWORK FOR OPTIMAL FIT	23
D.	STAGE 3: CASE STUDY ANALYSIS	27
E.	STUDY SCOPE.....	33
	1. Structural Design	33
	2. Risk Mitigation and Consequence Management	35
	3. Magnitude of Hazard Events	37
	4. Types of Functions	38
	5. Organizing the Functions.....	40
	6. Day-to-Day Organizational Structures.....	43
	7. Existing Authorities	44
III.	LITERATURE REVIEW	45
A.	INTRODUCTION.....	45
B.	ORGANIZATION THEORY AND DESIGN	45
	1. Origins of Organization Theory	45
	2. Looking Beyond Structure.....	49
	3. Contingency Theory.....	50
	4. Configuration Approach	53
	5. Shifting Towards Organic Structures and Networks.....	54
	6. Government Reorganizations	56
	7. Institutionalism	59
	8. Organizational Fragmentation, Overlap, and Duplication.....	61
	9. Summary.....	63
C.	ORGANIZATION EFFECTIVENESS	64
	1. Effectiveness Versus Efficiency	64
	2. Goal Approach	66
	3. Resource-Based Approach	70

4.	Internal Process Approach.....	71
5.	Strategic Constituents Approach.....	72
6.	Integrated Effectiveness Model	73
7.	Summary.....	76
D.	SUMMARY	76
IV.	ANALYTICAL FRAMEWORK.....	79
A.	OVERVIEW	79
B.	LEVELS OF ANALYSIS	82
1.	Group Level.....	83
2.	Agency Level.....	84
3.	Jurisdiction Level.....	85
4.	System Level.....	86
C.	CONTINGENCY FACTORS.....	89
1.	Size.....	89
2.	Technology	94
3.	Environment.....	110
4.	Goals and Strategy	127
5.	Culture	137
D.	STRUCTURAL DIMENSIONS	146
1.	Formalization	146
2.	Specialization.....	148
3.	Hierarchy of Authority.....	151
4.	Complexity	154
5.	Centralization.....	158
E.	DESIGNING FOR FIT.....	160
1.	Organization Structure	160
2.	Information Sharing and Linkages	162
3.	Connecting Goals and Organizational Activities	172
4.	Departmental Grouping	175
F.	SUMMARY	189
V.	CASE STUDY ANALYSIS.....	191
A.	OVERVIEW	191
B.	ORGANIZATIONAL ANALYSIS.....	195
1.	Contingency Factors	195
2.	Structural Dimensions.....	206
C.	OPTIMAL ORGANIZATIONAL FIT COMPARISON	210
D.	SUMMARY	211

VI.	CONCLUSION	213
A.	FINDINGS	213
B.	LIMITATIONS	216
1.	Limited Data.....	216
2.	Emergency Management Phases	218
3.	Levels of Analysis.....	219
4.	Shared Responsibilities in Performing Functions.....	220
5.	Structural Contingency Theory.....	222
C.	RECOMMENDATIONS.....	223
D.	FUTURE RESEARCH	229
E.	FINAL THOUGHTS	235
	LIST OF REFERENCES	243
	INITIAL DISTRIBUTION LIST	307

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LIST OF FIGURES

Figure 1.	National Governors Association Comprehensive Emergency Management Construct	7
Figure 2.	Analytical Framework	20
Figure 3.	Analytical Framework Applied to Risk Mitigation and Consequence Management Functions	24
Figure 4.	Identifying Optimal Orientation in Each Emergency Management Phase	27
Figure 5.	Mechanistic and Organic Design Continuum	32
Figure 6.	Galbraith's Star Model.....	35
Figure 7.	RAND Corporation's Proposed Emergency Management Policy Construct	36
Figure 8.	Comprehensive Emergency Management Activities.....	42
Figure 9.	Characteristics of Fragmentation, Overlap, and Duplication.....	62
Figure 10.	Integrated Effectiveness Model	74
Figure 11.	Levels of Organizational Analysis.....	83
Figure 12.	Perrow's Organizational Technologies Framework	100
Figure 13.	Interdependence Models	105
Figure 14.	Environmental Uncertainty Framework	117
Figure 15.	Cultural Archetypes Framework.....	141
Figure 16.	Horizontal Linkage Devices	171
Figure 17.	Functional Grouping	176
Figure 18.	Divisional Grouping.....	178
Figure 19.	Matrix Grouping	181
Figure 20.	Design Technique Continuum	189

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LIST OF TABLES

Table 1.	Typical Contingency Factor and Structural Dimension Orientations.....	22
Table 2.	Contingency Factors and Associated Influencing Drivers.....	25
Table 3.	Typical Contingency Factor and Structural Dimension Orientations.....	81
Table 4.	Size Contingency Factor Orientations and Characteristics.....	94
Table 5.	Technology Contingency Factor Orientations and Characteristics	110
Table 6.	Environment Contingency Factor Orientations and Characteristics.....	127
Table 7.	Goals and Strategy Contingency Factor Orientations and Characteristics.....	137
Table 8.	Culture Contingency Factor Orientations and Characteristics.....	146
Table 9.	Formalization Structural Dimension Orientations and Characteristics ..	148
Table 10.	Specialization Structural Dimension Orientations and Characteristics ..	150
Table 11.	Hierarchy of Authority Structural Dimension Orientations and Characteristics.....	153
Table 12.	Complexity Structural Dimension Orientations and Characteristics	157
Table 13.	Centralization Structural Dimension Orientations and Characteristics ..	160
Table 14.	Summary of Optimal Design Orientations	190
Table 15.	Comparison of Somerville Jurisdiction Level Optimal Fit and Somerville Actual Fit Structural Orientations	211

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LIST OF ACRONYMS AND ABBREVIATIONS

ARPA	American Recovery Plan Act
ASAP	American Society of Adaptation Professionals
CALEA	Commission on Accreditation for Law Enforcement Agencies
CDC	Centers for Disease Control and Prevention
CEM	Comprehensive Emergency Management
CISA	Cybersecurity and Infrastructure Security Agency
COVID-19	Coronavirus Disease 2019
CRO	Chief Resilience Officer
CRS	Congressional Research Service
DHS	U.S. Department of Homeland Security
EMAP	Emergency Management Accreditation Program
ESF	Emergency Support Function
FEMA	Federal Emergency Management Agency
GAO	Government Accountability Office
HHS	US Department of Health and Human Services
IAEM	International Association of Emergency Managers
ICE	Immigration and Customs Enforcement
ICS	Incident Command System
MEMA	Massachusetts Emergency Management Agency
MERS	Mobile Emergency Response System
NEMA	National Emergency Management Association
NGA	National Governors Association
NHSA	National Homeland Security Association
NIMS	National Incident Management System
NOAA	National Oceanic and Atmospheric Administration
ONCRC	Office of the National Capital Region Coordination
PAS	Program Administration by States

PHAB	Public Health Advisory Board
PKEMRA	Post-Katrina Emergency Management Reform Act
SARFIT	Structural Adaptation to Regain Fit
SRT	Supplemental Response Team
SWOT	strengths, weaknesses, opportunities, and threats
UASI	Urban Area Security Initiative

EXECUTIVE SUMMARY

Interdepartmental friction, duplication of efforts, and inconsistent service delivery are challenges faced by emergency management, homeland security, and resilience organizations at the federal, state, and local government levels. These challenges were significantly highlighted during the COVID-19 pandemic but have also occurred recurrently in numerous disasters, as shown by after-action reports and performance audits. Furthermore, while the most visible issues have been showcased during emergency response, interdepartmental coordination problems continue to be documented in governmental mitigation, preparedness, and recovery activities.

Introduced in 1978 by the National Governors Association (NGA), the “comprehensive emergency management” (CEM) framework aimed to consolidate preparedness, response, recovery, and mitigation activities within one agency per jurisdiction.¹ However, this framework has not led to the intended goal of integrated risk mitigation and consequence management functions but instead duplication of efforts and inadequate attention placed on mitigation, preparedness, and recovery. The turn of the 21st century started a trend toward establishing separate entities for long-term recovery, resilience, and homeland security, scattering emergency management functions across many government agencies.

The thesis argues that many issues encountered in emergency management are not solely due to the commonly studied poor vertical coordination between different levels of government but also due to the horizontal design of risk mitigation and consequence management functions within a single jurisdiction. The COVID-19 pandemic may lead to significant legislative and policy changes, and this thesis applies organization theory and design to inform the next iteration of risk mitigation and consequence management agencies. It aims to look beyond traditional emergency response reform, considering the deliberate consolidation, distribution, integration, and structural design of government risk

¹ National Governors’ Association, *Comprehensive Emergency Management: A Governor’s Guide* (Washington, DC: National Governors’ Association, 1979), 11.

mitigation and consequence management functions. The central research question is: How can risk mitigation and consequence management functions be organized in a governmental jurisdiction to improve efficiency and effectiveness?

The research design involves three stages. First, it develops an analytical framework derived from Daft's text *Organization Theory & Design*, based on structural contingency theory.² This framework assesses an organization's contingency factors (size, technology, environment, goals and strategy, and culture) and its structural dimensions (hierarchy of authority, complexity, specialization, formalization, and centralization) for symptoms of structural deficiency and "goodness of fit." Second, it adapts Daft's framework to assess whether a mechanistic (efficiency-oriented) or organic (innovation-oriented) structural design is optimal for each of the four emergency management phases (preparedness, response, recovery, and mitigation). Third, it involves a case study analysis, applying this framework to a local jurisdiction, the City of Somerville, to test its applicability and effectiveness.

The literature review covers organization design theories relevant to government risk mitigation and consequence management functions and organizational effectiveness as a research source to develop criteria for assessing these functions within a government jurisdiction. The review finds no apparent connection between deliberate organization theory-based design and the many reorganizations of risk mitigation and consequence management functions at various government levels. Instead, the review finds that despite NGA's disclaimer that the CEM policy construct was never intended to be an organizational model, most jurisdictions engaged in institutional isomorphism by replicating the CEM-based organizational structures of the Federal Emergency Management Agency (FEMA) and peer jurisdictions. The review also identified broad evidence that improving "organizational fit" by aligning an organization's contingency factors with its structural design improves organizational effectiveness.

The case study examines Somerville, Massachusetts, a densely populated city with a diverse population and various hazards. In 2021, the city established a full-time

² Richard L. Daft, *Organization Theory & Design*, 13th ed. (Boston, MA: Cengage, 2020), 18.

emergency management office, transitioning from its previous model, where this function was part of the fire department. The author of this thesis served as the inaugural director of emergency management for this office. The case study applies Daft's analytical framework at the jurisdiction level, focusing on risk mitigation and consequence management activities in line with the Emergency Management Accreditation Program (EMAP) Emergency Management Standard.³ Daft's framework suggests that an organic design, characterized by few rules, empowered roles, collaborative teamwork, horizontal communication, and a decentralized informal structure, is optimal for flexibility and decision-making at this level. Despite adding complexity by separating emergency management activities into different departments, Somerville's structure is highly organic-oriented. The city exhibits strong inter-departmental collaboration, efficient decision-making, adaptability to environmental changes, and the ability to meet annual goals through solid employee performance. The study concludes that Somerville's efforts to align its structural dimensions with contingency factors have likely contributed to increased internal process efficiency and overall organizational effectiveness.

The study concludes with several recommendations, including clarifying roles and responsibilities, implementing horizontal information linkages, considering revised departmental grouping, divesting functions to other departments or levels of government, and overhauling the policy model used to frame government risk mitigation and consequence management functions. These recommendations aim to improve organizational effectiveness by aligning structural design with contingency factors and avoiding duplication of effort. The study calls for reevaluating the widespread use of the 1978 "comprehensive emergency management" model in the design of organizations and advocates for incorporating evidence-based principles of organization theory and design in any reorganization efforts.

³ Emergency Management Accreditation Program, *Emergency Management Standard*, ANSI/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>.

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After over three years, my friends, family, and colleagues no longer must hear me give the excuse that I’m “still working on my thesis.” Although I acknowledge that I made this endeavor significantly more complicated than it needed to be, doing it while trying to manage Nashua, New Hampshire’s, response to the COVID-19 pandemic, transitioning roles in the middle of COVID-19 and a mayoral transition to Somerville, Massachusetts, to start their inaugural emergency management office, and fulfilling the roles of 2nd and 1st vice president in the International Association of Emergency Managers made it almost impossible to complete. If I can make one recommendation to future Center for Homeland Defense and Security students: Put everything else down and focus your efforts on finishing the program!

But now it is finished, and I’m incredibly pleased with the result. Although the topic of organizational design and emergency management has been an area of interest for me over the last decade, I can recall thinking about the structures and boundaries of organizations at a very young age. “Why are the Army and Marines separate branches of the military?” “Why does General Electric manufacture both aircraft engines and appliances?” “Why is trash picked up by the government in this town but by a private company in the next town?” These topics are probably not everyday things a child should be thinking about.

During this journey, I contacted numerous scholars and experts who have studied this and closely aligned topics. Many responded and provided beneficial resources and advice, including David McEntire, Louise Comfort, Scott Robinson, Peter May, Rick Sylves, Patrick Roberts, Michael McDaniel, Matt Hinds-Aldrich, Timothy Kneeland, Gregory Vigneaux, Rebecca Rice, Amy Kates, and Lauren Stienstra. Several Naval Postgraduate School (NPS) faculty, including Cris Matei, Nick Dew, Kathryn Aten, Glen Woodbury, Chris Bellavita, and Lynda Peters, helped me design my thesis topic and provided prospective theories to investigate. I want to highlight Erik Jansen, whose recommendation of Richard Daft’s text, *Organization Theory & Design*, significantly influenced the trajectory of this thesis. My advisors, Lauren Fernandez, and Mitchell

Friedman, deserve a lot of credit for their patience, frequent nudges, and advice in getting this thesis to the finish line. I would also be remised if I did not mention NPS Librarian Greta Marlatt's role in helping to format my complex citations and hunting down rare reports architecting the comprehensive emergency management construct I'm sure haven't seen the light of day for decades. Most importantly, my wife, Megan, deserves the most prominent acknowledgment for her support and sacrifice over numerous years without a vacation due to my writing deadlines.

The most frequent feedback I received when asking for advice on my thesis proposal was the scope was far too large. One memorable response was, "If someone wanted to hire me and my team of a couple of other PhDs to do this, and I had to estimate time and budget, it would not be in the range of what I think of as a thesis project." As a result, what's presented here is a fraction of the initial scope I hoped to study when I questioned the placement of emergency management functions vertically and horizontally across all levels of government and the departments within. I'm optimistic that this thesis will serve as a foundation for future research projects of mine and potentially an inspiration for others looking to study the complex interplay of governance structures in emergency management.

I. INTRODUCTION

A. PROBLEM STATEMENT

With over 1.1 million deaths and a marathon three-year response, the COVID-19 pandemic represents one of the most significant incidents for every emergency management agency across the United States since the introduction of the “comprehensive emergency management” (CEM) construct in the late 1970s.¹ Likewise, associated functions found across other government agencies, ranging from public health to homeland security, were simultaneously stretched to their limits. Collectively, these functions can be organized into two primary categories: risk mitigation, those activities focused on proactively reducing the impacts of threats and hazards, and consequence management, focused on responding to a risk that has been realized.² Years of interdepartmental friction and disparities in how jurisdictions plan for and respond to emergencies in both categories

¹ “COVID Data Tracker,” Centers for Disease Control and Prevention, March 23, 2023, <https://covid.cdc.gov/covid-data-tracker>; and National Governors’ Association, *Comprehensive Emergency Management*, 11.

² Jason Thomas Barnosky et al., *Streamlining Emergency Management: Issues, Impacts, and Options for Improvement*, RR-A1440-5 (Santa Monica, CA: RAND Corporation, 2022), 25, <https://doi.org/10.7249/RR-A1440-5>. This thesis uses the combined terms of “risk mitigation” and “consequence management” to describe the diverse set of activities and functions that government emergency management, homeland security, resilience, and other organizations undertake. A detailed explanation of the source and use of these terms can be found in Chapter II.

have existed.³ The COVID-19 pandemic exemplified the numerous challenges of simultaneously distributing and consolidating risk mitigation and consequence management activities across the government.

Federal, state, and local governments experienced duplication of effort and inconsistencies in implementing measures for COVID-19.⁴ At the federal level, coordination issues on information systems, supplies and personal protective equipment distribution, and logistics management between the Federal Emergency Management Agency (FEMA) and the U.S. Department of Health and Human Services (HHS) were plentiful.⁵ Even internally within HHS, the former Office of the Assistant Secretary for Preparedness and Response and the Centers for Disease Control and Prevention (CDC)

³ Valerie Lucas, “Analysis of the Baseline Assessments Conducted in 35 U.S. State/Territory Emergency Management Programs: Emergency Management Accreditation Program (EMAP) 2003–2004,” *Journal of Homeland Security and Emergency Management* 3, no. 2 (June 2006): 7, <https://doi.org/10.2202/1547-7355.1212>; Steven Stehr, “The Changing Roles and Responsibilities of the Local Emergency Manager: An Empirical Study,” *International Journal of Mass Emergencies and Disasters* 25, no. 1 (March 2007): 49, <https://doi.org/10.1177/028072700702500102>; Jessica Jensen and Sarah Kirkpatrick, “Local Emergency Management and Comprehensive Emergency Management (CEM): A Discussion Prompted by Interviews with Chief Resilience Officers,” *International Journal of Disaster Risk Reduction* 79 (September 2022): 1, 3, <https://doi.org/10.1016/j.ijdr.2022.103136>; National Research Council, *Disaster Resilience: A National Imperative* (Washington, DC: National Academies Press, 2012), 29, <https://doi.org/10.17226/13457>; Jack D. Kartez and Charles E. Faupel, “Factors Promoting Comprehensive Local Government Hazards Management,” in *From the Mountains to the Sea—Developing Local Capabilities: Proceedings of the Nineteenth Annual Conference of the Association of State Floodplain Managers, May 22–26, 1995* (Portland, ME: Association of State Floodplain Managers, 1995), 67, <https://core.ac.uk/download/pdf/154458118.pdf#page=82>; Jessica Jensen and Sarah J. Bundy Kirkpatrick, “Local Recovery Coordinators and the National Disaster Recovery Framework: Questions Regarding the Form, Necessity, and Potential of the Role,” *Journal of Homeland Security and Emergency Management* 14, no. 4 (December 2017): 158, 182, <https://doi.org/10.1515/jhsem-2016-0068>; Thomas A. Birkland and Sarah E. DeYoung, “Emergency Response, Doctrinal Confusion, and Federalism in the Deepwater Horizon Oil Spill,” *Publius* 41, no. 3 (Summer 2011): 471, <https://doi.org/10.1093/publius/pjr011>; and Jane Ann Kushma, “Preparing for Disaster: Implementing Emergency Management Programs” (PhD diss., University of Texas at Arlington, 2002), 93, ProQuest.

⁴ National Homeland Security Consortium, *COVID-19 Pandemic After-Action Report* (Lexington, KY: National Homeland Security Consortium, 2021), 18–20, https://www.apwa.net/library/government-affairs/NHSC_COVID-19_Pandemic_After_Action_Report_Final.pdf.

⁵ Naim Kapucu and Qian Hu, “An Old Puzzle and Unprecedented Challenges: Coordination in Response to the COVID-19 Pandemic in the US,” *Public Performance & Management Review* 45, no. 4 (2022): 773, 788, <https://doi.org/10.1080/15309576.2022.2040039>; Chris P. Currie, *COVID 19: FEMA’s Role in the Response and Related Challenges*, GAO-20-685T (Washington, DC: Government Accountability Office, 2020), 8, 10, 13, <https://www.gao.gov/assets/gao-20-685t.pdf>; Federal Emergency Management Agency, *Pandemic Response to Coronavirus Disease 2019 (COVID-19): Initial Assessment Report* (Washington, DC: Federal Emergency Management Agency, 2021), 29–44, https://www.fema.gov/sites/default/files/documents/fema_covid-19-initial-assessment-report_2021.pdf; and Ariel Cohen, “COVID-19: The Leadership Failure,” *The Hill*, April 17, 2020, <https://thehill.com/opinion/white-house/493074-covid-19-the-leadership-failure/>.

clashed on numerous decisions made throughout the pandemic.⁶ Oregon and Massachusetts found duplication of effort and disconnects in coordination across staff scattered throughout many state agencies.⁷ New York City, Los Angeles, and King County, Washington, encountered examples of confusion on the roles and responsibilities of their consolidated emergency management agencies compared to other municipal departments.⁸ In sum, COVID-19 has underscored the challenges of multiple agencies at each government level attempting to perform similar risk mitigation and consequence management activities.

Although the COVID-19 pandemic is an obvious example of the disjointed nature of emergency response within jurisdictions, the problems of duplication, overlap, and fragmentation can be found across all levels of government and within all activities intended to reduce risk, prepare for, and manage the long-term recovery of disasters.⁹ FEMA has routinely been targeted for interagency preparedness issues at the federal

⁶ Dan Diamond, “Officials Reorganize HHS to Boost Pandemic Response,” *Washington Post*, July 20, 2022, <https://www.washingtonpost.com/health/2022/07/20/biden-administration-aspr-independent-division/>; and Paige Williams, “How America Can Avoid Dual Cataclysms,” *The New Yorker*, November 1, 2020, <https://www.newyorker.com/news/us-journal/how-america-can-avoid-dual-cataclysms>.

⁷ State of Oregon, *State of Oregon After-Action Review: Joint Information Center and Communications in the COVID-19 Response* (Portland, OR: State of Oregon, 2021), 4–6, <https://www.oregon.gov/gov/policies/Documents/or-aar-soc-3-041321.pdf>; State of Oregon, *State of Oregon After-Action Review Enterprise Response to COVID-19* (Portland, OR: State of Oregon, 2020), 6–8, 24, 29, <https://olis.oregonlegislature.gov/liz/201911/Downloads/CommitteeMeetingDocument/227575>; and Massachusetts General Court Joint Committee on COVID-19 and Emergency Preparedness and Management, *Report of the Joint Committee on COVID-19 and Emergency Preparedness and Management: Findings and Recommendations of the Committee* (Boston: Commonwealth of Massachusetts, 2022), 29–33, <https://archives.lib.state.ma.us/handle/2452/859976>.

⁸ New York City Comptroller, *Interim Findings and Recommendations of the New York City Comptroller’s Investigation of the City’s COVID-19 Planning, Preparation, and Initial Response* (New York: City of New York, 2021), 11–13, <https://comptroller.nyc.gov/wp-content/uploads/documents/Audit-COVID-Report-Final.pdf>; Dakota Smith, “Communication Problems Hindered L.A.’s Emergency COVID-19 Response, Report Finds,” *Los Angeles Times*, February 19, 2022, <https://www.latimes.com/california/story/2022-02-19/la-emergency-response-pandemic-communication-problems>; City of Los Angeles Emergency Management Department, *Emergency Operations Activation After-Action Report (AAR): COVID-19 Pandemic* (Los Angeles: City of Los Angeles, 2022), 51–63, https://ens.lacity.org/epd/eobagendas/epdeobagendas210163579_07202022.pdf; and Brian Crist et al., *Performance Audit of King County’s COVID-19 Pandemic Response* (Seattle, WA: King County, WA, 2021), 2–3, 9, 13, <https://kingcounty.gov/~media/depts/auditor/new-web-docs/pandemic-response/pandemic-response-2021.ashx?la=en>.

⁹ Thomas E. Drabek, “Managing the Emergency Response,” *Public Administration Review* 45 (1985): 86, <https://doi.org/10.2307/3135002>.

level.¹⁰ In 2021, a U.S. Department of Homeland Security (DHS) Office of Inspector General report noted preparedness coordination challenges on dam emergency planning between FEMA and the Cybersecurity and Infrastructure Security Agency (CISA).¹¹ Fragmentation is present in hazard mitigation programs, with many agencies responsible for grantmaking, technical assistance, and other activities.¹² The State of Virginia found that many issues identified during a 2018 snowstorm related to roles and responsibilities for preparedness and response were repeated during their 2022 snowstorm.¹³ A performance audit for Portland, Oregon, describes the shortfalls caused in emergency planning for individuals with disabilities due to the coordination required across several city departments.¹⁴ The emergency response-focused after-action report for the 2015 San Bernardino, California, terrorist attack noted, “there was some duplication of efforts and lack of coordination across departments.”¹⁵ In short, nearly every after-action report or performance audit on emergency management or homeland security agency includes a finding on interdepartmental coordination. These examples demonstrate that roles and responsibilities remain unclear within the government risk mitigation and consequence management space due to recurring duplication, overlap, and fragmentation.

¹⁰ Chris Currie, *Federal Emergency Management Agency: Progress and Continuing Challenges in National Preparedness Efforts*, GAO-16-560T (Washington, DC: Government Accountability Office, 2016), 1–14, <https://www.gao.gov/assets/gao-16-560t.pdf>.

¹¹ Office of Inspector General, *CISA Can Improve Efforts to Ensure Dam Security and Resilience* (Washington, DC: Department of Homeland Security, 2021), 8–10, <https://www.oig.dhs.gov/sites/default/files/assets/2021-09/OIG-21-59-Sep21.pdf>.

¹² Andrew Wells, J. Brandon Klezendorf, and W. Garrett Myler, “A Strategic Approach to Flood Risk Management,” *Journal of Critical Infrastructure Policy* 2, no. 1 (2021): 105–6, <https://doi.org/10.18278/jcip.2.1.8>; and Government Accountability Office, *Disaster Resilience Framework: Principles for Analyzing Federal Efforts to Facilitate and Promote Resilience to Natural Disasters*, GAO-20-100SP (Washington, DC: Government Accountability Office, 2019), 10–12, <https://www.gao.gov/assets/files.gao.gov/assets/gao-20-100sp.pdf>.

¹³ Michael C. Westfall, *2022 I-95 Snow Incident of January 3–4 Performance Audit* (Richmond, VA: Commonwealth of Virginia, 2022), 10–13, <https://www.osig.virginia.gov/media/governorvirginiagov/office-of-the-state-inspector-general/pdf/performance-audits/I-95-Snow-Incident-Report-FINAL-8-11-22.pdf>.

¹⁴ Portland City Auditor, *Emergency Management: Pandemic Highlights City’s Long-Standing Neglect of People with Disabilities* (Portland, OR: City of Portland, 2021), 6–9, <https://www.portland.gov/sites/default/files/2021/emergency-management-audit-report.pdf>.

¹⁵ San Bernardino County, *An Organizational Review of San Bernardino County’s Response to the December 2, 2015 Terrorist Attack* (San Bernardino, CA: San Bernardino County, 2018), 57, <http://www.sbcounty.gov/uploads/CAO/reports/December2OrganizationalReview.pdf>.

In the United States, risk mitigation and consequence management programs are typically delivered using the term “emergency management” across all levels of government. The “comprehensive emergency management” framework was introduced in 1978 by the National Governors Association (NGA) to horizontally consolidate the management of preparedness, response, recovery, and mitigation activities within one agency in each jurisdiction.¹⁶ This construct that focused on integrating these four “phases” of emergency management originated from the dysfunctional and fragmented interagency and intergovernmental response to numerous disasters in the 1970s and the dissatisfaction of state and local governments in being required to work across multiple

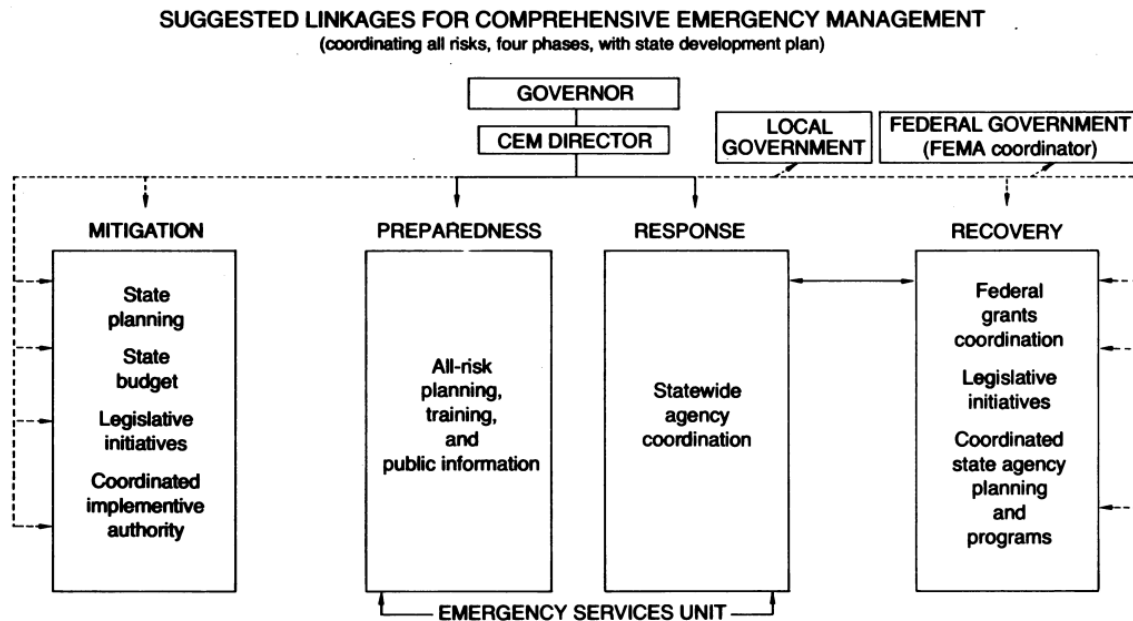
¹⁶ Timothy W. Kneeland, *Playing Politics with Natural Disaster: Hurricane Agnes, the 1972 Election, and the Origins of FEMA* (Ithaca, NY: Cornell University Press, 2020), 145, <https://www.jstor.org/stable/10.7591/j.ctvpwhgkp.1>; Scott Gabriel Knowles, *The Disaster Experts: Mastering Risk in Modern America* (Philadelphia: University of Pennsylvania Press, 2011), 272–73, www.jstor.org/stable/j.ctt3fhqj7; National Governors’ Association, *State Comprehensive Emergency Management: Final Report of the Emergency Preparedness Project* (Washington, DC: National Governors’ Association, 1978), ii; Cameron D. Carlson, “Homeland Security and Emergency Management Education: An Investigation into Workforce Needs” (PhD diss., University of Alaska, 2017), 30, <http://hdl.handle.net/11122/7589>; Jensen and Kirkpatrick, “Local Emergency Management and Comprehensive Emergency Management (CEM),” 2; National Governors’ Association, *Comprehensive Emergency Management*, 6, 11–12; and White House Office of Staff Secretary, *6/1/78 – Emergency Preparedness Reorganization Briefing Book* (Washington, DC: White House, 1978), https://www.jimmycarterlibrary.gov/sites/default/files/pdf_documents/digital_library/sso/148878/78/SSO_148878_078_07.pdf. Although the NGA report is frequently cited as the source of the FEMA’s creation, a simultaneous President’s Reorganization Project was being undertaken by the President Carter administration to reorganize the executive branch. Both initiatives worked closely with each other to both introduce comprehensive emergency management and establish FEMA.

federal agencies to receive disaster assistance.¹⁷ However, since its creation, the application of this model has fallen short in catalyzing the development of risk mitigation and consequence management synergies within jurisdictions.¹⁸ Although the comprehensive emergency management model is intended to provide holistic integration of risk mitigation and consequence management functions within jurisdictions, it has led to duplicate efforts and inadequate provision of services when implemented haphazardly.¹⁹ The NGA's proposed comprehensive emergency management construct is shown in Figure 1.

¹⁷ Carlson, "Homeland Security and Emergency Management Education," 27, 42; Harry B. Yoshpe, *Our Missing Shield: The U.S. Civil Defense Program in Historical Perspective* (Washington, DC: Federal Emergency Management Agency, 1981), 403–5, 460, <https://training.fema.gov/hiedu/docs/yoshpe,%20harry%20-%20our%20missing%20shield-the%20us%20civil%20def%20prog%20in%20historical%20perspective.pdf>; Henry B. Hogue and Keith Bea, *Federal Emergency Management and Homeland Security Organization: Historical Developments and Legislative Options*, CRS Report No. RL33369 (Washington, DC: Congressional Research Service, 2006), 12–14, <https://www.hsdl.org/c/abstract?docid=465961>; Patrick S. Roberts, *Disasters and the American State: How Politicians, Bureaucrats, and the Public Prepare for the Unexpected* (New York: Cambridge University Press, 2013), 74–78, www.doi.org/10.1017/CBO9781139198875; Homeland Security National Preparedness Task Force, *Civil Defense and Homeland Security: A Short History of National Preparedness Efforts* (Washington, DC: U.S. Department of Homeland Security, 2006), 15–18, <https://training.fema.gov/hiedu/docs/dhs%20civil%20defense-hs%20-%20short%20history.pdf>; Ted Steinberg, *Acts of God: The Unnatural History of Natural Disaster in America* (New York: Oxford University Press, 2000), 175, 177; Exec. Order No. 12127, 3 C.F.R. 376 § (1979); George D. Haddow, Jane A. Bullock, and Damon P. Coppola, *Introduction to Emergency Management*, 7th ed. (Oxford, UK: Elsevier Science, 2021), 5; Kneeland, *Playing Politics with Natural Disaster*, 74, 115, 117; Timothy W. Kneeland, *Declaring Disaster: Buffalo's Blizzard of '77 and the Creation of FEMA* (Syracuse, NY: Syracuse University Press, 2021), 62, 86, 87, <https://doi.org/10.2307/j.ctv16x2bfg>; Richard Sylves, *Disaster Policy and Politics: Emergency Management and Homeland Security*, 2nd ed. (Washington, DC: CQ Press, 2015), 13–17; Jensen and Kirkpatrick, "Local Emergency Management and Comprehensive Emergency Management (CEM)," 2; Thomas J. Kerr, *Civil Defense in the United States: Bandaid for a Holocaust?* (New York: Routledge, 2018), 148; National Governors' Association, *Comprehensive Emergency Management*, 1–3; and National Governors' Association, *State Comprehensive Emergency Management*, 76, 363–64.

¹⁸ Lucien Canton, *Emergency Management: Concepts and Strategies for Effective Programs*, 2nd ed. (Hoboken, NJ: John Wiley & Sons, 2020), 78–84; National Research Council, *Disaster Resilience*, 29; Jensen and Kirkpatrick, "Local Emergency Management and Comprehensive Emergency Management (CEM)," 1, 3; Roberts, *Disasters and the American State*, 79; Kushma, "Preparing for Disaster," 104; and National Academy of Public Administration, *Coping with Catastrophe: Building an Emergency Management System to Meet People's Needs in Natural and Manmade Disasters* (Washington, DC: National Academy of Public Administration, 1993), 41–45, 87, 104–5, <https://fas.org/irp/agency/dhs/fema/coping.pdf>.

¹⁹ Jensen and Kirkpatrick, "Local Emergency Management and Comprehensive Emergency Management (CEM)," 3; National Research Council, *Disaster Resilience*, 29; Lucas, "Analysis of the Baseline Assessments," 7; National Academy of Public Administration, *Coping with Catastrophe*, xi, 81, 87; David McLoughlin, "A Framework for Integrated Emergency Management," *Public Administration Review* 45 (1985): 168–72, <https://doi.org/10.2307/3135011>; Kushma, "Preparing for Disaster," 2, 93; and Sharon Louise Smith, "Why State Emergency Management Agencies Reorganize and the Repercussions" (PhD diss., University of Southern California, 1994), 2–3, <https://doi.org/10.25549/usctheses-c36-661264>.



Note: This is a functions linkage diagram. It is not an organizational chart or model.

Figure 1. National Governors Association Comprehensive Emergency Management Construct²⁰

At the beginning of the 21st century, the response to many disasters like COVID-19 demonstrated a movement away from the comprehensive emergency management model, with governors and mayors establishing separate entities and “administrative czars”

²⁰ Source: National Governors’ Association, *Comprehensive Emergency Management*, 9.

to manage long-term recovery.²¹ Independent “resilience” and “homeland security” offices have also been created to administer hazard mitigation and preparedness grant activities

²¹ New Jersey Executive Order No. 166, (2020), 3, <https://nj.gov/infobank/eo/056murphy/pdf/EO-166.pdf>; New Hampshire Executive Order 2020–06 (2020), 5, <https://www.governor.nh.gov/sites/g/files/ehbemt336/files/documents/2020-06.pdf>; “SPARK Recovery Office,” Kansas Office of Recovery, accessed October 29, 2020, <https://covid.ks.gov/spark-recovery-office/>; Brittany Eck, “From Disaster Recovery to Community Development and Revitalization” (Austin, TX: Texas General Land Office, April 6, 2016), <https://www.glo.texas.gov/the-glo/news/press-releases/2016/april/from-disaster-recovery-to-community-development-and-revitalization.pdf>; “Santa Cruz County Creates Office of Recovery, Resilience after Fire Devastation,” *Santa Cruz Sentinel*, October 6, 2020, <https://www.santacruzsentinel.com/santa-cruz-county-creates-office-of-recovery-resilience-after-fire-devastation>; Sonoma County, *Sonoma County Recovery & Resiliency Framework* (Santa Rosa, CA: Sonoma County, 2018), 5, <https://sonomacounty.ca.gov/WorkArea/DownloadAsset.aspx?id=2147567657>; Cristina del Mar Quiles, “A Guide to Understanding the Bureaucracy of ‘Recovery’ in Puerto Rico,” Centro de Periodismo Investigativo, September 23, 2019, <https://periodismoinvestigativo.com/2019/09/a-guide-to-understanding-the-bureaucracy-of-recovery-in-puerto-rico/>; Jensen and Kirkpatrick, “Local Emergency Management and Comprehensive Emergency Management (CEM),” 1–3; “PVD Rescue Plan – Task Force,” PVD Rescue Plan, accessed September 9, 2022, <https://pvdrescueplan.com/task-force/>; Claire Ferris, “Somerville to Receive Nearly \$78 Million in ARPA Funds,” *Tufts Daily*, October 28, 2021, <https://tuftsdaily.com/news/2021/10/28/somerville-to-receive-nearly-78-million-in-arpa-funds/>; Richard T. Weber and David A. McEntire, “A Functional Approach to Comprehensive Emergency Management,” *Journal of the American Society of Professional Emergency Planners* 9 (2002): 47; and Richard T. Sylves, “Ferment at FEMA: Reforming Emergency Management,” *Public Administration Review* 54, no. 3 (1994): 306, <https://doi.org/10.2307/976738>. Within the last decade, many disasters ranging from wildfires, hurricanes, and COVID-19 have resulted in the establishment of “recovery offices,” many cases associated with the chief executive of the jurisdiction.

across the United States.²² Furthermore, many larger jurisdictions have dedicated emergency management staff scattered throughout the organization, embedded within non-risk mitigation and consequence management agencies such as public health, transportation, and schools.²³

²² “Colorado Resiliency Office,” Colorado Resiliency Office, accessed October 29, 2020, <https://www.coresiliency.com>; “Mayor Garcetti Announces New ‘Chief Resilience Officer’ Coming to L.A.,” Office of Los Angeles Mayor Eric Garcetti, July 3, 2014, <https://www.lamayor.org/mayor-garcetti-announces-new-chief-resilience-officer-coming-la>; “Resilient305,” Miami-Dade County, accessed October 29, 2020, <https://www.miamidade.gov/global/economy/resilience/resilient305.page>; City of Norfolk, *Norfolk Resilience Strategy* (Norfolk, VA: City of Norfolk, 2015), 5, <https://www.norfolk.gov/DocumentCenter/View/27257/Norfolk-Resilience-Strategy-?bidId=>; Brittany Patterson, “After Deadly Floods, West Virginia Created A Resiliency Office. It’s Barely Functioning,” WVPB News, January 27, 2020, <https://www.wvpublic.org/news/2020-01-27/after-deadly-floods-west-virginia-created-a-resiliency-office-its-barely-functioning>; “Resilience Office – City and County of Honolulu Office of Climate Change, Sustainability and Resiliency,” Resilience Office – City and County of Honolulu Office of Climate Change, Sustainability and Resiliency, accessed July 3, 2022, <https://www.resilientoahu.org>; Jenna Kurzyna, “‘It Is a Huge Win for SC’: New Resilience Office Created to Address Flooding in South Carolina,” WLTX, October 15, 2020, <https://www.wltx.com/article/news/local/it-is-a-huge-win-for-sc-new-resilience-office-to-address-flooding/101-21e894a5-9672-484b-80eb-7988450f8e25>; City of San Francisco, *Resilient San Francisco: Stronger Today, Stronger Tomorrow* (San Francisco: City of San Francisco, 2016), 9, https://sfgov.org/orr/sites/default/files/documents/Resilient%20San%20Francisco_0.pdf; “About Kentucky Office of Homeland Security,” Kentucky Office of Homeland Security, accessed October 30, 2020, <https://homelandsecurity.ky.gov/About/Pages/default.aspx>; “Public Safety and Homeland Security,” Houston Mayor’s Office of Public Safety and Homeland Security, accessed October 30, 2020, <https://www.houstontx.gov/publicsafety/>; Jensen and Kirkpatrick, “Local Emergency Management and Comprehensive Emergency Management (CEM),” 1–2; Patrick S. Roberts, “Shifting Priorities: Congressional Incentives and the Homeland Security Granting Process,” *Review of Policy Research* 22, no. 4 (July 2005): 442, <https://doi.org/10.1111/j.1541-1338.2005.00148.x>; Trina Hembree and Amy Hughes, “Strategies for National Emergency Preparedness and Response: Integrating Homeland Security,” in *The Book of the States*, vol. 35 (Lexington, KY: Council of State Governments, 2003), 496, <https://issuu.com/csg-publications/docs/fullpdf>; and David Wilson and Andrew E. G. Jonas, “Urban Resilience: An Urban Political Movement,” *Urban Geography* 39, no. 8 (2018): 1265, <https://doi.org/10.1080/02723638.2018.1452873>. The establishment of state and local homeland security entities with emergency management grant management, training, and exercise responsibilities became popular after the establishment of the U.S. Department of Homeland Security in 2002. In 2013, the Rockefeller Foundation’s 100 Resilient Cities campaign popularized the concept of local and state resilience offices. Although the definition is widely disputed, resilience offices are typically oriented towards reducing risks and building capacity to deal with economic, political, and socio-physical shocks and stressors.

²³ “Emergency Management and Business Continuity,” Orange County Public Schools, accessed May 31, 2023, https://www.ocps.net/departments/safety_and_emergency_management/emergency_management_and_business_continuity; “Office of Preparedness and Emergency Management,” Mass.gov, accessed May 31, 2023, <https://www.mass.gov/orgs/office-of-preparedness-and-emergency-management>; “Intelligence, Security, and Emergency Response Organizational Functions,” Department of Transportation, January 25, 2022, <https://www.transportation.gov/mission/administrations/intelligence-security-emergency-response/how-were-organized>; and Kathleen Tierney, “Recent Developments in U.S. Homeland Security Policies and Their Implications for the Management of Extreme Events,” in *First International Conference on Urban Disaster Reduction*, Handbooks of Sociology and Social Research (Kobe, Japan: United Nations, 2005), 7, https://doi.org/10.1007/978-0-387-32353-4_23.

Scholars have also identified the lack of attention and clarity in roles and responsibilities across the phases of emergency management.²⁴ For instance, Jensen and Kirkpatrick's 2022 research found that emergency managers within cities with chief resilience officers (CROs) were not conducting activities across the breadth of comprehensive emergency management, nor was there any tension between agencies on the possible duplication of function.²⁵ Specifically, they claim, "It would not make sense to fight about something no one else claimed, and CROs saw their work in these areas as unclaimed territory."²⁶

It is unclear if the emerging distribution of these functions across a jurisdiction is intentional to improve performance or due to leadership's unfamiliarity with the comprehensive emergency management construct.²⁷ Despite these emerging organizational models, there is little to no guidance to explain how these approaches interact with or differ from comprehensive emergency management and if they influence

²⁴ Lucus, "Analysis of the Baseline Assessments," 7; Stehr, "Changing Roles and Responsibilities of the Local Emergency Manager," 49; Jensen and Kirkpatrick, "Local Emergency Management and Comprehensive Emergency Management (CEM)," 1, 3, 6–7; National Research Council, *Disaster Resilience*, 29; Kartez and Faupel, "Factors Promoting Comprehensive Local Government Hazards Management," 67; and Jensen and Kirkpatrick, "Local Recovery Coordinators and the National Disaster Recovery Framework," 158, 182.

²⁵ Jensen and Kirkpatrick, "Local Emergency Management and Comprehensive Emergency Management (CEM)," 3, 7–9.

²⁶ Jensen and Kirkpatrick, 7.

²⁷ Jensen and Kirkpatrick, 9.

the frequent interdisciplinary coordination challenges encountered before, during, and after disasters.²⁸

Creating new risk mitigation and consequence management agencies and reorganizing existing ones based on politics, grant funding, and institutional isomorphism rather than evidence-based structural design techniques may contribute to poor organizational performance.²⁹ The history of government risk mitigation and consequence management is littered with numerous cases of creating new agencies and reorganizing

²⁸ Jensen and Kirkpatrick, 4; Jensen and Kirkpatrick, “Local Recovery Coordinators and the National Disaster Recovery Framework,” 7; Mary Fastiggi, Sara Meerow, and Thaddeus R. Miller, “Governing Urban Resilience: Organisational Structures and Coordination Strategies in 20 North American City Governments,” *Urban Studies* 58, no. 6 (May 2021): 1263–64, <https://doi.org/10.1177/0042098020907277>; William Mark Fitzpatrick, “Homeland Security: What Are the Advantages and Disadvantages of Different Local Homeland Security Organizational Structures?” (master’s thesis, Naval Postgraduate School, 2015), 1–6, 17–18, <https://hdl.handle.net/10945/45851>; Peter J. May and Walter Williams, *Disaster Policy Implementation: Managing Programs under Shared Governance* (New York: Plenum Press, 1986), 71–72; Hogue and Bea, *Federal Emergency Management and Homeland Security Organization*, 23; David A. McEntire, “Local Emergency Management Organizations,” in *Handbook of Disaster Research*, ed. Havidán Rodríguez, Enrico L. Quarantelli, and Russell R. Dynes, Handbooks of Sociology and Social Research (New York: Springer, 2007), 178, 182, https://doi.org/10.1007/978-0-387-32353-4_10; National Governors’ Association, *Comprehensive Emergency Management*, 1; and Jerome H. Kahan, “Emergency Management and Homeland Security: Exploring the Relationship,” *Journal of Emergency Management* 13, no. 6 (2015): 483–84, <https://doi.org/10.5055/jem.2015.0258>.

²⁹ Gary Michael Durbin, “Organizational Structuring for Homeland Security: A U.S. State-by-State Comparative Analysis” (PhD diss., University of Southern California, 2009), 18–19, 27–29, 33, 35–36, 83–98, <https://doi.org/10.25549/usctheses-m2659>; Richard Chackerian, “Reorganization of State Governments: 1900–1985,” *Journal of Public Administration Research and Theory* 6, no. 1 (January 1996): 26, 35, 43, <https://doi.org/10.1093/oxfordjournals.jpart.a024301>; Michael B. Berkman and Christopher Reenock, “Incremental Consolidation and Comprehensive Reorganization of American State Executive Branches,” *American Journal of Political Science* 48, no. 4 (October 2004): 797–98, 808, 810, <https://doi.org/10.1111/j.0092-5853.2004.00102.x>; John Brademas, “Federal Reorganization and Its Likely Impacts on State and Local Government,” *Publius* 8, no. 2 (Spring 1978): 27, 36–37, <https://doi.org/10.1093/oxfordjournals.pubjof.a038495>; Smith, “Why State Emergency Management Agencies Reorganize,” 56–57, 67, 135–60, 172–89; National Academy of Public Administration, *Coping with Catastrophe*, 105; Derek S. Pugh and David J. Hickson, “Paul J. Dimaggio and Walter W. Powell,” in *Great Writers on Organizations*, 3rd ed. (Burlington, VT: Ashgate Publishing Company, 2007), 257–60; Paul J. DiMaggio and Walter W. Powell, “The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields,” *American Sociological Review* 48, no. 2 (April 1983): 150–54, <https://doi.org/10.2307/2095101>; Mark C. Suchman, “Managing Legitimacy: Strategic and Institutional Approaches,” *Academy of Management Review* 20, no. 3 (July 1995): 589, <https://doi.org/10.2307/258788>; John W. Meyer and Brian Rowan, “Institutionalized Organizations: Formal Structure as Myth and Ceremony,” *American Journal of Sociology* 83, no. 2 (September 1977): 340, 359–62, <https://doi.org/10.1086/226550>; Royston Greenwood and Danny Miller, “Tackling Design Anew: Getting Back to the Heart of Organizational Theory,” *Academy of Management Perspectives* 24, no. 4 (November 2010): 85–86, <http://www.jstor.org/stable/29764992>; Roberts, “Shifting Priorities,” 441; and Martha Derthick, *The Influence of Federal Grants: Public Assistance in Massachusetts* (Cambridge, MA: Harvard University Press, 1970), 216, 237.

existing ones.³⁰ Graff notes, “No other seemingly key governmental duty has been so thoroughly reimagined so many times.”³¹ These cases include the threat of nuclear attack that established civil defense in the early twentieth century.³² The ineffective response to multiple disasters in the 1970s resulted in the creation of FEMA and the introduction of comprehensive emergency management.³³ Further mismanagement of disasters throughout the 1980s and early 1990s led to reforms elevating FEMA to cabinet-status in 1996.³⁴ The 9/11 terrorist attacks initiated the reversal of this elevated status and expedited the development of the homeland security concept in the early 2000s.³⁵ Finally, the failed response to Hurricane Katrina led to the 2006 Post-Katrina Emergency Management Reform Act (PKEMRA), FEMA’s most recent major reorganization as of 2023.³⁶

³⁰ Melissa M. Howard, “Organization and Reorganization as Manifestation of Public Policy: National Security Emergency Management” (PhD diss., Virginia Polytechnic Institute and State University, 1992), 8–9, <https://vtechworks.lib.vt.edu/handle/10919/39684>.

³¹ Garrett M. Graff, *Raven Rock: The Story of the U. S. Government’s Secret Plan to Save Itself—While the Rest of Us Die* (New York: Simon & Schuster, 2017), 77.

³² Yoshpe, *Our Missing Shield*, 1, 55.

³³ Kneeland, *Playing Politics with Natural Disaster*, 145; Knowles, *The Disaster Experts*, 272–73; National Governors’ Association, *Comprehensive Emergency Management*, 11–12; and Exec. Order No. 12127.

³⁴ Kneeland, *Playing Politics with Natural Disaster*, 148–49; R. Steven Daniels and Carolyn L. Clark-Daniels, *Transforming Government: The Renewal and Revitalization of the Federal Emergency Management Agency* (Arlington, VA: The PricewaterhouseCoopers Endowment for The Business of Government, 2000), 13, <https://www.fema.gov/pdf/library/danielsreport.pdf>; Office of Inspector General, *FEMA: In or Out?*, OIG-09-25 (Washington, DC: Department of Homeland Security, 2009), 5, https://www.oig.dhs.gov/sites/default/files/assets/Mgmt/OIG_09-25_Feb09.pdf; Hogue and Bea, *Federal Emergency Management and Homeland Security Organization*, 18; Keith Bea, *Organization and Mission of the Emergency Preparedness and Response Directorate: Issues and Options for the 109th Congress*, CRS Report No. RL33064 (Washington, DC: Congressional Research Service, 2005), 39, <https://www.hsdl.org/c/abstract?docid=456183>; and William J. Clinton, “Telephone Remarks to the National Emergency Management Association Meeting,” *Weekly Compilation of Presidential Documents* 32, no. 9 (March 4, 1996): 380, <https://www.govinfo.gov/content/pkg/WCPD-1996-03-04/pdf/WCPD-1996-03-04-Pg380.pdf>.

³⁵ Keith Bea, *Transfer of FEMA to the Department of Homeland Security: Issues for Congressional Oversight*, CRS Report No. RL31670 (Washington, DC: Congressional Research Service, 2002), 1–4, <https://www.hsdl.org/c/abstract?docid=101>; Kneeland, *Playing Politics with Natural Disaster*, 149; Office of Inspector General, *FEMA*, 6–7; and Commission on National Security/21st Century, *Road Map for National Security: Imperative for Change* (Washington, DC: Commission on National Security/21st Century, 2001), 15, <https://govinfo.library.unt.edu/nssg/PhaseIIIFR.pdf>.

³⁶ Keith Bea, *Federal Emergency Management Policy Changes After Hurricane Katrina: A Summary of Statutory Provisions*, CRS Report No. RL33729 (Washington, DC: Congressional Research Service, 2007), 5–11, <https://sgp.fas.org/crs/homesecc/RL33729.pdf>; Post-Katrina Emergency Management Reform Act of 2006, Pub. L. No. 109–295, § 601, 120 Stat. 1394 (2006), <https://www.congress.gov/109/plaws/publ295/PLAW-109publ295.pdf>; and Kneeland, *Playing Politics with Natural Disaster*, 149–50.

Like these previous focusing events that led to substantial legislative and policy changes, COVID-19 may lead to similar reorganizations of government risk mitigation and consequence management organizations.³⁷ In 2022, HHS announced significant structural design changes to the CDC and the organizational elevation of the new Administration for Strategic Preparedness & Response.³⁸ The City of Somerville, Massachusetts, created a new Emergency Management Department in 2021 due to lessons learned from COVID-19.³⁹ These serve as just a few of the sentinel examples of proposals to reorganize government risk mitigation and consequence management organizations across the United States after the pandemic.

There has been considerable research on the influence of poor vertical coordination between levels of government within all phases of emergency management.⁴⁰ Vertical coordination refers to the integrated effort and activity that “takes place between two or more levels of government.”⁴¹ Typically, studies on this topic focus on intergovernmental

³⁷ Durbin, “Organizational Structuring for Homeland Security,” 34; Tierney, “Recent Developments in U.S. Homeland Security Policies,” 1; “Disaster Time Line: Major Focusing Events and U.S. Outcomes (1978-2006)” (Arlington VA: Claire B. Rubin & Associates, May 2007), https://onlinepubs.trb.org/onlinepubs/trnews/trnews250_insert.pdf; and Thomas A. Birkland, *After Disaster: Agenda Setting, Public Policy, and Focusing Events* (Washington, DC: Georgetown University Press, 1997), 3.

³⁸ Diamond, “Officials Reorganize HHS to Boost Pandemic Response”; and Sharon LaFraniere and Noah Weiland, “Walensky, Citing Botched Pandemic Response, Calls for C.D.C. Reorganization,” *New York Times*, August 17, 2022, sec. U.S., <https://www.nytimes.com/2022/08/17/us/politics/cdc-rochelle-walensky-covid.html>.

³⁹ City of Somerville, *City of Somerville, MA Hotwash Report* (Somerville, MA: City of Somerville, MA, 2021), 3, 6.

⁴⁰ Kushma, “Preparing for Disaster,” 74–80; Brian J. Gerber and Scott E. Robinson, “Local Government Performance and the Challenges of Regional Preparedness for Disasters,” *Public Performance & Management Review* 32, no. 3 (2009): 346, 359, <https://doi.org/10.2753/PMR1530-9576320301>; Paul J. Liquorie, “Homeland Security Is Hometown Security: Comparison and Case Studies of Vertically Synchronized Catastrophe Response Plans” (master’s thesis, Naval Postgraduate School, 2015), 23, <https://hdl.handle.net/10945/47297>; Paul Posner, *Homeland Security: Effective Intergovernmental Coordination Is Key to Success*, GAO-02-1013T (Washington, DC: General Accounting Office, 2002), 4, <https://www.gao.gov/assets/gao-02-1013t.pdf>; and Thomas A. Birkland, “Disasters, Catastrophes, and Policy Failure in the Homeland Security Era,” *Review of Policy Research* 26, no. 4 (2009): 425–26, <https://doi.org/10.1111/j.1541-1338.2009.00393.x>.

⁴¹ Zhilin Liu et al., “Multi-Level Governance, Policy Coordination and Subnational Responses to COVID-19: Comparing China and the US,” *Journal of Comparative Policy Analysis: Research and Practice* 23, no. 2 (April 2021): 207, <https://doi.org/10.1080/13876988.2021.1873703>.

relations, federalism, and government preemption.⁴² This thesis argues that this is only one dimension of a more complex operating model and that the horizontal coordination derived from the deliberate structural design of organizations within a jurisdiction is also a significant contributor. Horizontal coordination can refer to both the joint activity and information processing within a government jurisdiction (interdepartmental) and with other jurisdictions at the same level (interjurisdictional).⁴³ This study focused on this interdepartmental horizontal dimension of risk mitigation and consequence management coordination using the organization theory and design body of knowledge.

With the interest to make significant changes to government risk mitigation and consequence management organizations due to issues identified during COVID-19 and an increasingly complex hazardscape, this thesis applied organization theory and design to inform the next iteration of these agencies.⁴⁴ The thesis looked beyond the traditional focus of emergency response reform and considered the deliberate consolidation, distribution, integration, and structural design of government mitigation, preparedness, response, and recovery functions. With this analysis, the thesis recommends structural design techniques

⁴² Samuel H. Clovis, “Promises Unfulfilled: The Suboptimization of Homeland Security National Preparedness,” *Homeland Security Affairs* 4, no. 3 (October 2008): 4, <https://calhoun.nps.edu/handle/10945/25040>; White House, *The Federal Response to Hurricane Katrina: Lessons Learned* (Washington, DC: White House, 2006), 67, <https://web.archive.org/web/20100531182129/http://georgewbush-whitehouse.archives.gov/reports/katrina-lessons-learned.pdf>; and David McEntire and John Lindsay, “One Neighborhood, Two Families: A Comparison of Intergovernmental Emergency Management Relationships,” *Journal of Emergency Management* 10, no. 2 (2012): 94, <https://doi.org/10.5055/jem.2012.0090>.

⁴³ Liu et al., “Multi-Level Governance, Policy Coordination and Subnational Responses to COVID-19,” 207.

⁴⁴ National Emergency Management Association, “NEMA 2022 Annual Forum General Session Minutes” (Stowe, VT: National Emergency Management Association, October 20, 2022), 2, <https://www.nemaweb.org/index.php/files/46/Forums/411/NEMA-2022-Annual-Forum-GS-Minutes.pdf>; Diamond, “Officials Reorganize HHS to Boost Pandemic Response”; Federal Emergency Management Agency, *Stakeholder Engagement Findings for Road to Resilience* (Washington, DC: Federal Emergency Management Agency, 2023), 1; Carlos Martín et al., “Federal Disaster Management Is a Confusing Patchwork. Reforming FEMA and Improving Interagency Coordination Can Fix It,” Brookings, August 3, 2023, <https://www.brookings.edu/articles/federal-disaster-management-is-a-confusing-patchwork-reforming-fema-and-improving-interagency-coordination-can-fix-it/>; and S. Khan, “Disasters: Contributions of Hazardscape and Gaps in Response Practices,” *Natural Hazards and Earth System Sciences* 12, no. 12 (December 2012): 3776, <https://doi.org/10.5194/nhess-12-3775-2012>. As defined by Khan, a hazardscape “demonstrates the ecological perspective of hazards and consequent risks, which build through intricate relationships between human beings and the environment in a particular spatio-temporal context.”

that may enable these functions to be performed in a way that is more effective and efficient.

B. RESEARCH QUESTION

How can risk mitigation and consequence management functions be organized in a governmental jurisdiction to improve efficiency and effectiveness?

C. THESIS ROADMAP

This chapter described the challenges of simultaneously distributing and consolidating risk mitigation and consequence management functions across the government. The research design is presented in Chapter II, highlighting how the literature review, analytical framework, and case study tie together. In Chapter III, a literature review spanning two key topic areas is the foundation for an evidence-based comparison evaluating the distribution and consolidation of government risk mitigation and consequence management functions in local government. The two sections focus on the vast literature on organization theory and design and how organizations can be evaluated for efficiency and effectiveness. Chapter IV describes the analytical framework from a government risk mitigation and consequence management organization context and discusses optimal organization designs oriented towards standardization and efficiency or learning and innovation. In addition, this chapter provides an overview of design techniques that can be utilized to improve performance. Chapter V provides a case study overview of how risk mitigation and consequence management functions across all four phases of comprehensive emergency management are organized in a local jurisdiction. Using the analytical framework, the local jurisdiction's structure is assessed against the optimal organization design for an organization of its type, as identified in Chapter IV. Finally, Chapter VII summarizes the thesis and provides additional recommendations to improve the effectiveness and efficiency of government risk mitigation and consequence management function delivery through organization theory and design smart practices.

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II. RESEARCH DESIGN

A. INTRODUCTION

This chapter outlines the research design for the thesis. The research design is divided into three stages. The first stage consists of the design of an analytical framework derived from Daft's text *Organization Theory & Design*.⁴⁵ Stage two describes how characteristics from risk management and consequence management organizations were applied to Daft's framework to determine if an efficiency-oriented "mechanistic" or innovation-oriented "organic" structural design orientation is optimal for emergency management's mitigation, preparedness, response, and recovery phases. The third stage explains how the case study city's organizational structure was compared to an optimal structural design orientation derived from Daft's framework.

The chapter closes by providing a brief overview of the thesis scope, including areas of study that were avoided and the use of specific terminology. The Naval Postgraduate School Institutional Review Board (IRB) has reviewed this study and determined that the research does not involve human subjects. Therefore, IRB review and approval were not required, and a determination was provided confirming these parameters.

B. STAGE 1: ANALYTICAL FRAMEWORK DESIGN

The first stage of the research design for this study was the development of an analytical framework. The purpose of this analytical framework is to characterize an organization's structure so that both the level of organizational "fit" and symptoms of structural deficiency can be identified and assessed. Drawing from the organization theory and design literature, numerous theories, models, and frameworks were evaluated for applicability to government organizational structures. A large amount of the data generated

⁴⁵ Daft, *Organization Theory & Design*, 18.

by this assessment originates from scholars within the sociology, business, operations research, and management science fields.⁴⁶

Structural contingency theory was selected as the basis for the thesis analytical framework due to its flexibility in applying a wide selection of structural design elements to specific organizational conditions to improve performance.⁴⁷ Structural contingency theory is particularly pertinent to studying risk mitigation and consequence management organizations due to the diversity in organization sizes, activities, missions, locations, and cultures.⁴⁸ No organization of this type is alike, and the analytical framework used to assess the organization and distribution of functions must consider multiple variables.⁴⁹

Structural contingency theory has been studied using numerous lenses since the middle of the twentieth century, with key scholars considering different internal and external environment characteristics that may influence an organization's structural design.⁵⁰ Although the theory has continued to evolve, when searching for current literature on organization design, structural contingency theory is infrequently referenced

⁴⁶ William H. Starbuck, "The Origins of Organization Theory," in *The Oxford Handbook of Organization Theory*, ed. Christian Knudsen and Haridimos Tsoukas (Oxford, UK: Oxford University Press, 2005), 144, <https://doi.org/10.1093/oxfordhb/9780199275250.003.0006>.

⁴⁷ Eric J. Walton, "The Persistence of Bureaucracy: A Meta-Analysis of Weber's Model of Bureaucratic Control," *Organization Studies* 26, no. 4 (April 2005): 570–71, <https://doi.org/10.1177/0170840605051481>; and Shmuel Ellis, Tamar Almor, and Oded Shenkar, "Structural Contingency Revisited: Toward a Dynamic System Model," *Emergence* 4, no. 4 (December 2002): 51–85, https://doi.org/10.1207/S15327000EM0404_6.

⁴⁸ Thomas E. Drabek, *The Professional Emergency Manager: Structures and Strategies for Success* (Boulder, CO: University of Colorado, 1987), 233, <http://hermes.cde.state.co.us/drupal/islandora/object/co:21889/datastream/OBJ/view>; Dennis E. Wenger, Russell R. Dynes, and E. L. Quarantelli, *Disaster Analysis: Emergency Management Offices And Arrangements* (Newark, DE: Disaster Research Center, 1987), 59–65, 68–69, <https://udspace.udel.edu/handle/19716/1138>; and Lisa Stevenson and Marie Hayman, *Local Government Disaster Protection* (Washington, DC: International City Management Association, 1981), 1, 35, 37, 54, <https://apps.dtic.mil/sti/pdfs/ADA095279.pdf>.

⁴⁹ Drabek, *Professional Emergency Manager*, 9, 253; and Stevenson and Hayman, *Local Government Disaster Protection*, 1, 35, 54, 68–69.

⁵⁰ Paul R. Lawrence, "The Contingency Approach to Organizational Design," in *Handbook of Organizational Behavior*, ed. Robert T. Golembiewski, 2nd ed. (New York: Marcel Dekker, 2000), 8, https://archive.org/details/handbookoforgani0000unse_16k8.

today.⁵¹ Scholars posit this may be due to the theory's complexity or the varied evidence produced.⁵² However, as Turkulainen and Ketokivi noted in 2013, "a visit to any organization quickly reveals that the fundamental questions asked by contingency theorists are hardly out of fashion: How does one integrate a complex organization? What are the benefits?"⁵³ Deliberate organization design is an approach to integrating government risk mitigation and consequence management organizations, but it is unclear if a benefit to this integration is greater organizational effectiveness. Therefore, contingency theory appeared to have applicability to the thesis research question.

The structural contingency theory-derived analytical framework established by Daft in his text *Organization Theory & Design* offered a viable approach to testing various organization design techniques with different types of risk mitigation and consequence management organizations.⁵⁴ Daft's framework is most helpful to adapt for this thesis as it incorporates the findings of many studies on structural contingency theory, many of which focus on only a few contingency factors.⁵⁵ Figure 2 shows a graphical representation of Daft's analytical framework.

⁵¹ Virpi Turkulainen and Mikko Ketokivi, "The Contingent Value of Organizational Integration," *Journal of Organization Design* 2, no. 2 (2013): 39, <https://doi.org/10.7146/jod.7864>; Oded Shenkar and Shmuel Ellis, "The Rise and Fall of Structural Contingency Theory: A Theory's 'Autopsy,'" *Journal of Management Studies* 59, no. 3 (May 2022): 783, <https://doi.org/10.1111/joms.12772>; Johannes M. Pennings, "Structural Contingency Theory: A Reappraisal," in *Research in Organizational Behavior*, ed. Barry M. Staw and L.L. Cummings, vol. 14 (Greenwich, CT: JAI Press, 1992), 268; and Andrew H. Van de Ven, Martin Ganco, and C. R. (Bob) Hinings, "Returning to the Frontier of Contingency Theory of Organizational and Institutional Designs," *Academy of Management Annals* 7, no. 1 (June 2013): 396, <https://doi.org/10.5465/19416520.2013.774981>.

⁵² Turkulainen and Ketokivi, "The Contingent Value of Organizational Integration," 39; Jeffrey Pfeffer, *New Directions for Organization Theory: Problems and Prospects* (New York: Oxford University Press, 1997), 160; and Pennings, "Structural Contingency Theory," 279–80.

⁵³ Turkulainen and Ketokivi, "The Contingent Value of Organizational Integration," 39.

⁵⁴ Daft, *Organization Theory & Design*, 18; and Drabek, *Professional Emergency Manager*, 9.

⁵⁵ Walton, "The Persistence of Bureaucracy," 572; and Lex Donaldson, *The Contingency Theory of Organizations* (Thousand Oaks, CA: Sage Publications, 2001), 1–2.

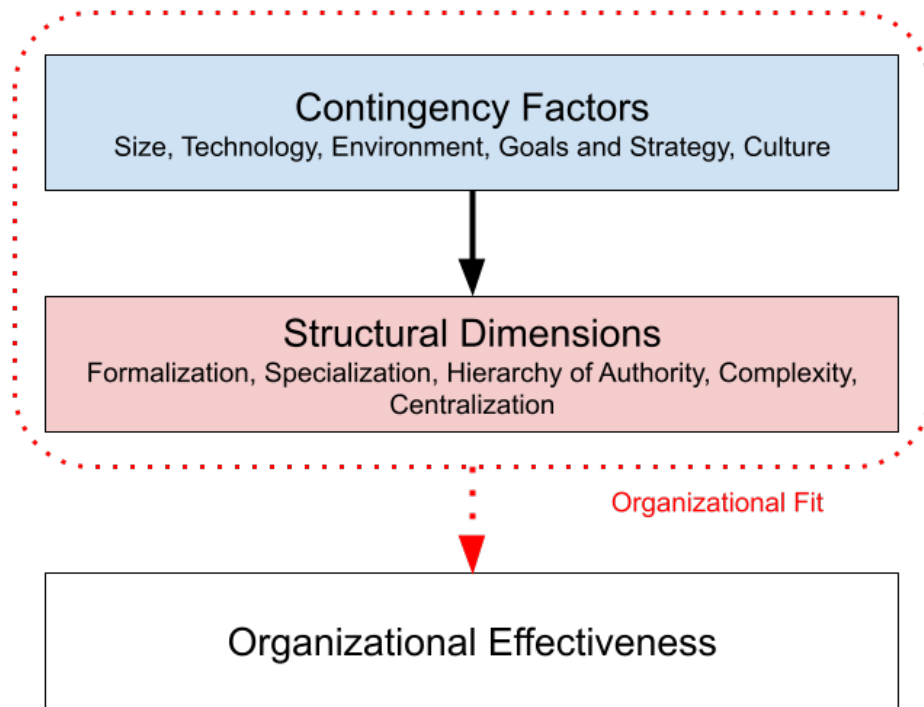


Figure 2. Analytical Framework

Daft's analytical framework focuses on two core concepts: contingency factors and structural dimensions.⁵⁶ Contingency factors are the organization's internal and external characteristics that influence the structural design.⁵⁷ Daft explains, "Contingency means that one thing depends on other things, and for organizations to be effective there must be a 'goodness of fit' between their design and various contingency factors."⁵⁸ Although a nearly endless number of contingency factors could be considered, this thesis focused on the five identified by Daft that are most commonly studied: strategy and goals, size,

⁵⁶ Daft, *Organization Theory & Design*, 18.

⁵⁷ Daft, 18.

⁵⁸ Daft, 29; and Pennings, "Structural Contingency Theory," 268.

environment, culture, and technology.⁵⁹ Contingency factors can include the number of employees in an organization, the types of activities it engages in, and the operating environment within which it works, among other variables.

Structural dimensions help an organization achieve better “fit” for its contingency factors.⁶⁰ Daft incorporates five key structural dimensions from the organization design literature that are most commonly adjusted by organizations to improve performance: hierarchy of authority, complexity, specialization, formalization, and centralization.⁶¹ These can be influenced by numerous design techniques, including the deliberate grouping of staff into departments, creating linking mechanisms between teams, and changing reporting relationships.

Variations in contingency factors and structural dimensions for each organization are typically described by their orientation on the organic and mechanistic design continuum.⁶² Organization design is typically described as “organic,” focused on learning and innovation or as “mechanistic,” focused on standardization and efficiency. Although organizations can adjust their contingency factors in limited cases, structural dimensions are typically used as the levers to bring an organization’s structure into alignment with an organic or mechanistic design. Table 1 displays the optimal contingency factor and structural dimension orientations for mechanistic and organic organizations.

⁵⁹ Daft, *Organization Theory & Design*, 20, 22; Richard M. Burton, Børge Obel, and Dorthe D. Håkonsson, “Contingency Theory, Dynamic Fit, and Contracts,” in *Advancing Organizational Theory in a Complex World*, ed. Jane XJ Qiu et al. (New York: Routledge, 2017), 1, <https://doi.org/10.4324/9781315677293>; Richard M. Burton, Børge Obel, and Dorthe Døjbak Håkonsson, *Organizational Design: A Step-by-Step Approach*, 3rd ed. (Cambridge, UK: Cambridge University Press, 2015), 4, <http://archive.org/details/organizationalde0000burt>; and Ellis, Almor, and Shenkar, “Structural Contingency Revisited,” 57–61.

⁶⁰ Daft, *Organization Theory & Design*, 18.

⁶¹ Daft, 18; and Xenophon Koufteros et al., “The Impact of Organizational Structure on Internal and External Integration: An Empirical, Cross-Regional Assessment,” *Journal of Organization Design* 3, no. 2 (2014): 1, <https://doi.org/10.7146/jod.7386>.

⁶² Daft, *Organization Theory & Design*, 30; and James D. Madia, “Homeland Security Organizations: Design Contingencies in Complex Environments” (master’s thesis, Naval Postgraduate School, 2011), 18–19, <http://hdl.handle.net/10945/5559>. Additional information on this topic can be found in Chapter IV.

Table 1. Typical Contingency Factor and Structural Dimension Orientations⁶³

	Mechanistic Design (Efficiency)	Organic Design (Learning)
Contingency Factors		
Size	Large Size	Small Size
Technology	“Manufacturing” Technology	“Service” Technology
Environment	Stable Environment	Changing Environment
Goals and Strategy	Efficiency Strategy	Innovation Strategy
Culture	Rigid Culture	Adaptive Culture
Structural Dimensions		
Formalization	Many Rules, Formalized	Few Rules, Informal
Specialization	Specialized Tasks	Empowered Roles
Hierarchy of Authority	Strict Hierarchy of Authority	Collaborative Teamwork
Complexity	Vertical Communications	Horizontal Communications
Centralization	Centralized Structure	Decentralized Structure

The research question also required the analytical framework to connect deliberate structural organization design or redesign with organizational performance. Much of the literature linking performance to organization design focuses on the social construct of organizational effectiveness.⁶⁴ Numerous approaches to assessing organizational effectiveness were reviewed for benefits within the context of risk mitigation and consequence management organizations. The internal process approach to measuring organizational effectiveness is most closely aligned with structural contingency theory, which states a better “fit” between an organization’s contingency factors and structural

⁶³ Adapted from Daft, *Organization Theory & Design*, 30.

⁶⁴ Robert D. Herman and David O. Renz, “Advancing Nonprofit Organizational Effectiveness Research and Theory: Nine Theses,” *Nonprofit Management and Leadership* 18, no. 4 (Summer 2008): 404, <https://doi.org/10.1002/nml.195>; Eric J. Walton and Sarah Dawson, “Managers’ Perceptions of Criteria of Organizational Effectiveness,” *Journal of Management Studies* 38, no. 2 (March 2001): 173, <https://doi.org/10.1111/1467-6486.00233>; and Kim S. Cameron and David A. Whetten, “Organizational Effectiveness: One Model or Several?,” in *Organizational Effectiveness: A Comparison of Multiple Models*, ed. Kim S. Cameron and David A. Whetten (New York: Academic Press, 1983), 1–2, 7.

design results in a more effective organization.⁶⁵ The analytical framework is further described and outlined in Chapter IV of this thesis.

C. STAGE 2: ORIENTING THE FRAMEWORK FOR OPTIMAL FIT

To assess the case study jurisdiction's organizational structure for effectiveness, it was necessary to first map each of Daft's contingency factors and structural dimensions to their optimal orientations along the "**mechanistic/organic**" continuum in the context of government risk mitigation and consequence management organizations. These optimal orientations were crafted by reviewing risk mitigation and consequence management and organization theory literature. Government reports, professional associations' resources, and scholars' research were assessed to determine the frequent internal and external characteristics influencing each contingency factor's optimal orientation in risk mitigation and consequence management organizations. Organization theory and design literature served as the primary source to understand the tools and techniques that can be utilized to shape an organization's structural dimensions. This review assessed and compared standard design techniques in the private sector, non-governmental organizations, and government. Figure 3 shows a graphical representation of this study's analytical framework applied to risk mitigation and consequence management functions. A detailed summary of the contingency factors and their associated risk mitigation and consequence management influencing drivers is provided in Table 2.

⁶⁵ Walton, "The Persistence of Bureaucracy," 570; Donaldson, *The Contingency Theory of Organizations*, 1, 185; Pennings, "Structural Contingency Theory," 268; Ben Nanfeng Luo, Lex Donaldson, and Kangkang Yu, "Fit of Structure to Multiple Contingencies: Equifinality versus the Contingency Imperative," in *Advancing Organizational Theory in a Complex World*, ed. Jane XJ Qiu et al. (New York: Routledge, 2017), 41, <https://doi.org/10.4324/9781315677293>; David S. Alberts and Mark E. Nissen, "Toward Harmonizing Command and Control with Organization and Management Theory," *The International C2 Journal* 3, no. 2 (2009): 25–26, <http://hdl.handle.net/10945/31209>; Chris Argyris, *Integrating the Individual and the Organization* (New York: Routledge, 2017), 115, 125, <https://doi.org/10.4324/9780203788417>; Rensis Likert, *The Human Organization: Its Management and Value* (New York: McGraw-Hill, 1967), 75–76; Cheri Ostroff and Neal Schmitt, "Configurations of Organizational Effectiveness and Efficiency," *Academy of Management Journal* 36, no. 6 (December 1993): 1346, 1356, <https://doi.org/10.2307/256814>; J. Barton Cunningham, "Approaches to the Evaluation of Organizational Effectiveness," *Academy of Management Review* 2, no. 3 (July 1977): 466, 470, <https://doi.org/10.2307/257702>; and John M. Pfiffner and Frank P. Sherwood, *Administrative Organization* (Englewood Cliffs, NJ: Prentice-Hall, 1960), 415–20, <https://hdl.handle.net/2027/mdp.39015018626161>.

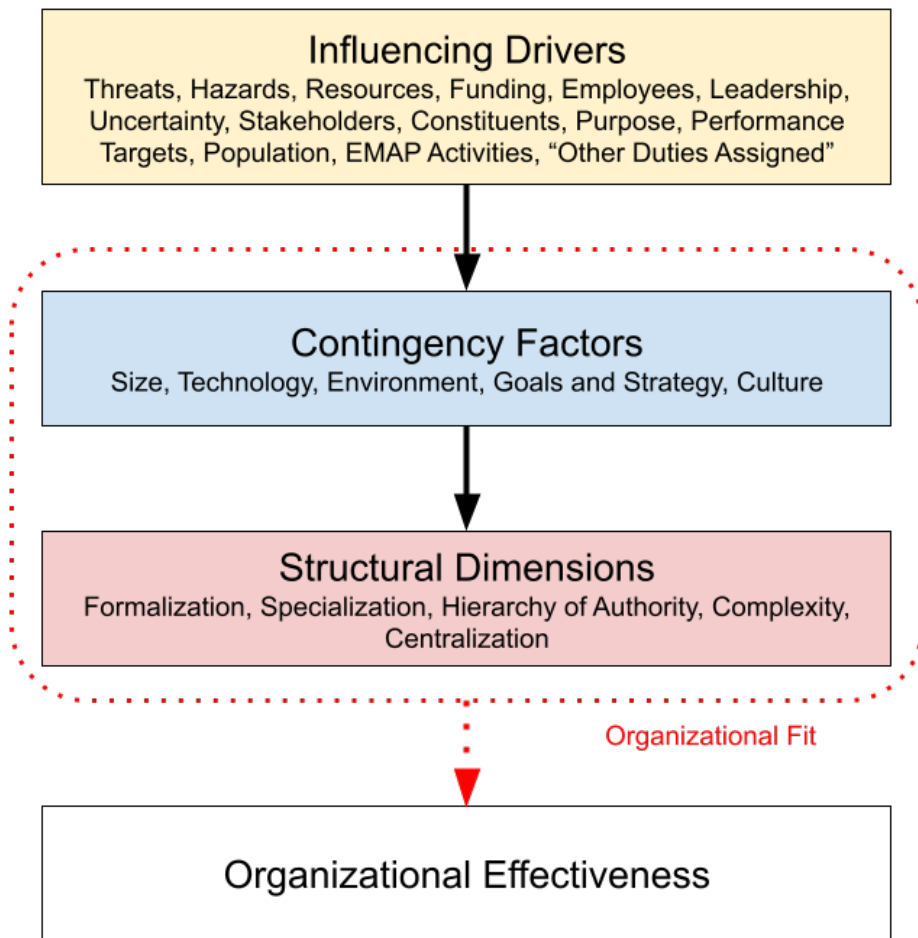


Figure 3. Analytical Framework Applied to Risk Mitigation and Consequence Management Functions

Table 2. Contingency Factors and Associated Influencing Drivers

Influencing Drivers	Contingency Factors
Population, Threats, Hazards, Resources, and Funding	Size
EMAP Activities, “Other Duties Assigned,” Threats, Hazards, Resources, and Funding	Technology
Uncertainty, Stakeholders, Constituents, Threats, Hazards, Resources, and Funding	Environment
Purpose, Performance Targets, Threats, Hazards, Resources, and Funding	Goals and Strategy
Employees, Leadership, Threats, Hazards, Resources, and Funding	Culture

The process used to apply the **influencing driver** of the Emergency Management Accreditation Program (EMAP) Emergency Management Standard to the “technology” **contingency factor** for the response phase of emergency management is a helpful example to demonstrate Stage 2 of the research design.⁶⁶ From an organizational design lens, the technology contingency factor is comprised of tools, techniques, and actions used to transform inputs into outputs.⁶⁷ During Stage 2, the literature was searched for two primary resources: the influencing drivers of each contingency factor and frameworks to assess the optimal orientation of each contingency factor. For influencing drivers, the EMAP Emergency Management Standard was one good source to identify the diverse set of activities, processes, and tasks risk mitigation/consequence organizations conduct within each of the four phases of emergency management.⁶⁸

For frameworks to assess optimal orientation, the “organizational technologies” were assessed using tools like Perrow’s 1967 model, which categorizes technologies in a

⁶⁶ Daft, *Organization Theory & Design*, 22; and Emergency Management Accreditation Program, *Emergency Management Standard*.

⁶⁷ In the sense of organization design, the term technology is not limited to the common definition of the term, focused on “information technology” systems and equipment.

⁶⁸ Daft, *Organization Theory & Design*, 22; and Emergency Management Accreditation Program, *Emergency Management Standard*.

2x2 matrix across two variables: task variety and analyzability.⁶⁹ Technologies within the response phase of emergency management involve a substantial amount of task variety and less analyzability, resulting in them being primarily classified as “nonroutine,” according to Perrow’s model.⁷⁰ Nonroutine technologies support a learning and innovation-oriented organic design.⁷¹ With this in mind, the optimal orientation for the technology contingency factor within the response phase would be **organic**.

As represented by Figure 4, this process was conducted for each of the five contingency factors and five structural dimensions. The research provided an optimal orientation recommendation for each contingency factor and structural dimension in each of the four emergency management phases and a separate recommendation for a consolidated risk mitigation and consequence management organization that performs functions across multiple phases. For each contingency factor, applicable models like Perrow’s were used to determine if efficiency-oriented mechanistic or innovation-oriented organic structural techniques are most appropriate.⁷² Chapter IV describes each contingency factor and structural dimension in detail.

⁶⁹ Charles Perrow, “A Framework for the Comparative Analysis of Organizations,” *American Sociological Review* 32, no. 2 (April 1967): 194–97, <https://doi.org/10.2307/2091811>; and Charles Perrow, *Organizational Analysis: A Sociological View* (Belmont, CA: Brooks/Cole Publishing Company, 1970), 75–91. From an organizational design lens, variety is defined as the number of exceptions that occur in the work activity. Analyzability is defined as the ability to break down work processes to specific steps and procedures that could be repeated easily by another person or machine. Additional information on this topic and a figure of Perrow’s model can be found in Chapter IV.

⁷⁰ Perrow, “A Framework for the Comparative Analysis of Organizations,” 194–97; and Perrow, *Organizational Analysis*, 75–91. The contingency factor category of technology is typically described as “routine,” with low task variety and high analyzability or as “nonroutine,” with high task variety and low analyzability. Additional information on this topic can be found in Chapter IV.

⁷¹ Christopher Gresov, “Exploring Fit and Misfit with Multiple Contingencies,” *Administrative Science Quarterly* 34, no. 3 (September 1989): 432–33, 435–36, <https://doi.org/10.2307/2393152>; Dale L. Goodhue and Ronald L. Thompson, “Task-Technology Fit and Individual Performance,” *MIS Quarterly* 19, no. 2 (June 1995): 213–36, <https://doi.org/10.2307/249689>; Peggy Leatt and Rodney Schneck, “Criteria for Grouping Nursing Subunits in Hospitals,” *Academy of Management Journal* 27, no. 1 (March 1984): 163, <https://doi.org/10.2307/255963>; and Robert T. Keller, “Technology-Information Processing Fit and the Performance of R&D Project Groups: A Test of Contingency Theory,” *Academy of Management Journal* 37, no. 1 (February 1994): 167–69, 175–77, <https://doi.org/10.2307/256775>.

⁷² Tom Burns and G.M. Stalker, *The Management of Innovation* (London: Tavistock Publications, 1961), 5–7, <https://archive.org/details/managementofinno0000burn>.

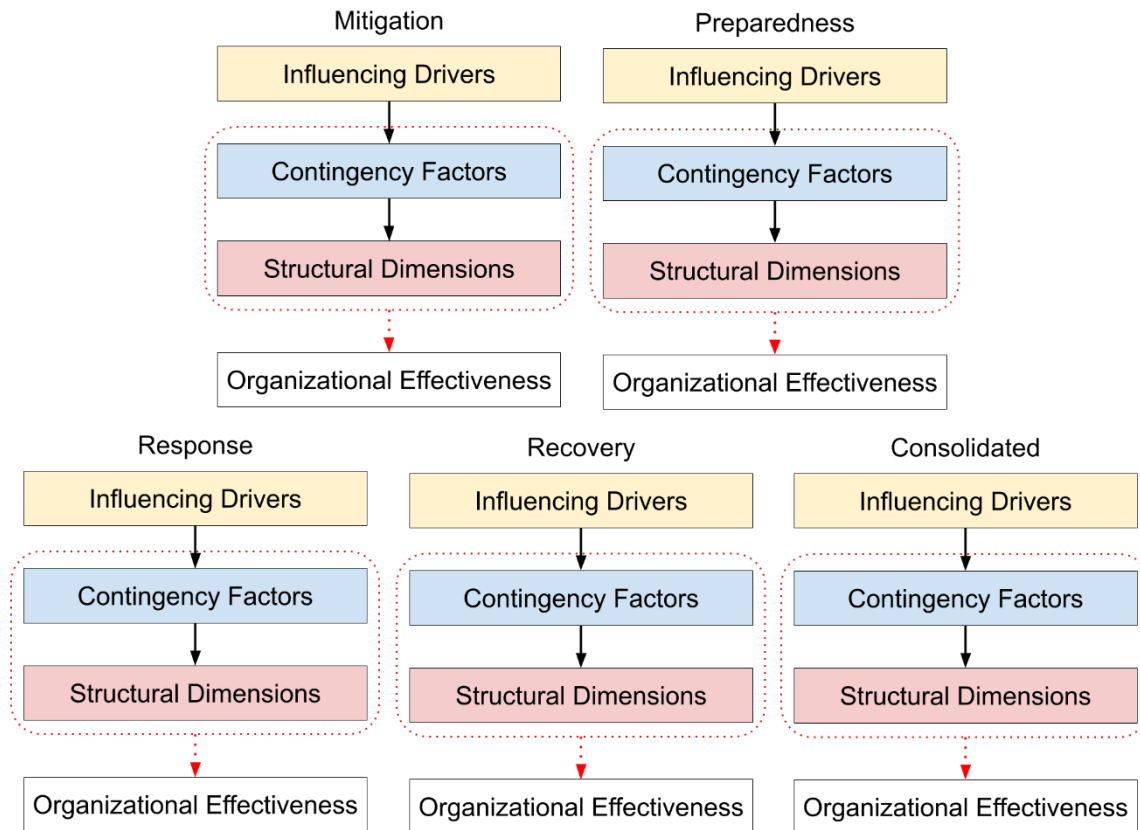


Figure 4. Identifying Optimal Orientation in Each Emergency Management Phase

D. STAGE 3: CASE STUDY ANALYSIS

Following the design of the analytical framework and identifying optimal orientations for government risk mitigation and consequence management organizations, the thesis tested the applicability of Daft’s analytical framework by conducting a “plausibility probe” case study on a local jurisdiction. A plausibility probe is a method of inquiry in which candidate theories (in this case, structural contingency theory) are tested for potential validity using a case study.⁷³ Eckstein notes that such a plausibility probe enables the researcher to “determine whether potential validity may reasonably be considered great enough to warrant the pains and costs of testing, which are almost always

⁷³ Harry Eckstein, “Case Study and Theory in Political Science,” in *Case Study Method*, ed. Roger Gomm, Martyn Hammersley, and Peter Foster (London: SAGE Publications Ltd, 2009), 15, <https://doi.org/10.4135/9780857024367.d11>.

considerable, but especially so if broad, painstaking comparative studies are undertaken.”⁷⁴ With numerous theoretical constructs available to assess the performance of organizational structures, conducting a plausibility probe case study using structural contingency theory served as an essential step in determining the theory’s applicability to the organization and distribution of risk mitigation and consequence management functions.

To conduct the plausibility probe, the thesis used the qualitative case study to assess the distribution of risk mitigation and consequence management functions and the applicable design techniques applied in a local jurisdiction by using Daft’s analytical framework described in Stages 1 and 2.⁷⁵ The case study method is useful when previous theoretical propositions have been developed and warrant further testing.⁷⁶ Although case studies can incorporate multiple cases, this thesis focused on a single case to flesh out the theoretical application of Daft’s analytical framework.⁷⁷ The case study captured insights into the structural contingency theory analytical framework’s performance, and adjustments were identified for future tests. This thesis took advantage of the case study method’s ability to incorporate multiple levels of analysis by considering contingency factor and structural dimension orientations at both the jurisdictional and agency levels.⁷⁸

As pointed out by Yin, the case study method supports research where “there will be many more variables of interest than data points.”⁷⁹ There are a significant number of

⁷⁴ Eckstein, 15.

⁷⁵ Daft, *Organization Theory & Design*, 18.

⁷⁶ Robert K. Yin, *Case Study Research and Applications: Design and Methods*, 6th ed. (Thousand Oaks, CA: SAGE Publications, 2018), 46; and Kathleen M. Eisenhardt, “Building Theories from Case Study Research,” *Academy of Management Review* 14, no. 4 (October 1989): 532–50, 548–49, <https://doi.org/10.2307/258557>.

⁷⁷ Alexander L. George and Andrew Bennett, *Case Studies and Theory Development in the Social Sciences* (Cambridge, MA: MIT Press, 2005), 110, 368, <https://archive.org/details/casestudies theor0000geor>; and Daft, *Organization Theory & Design*, 18.

⁷⁸ Eisenhardt, “Building Theories from Case Study Research,” 534; and Albert Mills, Gabrielle Durepos, and Elden Wiebe, eds., “Single-Case Designs,” in *Encyclopedia of Case Study Research* (Thousand Oaks, CA: SAGE Publications, 2010), 4, <https://doi.org/10.4135/9781412957397>.

⁷⁹ Yin, *Case Study Research and Applications*, 46.

variables and factors involved in the structural contingency theory analytical framework.⁸⁰ The case study method enables each aspect of the analytical framework to be exposed and studied for interactions outside of the theoretical environment.⁸¹ Furthermore, Yin notes that the case study method “relies on multiple sources of evidence, with data needing to converge in a triangulating fashion.”⁸²

Yin identifies the limitations of case study research. First, many case studies are not rigorous due to the lack of adherence to a systematic procedure or the inclusion of ambiguous evidence.⁸³ The thesis addressed this issue by developing a strict process of selecting a theoretical framework, collecting and triangulating multiple sources of evidence, applying it to the analytical framework, and comparing the results to the optimal organization design configurations. Others consider case studies of limited value because the conclusions cannot be generalized by their very nature.⁸⁴ Basing the analytical framework on Daft’s flexible and broad theoretical model should help apply it to diverse cases, including different levels of government and types of organizations.⁸⁵ Most importantly, the goal of the case study was to generalize structural contingency theory to risk mitigation and consequence management organizations and not extrapolate probabilities that a particular structure will be effective in a specific environment.⁸⁶

Finally, case studies can incorporate bias, given the personal involvement of the researcher in the process, via in-depth reviews, observations, and other interactions

⁸⁰ Gresov, “Exploring Fit and Misfit,” 431; and Peter Klaas and Jørgen T. Lauridsen, “Structural Adaptation to Regain Fit: Multiple Misfits and Structural Complexity,” in *Advancing Organizational Theory in a Complex World*, ed. Jane XJ Qiu et al. (New York: Routledge, 2017), 18, <https://doi.org/10.4324/9781315677293>.

⁸¹ Eisenhardt, “Building Theories from Case Study Research,” 545; and Yin, *Case Study Research and Applications*, 219.

⁸² Yin, *Case Study Research and Applications*, 46.

⁸³ Yin, 50.

⁸⁴ Yin, 52; and Andrew Bennett and Colin Elman, “Qualitative Research: Recent Developments in Case Study Methods,” *Annual Review of Political Science* 9, no. 1 (2006): 473, <https://doi.org/10.1146/annurev.polisci.8.082103.104918>.

⁸⁵ Daft, *Organization Theory & Design*, 18.

⁸⁶ Yin, *Case Study Research and Applications*, 53.

between researchers and participants.⁸⁷ This study attempted to avoid this problem by triangulating evidence from many sources and not conducting any interviews.⁸⁸ It is important to note that the thesis author served as the inaugural emergency manager for the case study jurisdiction. As Glense notes, “backyard” research on the researcher’s organization can present bias if not carefully controlled, as the researcher has access to data that may not be accurate or interpreted objectively.⁸⁹ Hopefully, this firsthand experience will provide a substantial contribution to the literature. As noted by Emmerich in 1948, “Amidst the current clamor for a more scientific and empirical method of testing, measuring, and evaluating administrative phenomena, there is still on broad problems no known substitute for the historical method in the hands of a first-rate participant, recorder, and generalizer.”⁹⁰

To conduct the case study analysis, a local jurisdiction’s contingency factors and structural dimensions were identified and evaluated using the same analytical framework used to craft the optimal orientations in Stage 2. The case study jurisdiction’s contingency factors determined whether an organic or mechanistic design would be most appropriate. The independent variables were the contingency factors and structural dimensions, while organizational “fit” was the dependent variable. One challenge with the framework selected for this thesis is the number of independent variables. Changes in one or more contingency factors or structural dimensions may influence organizational “fit.” Additionally, some scholars believe that structural dimension adjustments may impact contingency factors.⁹¹ Because of this complexity, this analysis considered any adjustment of the case study jurisdiction’s structural dimensions towards the optimal structural dimensions identified in Daft’s text for organic and mechanistic structures as progress

⁸⁷ Yin, 124; and John W. Creswell and J. David Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 5th ed. (Thousand Oaks, CA: SAGE Publications, 2018), 260.

⁸⁸ Yin, *Case Study Research and Applications*, 170.

⁸⁹ Corrine Glesne, *Becoming Qualitative Researchers: An Introduction*, 5th ed. (Boston, MA: Pearson, 2016), 48–50; and Creswell and Creswell, *Research Design*, 260–61.

⁹⁰ Herbert Emmerich, “Purpose into Mission,” ed. Luther Gulick, *Public Administration Review* 8, no. 3 (Summer 1948): 212, <https://doi.org/10.2307/972327>.

⁹¹ Henry Mintzberg, “Structure in 5’s: A Synthesis of the Research on Organization Design,” *Management Science* 26, no. 3 (March 1980): 328, <https://www.jstor.org/stable/2630506>.

towards improving organizational “fit.”⁹² This condition is known as “quasi-fit.”⁹³ Optimal structural dimensions for organic and mechanistic contingency factors can be found in Table 1.

After identifying and assessing the local jurisdiction’s actual contingency factors and structural dimensions, their organic or mechanistic orientations and associated design characteristics were compared to the optimal ones in Daft’s text.⁹⁴ Several contributions to the literature cite specific sources that note that optimal organizational “fit” indicates improved organizational effectiveness.⁹⁵ With this thesis using the internal process approach to measure organizational effectiveness, a structure incorporating the design mechanisms that align with the organization’s contingency factors should result in improved performance.⁹⁶

When describing variability within contingency factors and structural dimensions, the typical approach is to measure each on a continuum (Figure 5) with mechanistic (focused on efficiency) and organic (focused on learning and innovation) styles as the extremes.⁹⁷ However, it is improbable that all traits of any contingency factor or structural

⁹² Lex Donaldson, “The Contingency Theory of Organizational Design: Challenges and Opportunities,” in *Organization Design*, ed. Richard M. Burton et al. (New York: Springer U.S., 2006), 23, <https://www.doi.org/10.1007/0-387-34173-0>; and Donaldson, *The Contingency Theory of Organizations*, 258–59.

⁹³ Donaldson, “The Contingency Theory of Organizational Design,” 23; and Donaldson, *The Contingency Theory of Organizations*, 258–59.

⁹⁴ Daft, *Organization Theory & Design*, 30.

⁹⁵ Walton, “The Persistence of Bureaucracy,” 570; Donaldson, *The Contingency Theory of Organizations*, 1, 185; Pennings, “Structural Contingency Theory,” 268; Luo, Donaldson, and Yu, “Fit of Structure to Multiple Contingencies,” 41; and Alberts and Nissen, “Toward Harmonizing Command and Control with Organization and Management Theory,” 25–26.

⁹⁶ Cunningham, “Approaches to the Evaluation of Organizational Effectiveness,” 472; Richard Beckhard, *Organization Development: Strategies and Models* (Reading, MA: Addison-Wesley, 1969), 10–11, <http://archive.org/details/organizationdeve0000beck>; Donaldson, *The Contingency Theory of Organizations*, 1–2, 185; Pennings, “Structural Contingency Theory,” 268; and Luo, Donaldson, and Yu, “Fit of Structure to Multiple Contingencies,” 41.

⁹⁷ Burns and Stalker, *The Management of Innovation*, 5–7.

dimension will fall on one extreme or the other.⁹⁸ In addition, many categories of contingency factors and structural dimensions can be measured using models with multiple dimensions. For instance, the environment contingency factor category is typically measured using a framework that considers dynamism and complexity in a 2x2 matrix.⁹⁹ A 2x2 matrix helps the user categorize and sort information along two scales. With this in mind, the analysis detailed each contingency factor and structural dimension within the case study while qualifying it with either mechanistic or organic attributes. An attempt was also made throughout the research to describe each case study contingency factor and structural dimension relative to an entirely mechanistic or organic optimal “fit” orientation.

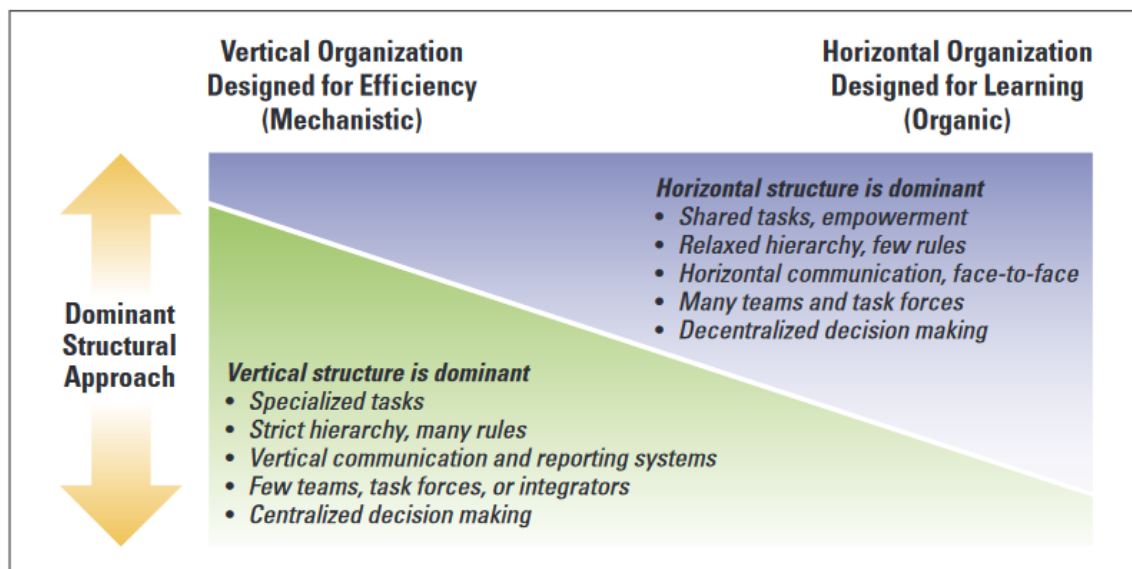


Figure 5. Mechanistic and Organic Design Continuum¹⁰⁰

⁹⁸ Jay R. Galbraith, “The Evolution of Enterprise Organization Designs,” *Journal of Organization Design* 1, no. 2 (2012): 3–4, <https://doi.org/10.7146/jod.6342>; Madia, “Homeland Security Organizations,” 18–19; Shenkar and Ellis, “The Rise and Fall of Structural Contingency Theory,” 790; and Ellis, Almor, and Shenkar, “Structural Contingency Revisited,” 73.

⁹⁹ Daft, *Organization Theory & Design*, 166. From an organizational design lens, the environment contingency factor is described as the elements with that exist outside of an organization’s boundaries. Environment is typically assessed on a combination of dynamism, how frequently elements change in the environment, and complexity, the number of diverse organizations it must interface with. Additional information on this topic can be found in Chapter IV.

¹⁰⁰ Source: Daft, 97.

The City of Somerville was selected as the local jurisdiction for the case study due to its unique organizational structure, which distributed mitigation and recovery functions to other departments outside the newly established emergency management department. This case jurisdiction was worthy of attention due to its use of an organizational model reminiscent of an era before the promotion of combining mitigation, preparedness, response, and recovery functions under a consolidated comprehensive emergency management agency.

E. STUDY SCOPE

1. Structural Design

Given the broad scope of organization theory and design, this thesis evaluated the day-to-day structural design of risk mitigation and consequence management staff and resources in government. Chandler introduced the concept of strategic organization design in 1962, studying and defining three types of structures: functional, multidivisional, and holding company.¹⁰¹ Later, leading organization design expert Jay Galbraith designed the “Star Model,” a framework that outlined “a series of design policies that are controllable by management and can influence employee behavior.”¹⁰² Rather than focusing solely on organization structure, Galbraith believed that effective organization design required careful consideration of five elements: strategy, structure, processes, rewards, and people.¹⁰³ Howard notes that the original architects of the Federal Emergency Management Agency (FEMA) understood “organizational design alone would not solve all the problems” when designing comprehensive emergency management’s “blueprint”

¹⁰¹ Alfred D. Chandler, *Strategy and Structure: Chapters in the History of the Industrial Enterprise* (Cambridge, MA: M.I.T. Press, 1962), 1–17, <https://archive.org/details/strategystructur00chan>.

¹⁰² Jay R. Galbraith, *The Star Model* (Denver, CO: Galbraith Management Consultants), accessed September 10, 2022, <http://www.jaygalbraith.com/images/pdfs/StarModel.pdf>; Jay R. Galbraith, *Organization Design* (Reading, MA: Addison-Wesley Publishing Company, 1977), 31, <https://archive.org/details/organizationdesi0000galb>; Jay R. Galbraith, *Designing Organizations: Strategy, Structure, and Process at the Business Unit and Enterprise Levels*, 3rd ed. (San Francisco: Jossey-Bass, 2014), 15–20, <https://learning.oreilly.com/library/view/designing-organizations-strategy/9781118463826/>; and Galbraith, “The Evolution of Enterprise Organization Designs,” 3.

¹⁰³ Galbraith, *The Star Model*, 4; Galbraith, *Organization Design*, 31; Galbraith, *Designing Organizations*, 15–20; and Galbraith, “The Evolution of Enterprise Organization Designs,” 3.

agency.¹⁰⁴ Likewise, when proposing a design for a new national homeland security agency in 2001, the Hart-Rudman Commission noted, “Organizational reform is not a panacea. There is no perfect organizational design, no flawless managerial fix.”¹⁰⁵ Other disaster and emergency management scholars have conducted significant research within the different categories within the “Star Model,” ranging from the professionalization of emergency management staff to the flow of information through emergent crisis networks.¹⁰⁶ However, the study of structure, particularly the permanent operating structures of government agencies responsible for risk mitigation and consequence management functions, is an area about which limited literature exists.¹⁰⁷ With this in mind, this thesis maintained a narrow scope on the structural assessment of organizations to contribute to the broader understanding of organization design in risk mitigation and consequence management. Galbraith’s Star Model is shown in Figure 6.

¹⁰⁴ Howard, “Organization and Reorganization as Manifestation of Public Policy,” 161–62.

¹⁰⁵ Commission on National Security/21st Century, *Road Map for National Security*, vi.

¹⁰⁶ Namkyung Oh and Junghyae Lee, “Changing Landscape of Emergency Management Research: A Systematic Review with Bibliometric Analysis,” *International Journal of Disaster Risk Reduction* 49 (October 2020): 101658, <https://doi.org/10.1016/j.ijdr.2020.101658>; Jensen and Kirkpatrick, “Local Emergency Management and Comprehensive Emergency Management (CEM),” 3; Louise K. Comfort, William L. Waugh, and Beverly A. Cigler, “Emergency Management Research and Practice in Public Administration: Emergence, Evolution, Expansion, and Future Directions,” *Public Administration Review* 72, no. 4 (2012): 539–47, <https://doi.org/10.1111/j.1540-6210.2012.02549.x>; and Jessica Jensen and Steven Thompson, “The Incident Command System: A Literature Review,” *Disasters* 40, no. 1 (January 2016): 158–82, <https://doi.org/10.1111/disa.12135>.

¹⁰⁷ Lowell Dimoff, “Effective Organizational Structure and Leadership Theory for Homeland Security Organizations” (PhD diss., St. John’s University, 2022), 46, https://scholar.stjohns.edu/theses_dissertations/458; McEntire, “Local Emergency Management Organizations,” 181–82; and Howard, “Organization and Reorganization as Manifestation of Public Policy,” 9.

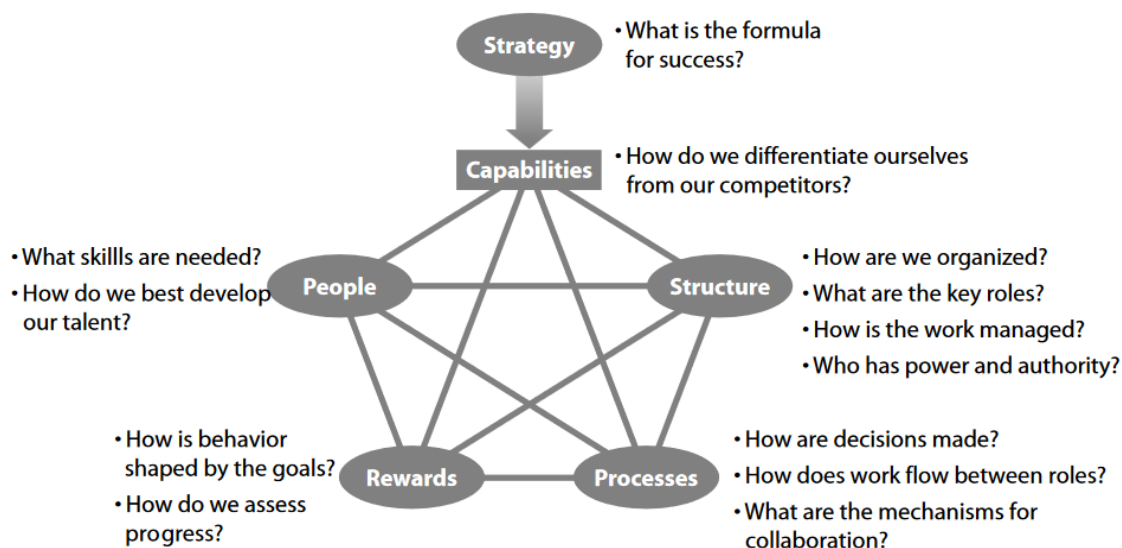


Figure 6. Galbraith's Star Model¹⁰⁸

2. Risk Mitigation and Consequence Management

This thesis frequently centered around the joint use of the terms “risk mitigation” and “consequence management,” concepts not commonly used by emergency management and homeland security practitioners in the United States to describe their organizations. These two terms were jointly referenced in the RAND Corporation report *Streamlining Emergency Management* to describe a proposed simplified construct for emergency management planning (Figure 7) as an alternative to the current five mission areas used by the U.S. Department of Homeland Security (DHS) and FEMA; prevention, protection, mitigation, response, and recovery.¹⁰⁹ The combined terms are helpful in this thesis's context as they are a somewhat generic and neutral descriptor for the diverse set of functions that government emergency management, homeland security, and resilience organizations undertake. In addition, it includes the related activities that other government agencies may perform with a primary function outside of traditional emergency

¹⁰⁸ Source: Amy Kates and Jay R. Galbraith, *Designing Your Organization: Using the Star Model to Solve 5 Critical Design Challenges* (San Francisco: Jossey-Bass, 2007), 3.

¹⁰⁹ Barnosky et al., *Streamlining Emergency Management*, 25–26.

management or homeland security, including public health emergency preparedness and critical infrastructure protection.

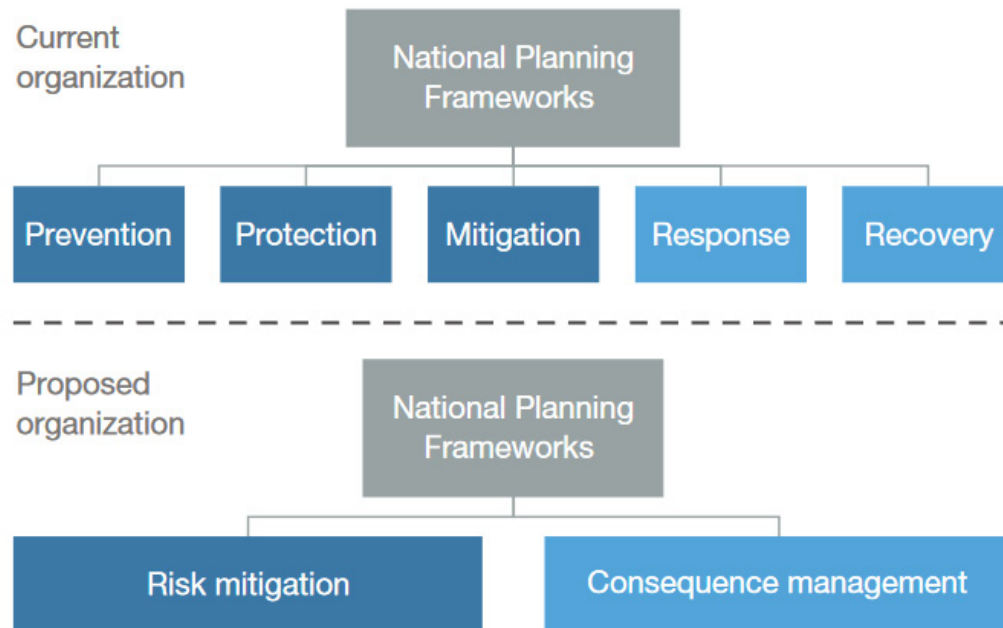


Figure 7. RAND Corporation's Proposed Emergency Management Policy Construct¹¹⁰

Although the thesis frequently references the term “comprehensive emergency management” when discussing the common standards, models, and the historical context of consolidating risk mitigation and consequence management activities, it was avoided as the general term used to describe these functions to delineate formal emergency management agencies and prevent confusion with homeland security, resilience, and other similar entities operating in this space. In addition, this thesis also considered the influence of organization theory and design on risk mitigation and consequence management activities that are not integrated within a single consolidated agency, a concept that conflicts with the “comprehensive” nature of the “comprehensive emergency

¹¹⁰ Source: Barnosky et al., 26.

management” construct.¹¹¹ In sum, “comprehensive emergency management” would not have effectively described the breadth of organizations to which the analytical framework could be applied.

3. Magnitude of Hazard Events

Using the generic terms “risk mitigation” and “consequence management” also helped to avoid existing assumptions of the scale and magnitude of hazards where these activities are performed. The term “comprehensive emergency management” is misunderstood by many outside the field.¹¹² Emergency management agencies do not spend most of their time “managing emergencies” but instead dedicate a significant portion of their time to developing plans, acquiring equipment, and conducting stakeholder training and exercises.¹¹³ This term confuses the public, who frequently believe that the agency’s tasks and activities include managing more routine emergencies.¹¹⁴

This thesis scope focused on the somewhat artificial threshold of a “disaster” event type in which deliberate attempts are made to mitigate risks and manage consequences. Quarantelli published a frequently referenced paper comparing “disasters” and “emergencies” in 2000.¹¹⁵ His research defines how disasters differ from emergencies. During disasters, organizations must coordinate with many more unfamiliar groups, lose part of their autonomy, have different performance standards, and require close public/

¹¹¹ National Governors’ Association, *Comprehensive Emergency Management*, 11.

¹¹² McEntire, “Local Emergency Management Organizations,” 169; and David McEntire, “The Status of Emergency Management Theory: Issues, Barriers, and Recommendations for Improved Scholarship” (FEMA Higher Education Conference, Emmitsburg, MD, 2004), 5, <https://training.fema.gov/emiweb/downloads/david%20mcintire%20-%20%20status%20of%20emergency%20management%20theory.pdf>.

¹¹³ McEntire, “Local Emergency Management Organizations,” 172; Frances L. Edwards and Daniel C. Goodrich, “Organizing for Emergency Management,” in *Emergency Management: Principles and Practice for Local Government*, ed. William L. Waugh and Kathleen J. Tierney, 2nd ed. (Washington, DC: ICMA Press, 2007), 44; Brenda D. Phillips, Dave M. Neal, and Gary R. Webb, *Introduction to Emergency Management*, 2nd ed. (Boca Raton, FL: CRC Press, 2017), 317, <https://doi.org/10.1201/9781315394701>; and Stehr, “Changing Roles and Responsibilities of the Local Emergency Manager,” 44.

¹¹⁴ McEntire, “Local Emergency Management Organizations,” 169.

¹¹⁵ E.L. Quarantelli, “Emergencies, Disaster and Catastrophes Are Different Phenomena” (working paper, Disaster Research Center, 2000), 1–2, <http://udspace.udel.edu/handle/19716/674>.

private interfaces.¹¹⁶ “Emergencies” happen daily across the country ranging from injuries, water main breaks, house fires, and violent disputes between individuals. For each of these example events, government organizations like emergency medical services, public works, fire, and law enforcement will likely respond and “manage” the “emergency” without the intervention of the types of organizations considered within this thesis.¹¹⁷ While these entities are critical partners in risk mitigation and consequence management efforts, this thesis was not concerned with the scale of emergencies those organizations mitigate and respond to daily.

4. Types of Functions

With a scope of hazard events selected, determining which activities encompass risk mitigation and consequence management functions and which do not was essential to study their placement in government jurisdictions. Although nonprofit and private sector organizations play an indispensable role in reducing disaster risk in society, this thesis focused on the functions likely to be managed by government entities. For this thesis, the activities within the EMAP Emergency Management Standard were most relevant to analyzing consolidated and distributed risk mitigation and consequence management functions across the government.¹¹⁸

The EMAP Emergency Management Standard organizes tasks and activities in a granular enough approach to allow for their assessment across various jurisdiction sizes and orientations. EMAP acknowledges that even if one of the required functions is not being performed by a consolidated comprehensive emergency management agency, there must be provisions for the function’s delivery by another entity in the jurisdiction.¹¹⁹ This requirement supported the research framework of this thesis by considering the placement of all risk mitigation and consequence management functions, regardless if they are

¹¹⁶ Quarantelli, 1–2.

¹¹⁷ McEntire, “Local Emergency Management Organizations,” 169.

¹¹⁸ Emergency Management Accreditation Program, *Emergency Management Standard*.

¹¹⁹ Emergency Management Accreditation Program, 5; and William L. Waugh and Gregory Streib, “Collaboration and Leadership for Effective Emergency Management,” *Public Administration Review* 66, no. s1 (2006): 137, <https://doi.org/10.1111/j.1540-6210.2006.00673.x>.

contained within a consolidated comprehensive emergency management agency or distributed throughout a jurisdiction's government structure.¹²⁰ The 66 EMAP Emergency Management Standard elements also support the structural aspects of organization design by enabling a highly granular grouping and dividing of tasks.¹²¹

The EMAP Emergency Management Standard was used as the scope of activities for this study as no standard exists that outlines the functions of a homeland security agency or resilience office.¹²² While not a consensus-based standard, FEMA's Core Capabilities construct was also considered as it covers many homeland security-oriented functions.¹²³ It was ultimately avoided as it encompasses many activities outside the risk mitigation and consequence management scope that the thesis focused on.¹²⁴ Other consensus-based standards outside emergency management include discipline-specific emergency management activities, including the Public Health Advisory Board (PHAB) Accreditation and the Commission on Accreditation for Law Enforcement Agencies (CALEA) Accreditation.¹²⁵ But, because these standards focus not on the diverse selection of activities that make up a jurisdictional risk mitigation and consequence management program, they did not apply to this analysis.

¹²⁰ Canton, *Emergency Management*, 78–79, 85.

¹²¹ Burton, Obel, and Håkonsson, *Organizational Design*, 111–12; and “The Emergency Management Standard,” Emergency Management Accreditation Program, accessed May 30, 2023, <https://emap.org/the-emergency-management-standard/>.

¹²² Ben Canada, *Homeland Security: Standards for State and Local Preparedness*, CRS Report No. RL31680 (Washington, DC: Congressional Research Service, 2003), 1–2, <https://www.hsdl.org/c/abstract?docid=445671>.

¹²³ Department of Homeland Security, *National Preparedness Goal*, 2nd ed. (Washington, DC: Department of Homeland Security, 2015), 2, https://www.fema.gov/sites/default/files/2020-06/national_preparedness_goal_2nd_edition.pdf.

¹²⁴ Department of Homeland Security, 2.

¹²⁵ Public Health Accreditation Board, *Standards & Measures for Initial Accreditation: Version 2022* (Alexandria, VA: Public Health Accreditation Board, 2022), <https://phaboard.org/wp-content/uploads/Standards-Measures-Initial-Accreditation-Version-2022.pdf>; and “Law Enforcement – Standards Titles,” The Commission on Accreditation for Law Enforcement Agencies, accessed September 10, 2022, <https://www.calea.org/node/11406>.

5. Organizing the Functions

The EMAP Emergency Management Standard also proved helpful as it aligns the program requirements with the four “phases” of emergency management described in the 1979 National Governors Association (NGA) *Comprehensive Emergency Management: A Governor’s Guide*.¹²⁶ Despite the NGA’s disclaimer that the four phases were not an organizational chart or model, these phases are typical guardrails utilized frequently to organize tasks and activities.¹²⁷ They are reflected in the organizational structures of many government risk mitigation and consequence management agencies.¹²⁸ As described in the analytical framework section, this thesis used an organization’s participation in each phase to assess their contingency factors’ mechanistic or organic orientation. While the thesis considered consolidated government risk mitigation and consequence management organization models that do not fit within the comprehensive emergency management construct (i.e., homeland security, resilience, and others), using these four phases provided the best available framework to group common activities and functions together.

The author acknowledges that the value of the construct of the four emergency management phases is disputed to some extent.¹²⁹ Furthermore, many organizations have interpreted the functions of each phase differently or have created additional phases that shift activities out of the original four categories.¹³⁰ The use of similar terminology as part of the DHS National Preparedness Goal’s “mission areas” can create confusion when

¹²⁶ National Governors’ Association, *Comprehensive Emergency Management*, 11; and David M. Neal, “Reconsidering the Phases of Disasters,” *International Journal of Mass Emergencies and Disasters* 15, no. 2 (August 1997): 245, <https://doi.org/10.1177/028072709701500202>.

¹²⁷ Neal, “Reconsidering the Phases of Disasters,” 239–40, 259–60; Malcolm E. Baird, *The “Phases” of Emergency Management* (Intermodal Freight Transportation Institute (IFTI), University of Memphis, 2010), 2, https://www.memphis.edu/ifti/pdfs/cait_phases_of_emergency_mngt.pdf; and Hogue and Bea, *Federal Emergency Management and Homeland Security Organization*, 18.

¹²⁸ Neal, “Reconsidering the Phases of Disasters,” 239–40, 259–60; Baird, *The “Phases” of Emergency Management*, 2; and Hogue and Bea, *Federal Emergency Management and Homeland Security Organization*, 18.

¹²⁹ Neal, “Reconsidering the Phases of Disasters,” 240, 246–52, 259–60; National Governors’ Association, *State Comprehensive Emergency Management*, 108; and Lee Boshier, Ksenia Chmutina, and Dewald van Niekerk, “Stop Going Around in Circles: Towards a Reconceptualisation of Disaster Risk Management Phases,” *Disaster Prevention and Management* 30, no. 4/5 (2021): 525–26, <https://doi.org/10.1108/DPM-03-2021-0071>.

¹³⁰ Baird, *The “Phases” of Emergency Management*, 7–20.

describing the common risk mitigation and consequence management activities.¹³¹ For example, mitigation within the original NGA context incorporates any activity to reduce impacts from a threat or hazard.¹³² It encompasses what the National Preparedness Goal may consider “prevention” or “protection” mission areas.¹³³ On the other hand, the DHS mitigation “mission area” avoids security-related risk reduction activities and focuses almost entirely on natural hazard mitigation.¹³⁴ RAND Corporation recognized the conflicting definitions and constructs used to organize emergency management activities when they recommended simplifying the categories into the two used throughout this thesis, risk mitigation and consequence management.¹³⁵ For consistency, this thesis used the original definitions and associated activities for mitigation, preparedness, response, and recovery from the 1978 NGA study.¹³⁶ These phases and related functions are shown in Figure 8.

¹³¹ Department of Homeland Security, *National Preparedness Goal*, 3–4.

¹³² National Governors’ Association, *State Comprehensive Emergency Management*, 106–7; and Department of Homeland Security, *National Preparedness Goal*, 5–12.

¹³³ National Governors’ Association, *State Comprehensive Emergency Management*, 106–7; and Department of Homeland Security, *National Preparedness Goal*, 5–12.

¹³⁴ Department of Homeland Security, *National Preparedness Goal*, 10–11.

¹³⁵ Barnosky et al., *Streamlining Emergency Management*, 25–26.

¹³⁶ National Governors’ Association, *State Comprehensive Emergency Management*, 103, 106–7, 112–13; and National Governors’ Association Center for Policy, *Comprehensive Emergency Management: A Review Leader’s Guide* (Washington, DC: National Governors’ Association, 1981), 37. It should be noted that even the original NGA study that introduced the phases as part of the comprehensive emergency management construct characterizes the phases differently throughout the report. For example, in one section, the preparedness phase is described with efficiency-oriented “mechanistic” types of activities and in other sections it is seen as requiring innovation-oriented “organic” skills and capabilities that compare closely to emergency response. This thesis categorized the preparedness phase as requiring mechanistic-oriented structural dimensions, similar to what would be found in mitigation or recovery. This is due to the contingency factors typically observed within preparedness including the stability of the environment and use of organizational technologies with minimal task variety.

1	MITIGATION (LONG-TERM) DEFINITION: Any activities which actually eliminate or reduce the probability of occurrence of a disaster. It also includes long-term activities which reduce the effects of unavoidable disasters.	PREPAREDNESS (TO RESPOND) DEFINITION: Preparedness activities are necessary to the extent that mitigation measures have not, or cannot, prevent disasters. In the preparedness phase, governments, organizations, and individuals develop plans to save lives and minimize disaster damage. Preparedness measures also seek to enhance disaster response operations.	RESPONSE (TO EMERGENCY) DEFINITION: Response activities follow an emergency or disaster. Generally they are designed to provide emergency assistance for casualties. They also seek to reduce the probability of secondary damage and to speed recovery operations.	RECOVERY (SHORT AND LONG TERM) DEFINITION: Recovery continues until all systems return to normal or better. Short-term recovery returns vital life-support systems to minimum operating standards. Long-term recovery may continue for a number of years after a disaster. Their purpose is to return life to normal, or improved levels.
2	GENERAL MEASURES: Building codes Vulnerability analyses updates Tax incentives/disincentives Zoning and land use management Building use regulations/safety codes Compliance and enforcement Resource allocations/interstate sharing Preventive health care Public education	Preparedness plans Emergency exercises/training Warning systems Emergency communications systems Evacuation plans and training Resource inventories Emergency personnel/contact lists Mutual aid agreements Public information/education	Activate public warning Notify public authorities Mobilize emergency personnel/equipment Emergency medical assistance Man emergency operations centers Declare disaster/evacuate Mobilize security forces Search and rescue Emergency suspension of laws	Damage insurance/loans and grants Temporary housing Long-term medical care Disaster unemployment insurance Public information Health and safety education Reconstruction Counseling programs Economic impact studies
3	HAZARD SPECIFIC MEASURES FLOOD: Dam construction/inspection Stream channelization Construct/protect retention basins Reforest/prevent deforestation Contour farming Flood proof buildings	Temporary levee construction Stream flow monitoring Ice and debris removal Sandbagging Temporary flood proofing	Helicopter search Boat rescue	Decontamination of water sources Replant crops Pump out flooded basements Remove temporary floodproofing Monitor disease
	EPIDEMIC: School inoculations Rodent/insect eradication Water purification Sanitary waste disposal Health codes/laws/inspections Public health education	Stockpiling drugs Physician preparedness plans Public notification Quarantine regulations and plans Emergency medical authorities	Quarantine Disinfect property Secure bodies Isolate carriers	Continuing research into causes Long-term restorative therapy
	FIRE: Fire codes No-smoking laws Fire zoning Fire safety information	Fire drills/exit signs Call boxes/smoke detectors Police crowd control training Fire department aid agreements Firefighter training Automatic sprinkler installation	Firefighting Containment	Rebuilding Razing burned-out buildings Reforestation
	HAZARDOUS MATERIALS SPILL: Transport speed limits Container structure codes Corporate licensing Restricted routing Materials identification codes	Containment and scrubbing equipment Stockpile neutralizing materials Emergency training for transporters Special apparatus for emergencies	Identify material Notify National Response Center/ CHEMTREC Containment Plume tracking Air/water/soil contamination controls	Reassess existing regulations Decontaminate environment
	LANDSLIDE: Forest management Preserve ground cover Maintain natural runoff Stabilize slopes Real estate disclosure laws	Reinforce threatened structures Landslide monitors	Assess stability of new formation Reinforce against secondary slippage	Reassess denuded areas New land-use planning
	WIND: Roof anchors Window size and thickness codes Mobile home tie-downs Windbreaks	Storm shelter construction Property protection measures Storm watch and warning guides	Reinforce damaged property Broadcast all-clear	Reconstruction
	HURRICANE STORM SURGE: Barrier islands Coastal wetlands protection Replace coastal sand dunes Construct breakwaters/levees Coastal zone management Public information programs	Vertical evacuation plans Storm tracking Shutter windows Seek shelter Evacuate planes and boats	Same as for flood/wind (above)	Rebuild destroyed sand dunes
	GASOLINE SHORTAGE: Alternatives research Allocations/international sharing Mass transit systems/car pooling Design energy efficient engines Reduce speed limits Energy conservation program	Stockpile reserves Reallocate to shortage areas Rationing plans	Odd-even purchase program Minimum purchase requirements Increase refinery production Deregulate oil Increase gasoline prices	Excess profits tax on companies Reassess allocation plan Two-way truck hauling
	NUCLEAR PLANT ACCIDENT: Site zoning Waste management/containment research Plant safety codes/inspections Plant operator training Environmental impact research/statements	Contamination monitoring Identify vulnerable populations Shelter preparation Designate Governor's technician Emergency procedures rehearsal	Contain radioactivity	Reassess siting requirements Monitor deterioration of contaminant
	ATTACK: Continuity of government plans Crisis relocation plans Coordination of defense/all-risk plans Maintenance of National Guard/Reserves Host area/hardened shelter development	Defense mobilization plans Reserves training Protection of vital records Disperse government line of succession Designate vital workers	Deploy critical resources Activate rationing Crisis relocation Activate vital workers plan	Reinstate government operations Develop/organize communities

Often recovery includes mitigation measures against repeat of the disaster. Thus recovery and mitigation are related—showing circular nature of mitigation, preparedness, response and recovery.

EACH COLUMN SHOWS:
1. A definition of the phase;
2. Examples of general measures which apply to all hazards; and,
3. Examples of specific measures which apply to particular hazards.

- 37 -

This chart was developed for use by comprehensive emergency management review leaders. Many of the measures could be debated. We encourage clarification, editing and suggestions for making it more useful.
Contact: Hilary Whittaker, Director, Emergency Management Project
NATIONAL GOVERNORS' ASSOCIATION (202) 624-5365

Figure 8. Comprehensive Emergency Management Activities¹³⁷

¹³⁷ Source: National Governors' Association Center for Policy, *Comprehensive Emergency Management*, 37.

6. Day-to-Day Organizational Structures

The analytical framework used in this thesis is intended to assess the day-to-day structures of government risk mitigation and consequence management organizations rather than the temporary structures created to reorganize staff for response phase activities. Staff within a risk mitigation and consequence management organization's mitigation and preparedness-oriented divisions will likely be utilized in a response role at some point in their career. Emergencies and disasters are typically an "all hands on deck" situation where staff are temporarily repurposed to deal with the exigent crisis.¹³⁸ These staff may be reorganized using an ad hoc organizational structure using constructs like the Incident Command System (ICS) or Emergency Support Functions (ESFs).¹³⁹ The number of staff dedicated to working exclusively on response phase activities is typically minimal if the agency has any. Despite each FEMA region having a fully staffed "Response Division," most of the staff within it primarily conduct preparedness phase functions throughout the year, including planning, training, and exercises.¹⁴⁰ Only upon the initiation of an incident that these response staff serve as a nucleus, to be supplemented by other agency employees.¹⁴¹ Due to the large

¹³⁸ National Governors' Association, *State Comprehensive Emergency Management*, 214; Chris Currie, *FEMA Disaster Workforce: Actions Needed to Improve Hiring Data and Address Staffing Gaps*, GAO-23-105663 (Washington, DC: Government Accountability Office, 2023), 8, <https://www.gao.gov/assets/gao-23-105663.pdf>; and Amanda Lee Hollis, "A Tale of Two Federal Emergency Management Agencies," *The Forum* 3, no. 3 (2005): 5, <https://doi.org/10.2202/1540-8884.1095>.

¹³⁹ Federal Emergency Management Agency, *National Incident Management System*, 3rd ed. (Washington, DC: Federal Emergency Management Agency, 2017), 24, https://www.fema.gov/sites/default/files/2020-07/fema_nims_doctrine-2017.pdf; and "National Response Framework," Federal Emergency Management Agency, October 15, 2021, <https://www.fema.gov/emergency-managers/national-preparedness/frameworks/response#esf>.

¹⁴⁰ Office of Inspector General, *Inspection of FEMA's Regional Offices – Region IX*, OIG-12-43 (Washington, DC: Department of Homeland Security, 2012), 13–15, https://www.oig.dhs.gov/sites/default/files/assets/Mgmt/2012/OIG_12-43_Feb12.pdf.

¹⁴¹ National Governors' Association, *State Comprehensive Emergency Management*, 214.

amount of existing literature on ad hoc response structures, including them in the scope was unnecessary.¹⁴²

7. Existing Authorities

This study did not reference existing jurisdictional authorities as an influence on contingency factors or structural dimensions, nor did it use them to provide recommendations related to the placement or organization of government risk mitigation and consequence management functions. Suppose the existing laws, ordinances, and regulations that offer authority for various departments and agencies to implement risk mitigation and consequence management functions are incorporated into the organization's design criteria.¹⁴³ In that case, functions will remain in their current hierarchy by default.¹⁴⁴ Many of the issues referenced in the problem statement relating to poor horizontal coordination can be attributed to the unclear and ambiguous responsibilities within government jurisdictions despite the existing authorities codified into law or regulation.¹⁴⁵ With this in mind, the goal of this study was to recommend techniques that prioritize the evidence-based practices of organization theory and design that can later inform changes to jurisdictional and legal authorities.

¹⁴² Branda Nowell and Toddi Steelman, "Beyond ICS: How Should We Govern Complex Disasters in the United States?," *Journal of Homeland Security and Emergency Management* 16, no. 2 (2019): 3, <https://doi.org/10.1515/jhsem-2018-0067>; Ray Hsienho Chang and Joseph Trainor, "Balancing Mechanistic and Organic Design Elements: The Design and Implementation of the Incident Command System (ICS)," *International Journal of Mass Emergencies and Disasters* 38, no. 3 (November 2020): 242, <https://doi.org/10.1177/028072702003800301>; Sarah Elizabeth Scales, Roxanna Fouladi, and Jennifer A. Horney, "Description of the Use of the Incident Command System among Public Health Agencies Responding to COVID-19," *Journal of Disaster Research* 16, no. 5 (2021): 874–75, <https://doi.org/10.20965/jdr.2021.p0874>; Jensen and Thompson, "Incident Command System," 159; and Russell R. Dynes and B.E. Aguirre, "Organizational Adaptation To Crises: Mechanisms Of Coordination And Structural Change," *Disasters* 3, no. 1 (1979): 71–72, <https://doi.org/10.1111/j.1467-7717.1979.tb00200.x>.

¹⁴³ Stevenson and Hayman, *Local Government Disaster Protection*, 49–50.

¹⁴⁴ Stevenson and Hayman, 49–50.

¹⁴⁵ Ronald John Hy and William L. Waugh, "The Function of Emergency Management," in *Handbook of Emergency Management: Programs and Policies Dealing with Major Hazards and Disasters*, ed. William L. Waugh and Ronald John Hy (New York: Greenwood Press, 1990), 11–12, http://archive.org/details/handbookofemerge0000unse_c4m7; William L. Waugh, "Emergency Management and State and Local Government Capacity," in *Cities and Disaster: North American Studies in Emergency Management*, ed. Richard T. Sylves and William L. Waugh (Springfield, IL: Thomas, 1990), 233; Drabek, *Professional Emergency Manager*, 132–33; Wenger, Dynes, and Quarantelli, *Disaster Analysis*, 17–18; and Stevenson and Hayman, *Local Government Disaster Protection*, 47.

III. LITERATURE REVIEW

A. INTRODUCTION

Literature has been organized into two primary areas. First, the review examined evidence that can inform the future design of government risk mitigation and consequence management functions by assessing the body of knowledge in organization design and its competing theories and frameworks. Second, a literature review on organizational effectiveness provides a source of research to help develop criteria to assess government risk mitigation and consequence management function placement. The literature review provided a comprehensive overview of the research linking risk mitigation and consequence management and organization theory and design bodies of work.

B. ORGANIZATION THEORY AND DESIGN

1. Origins of Organization Theory

Although efforts to deliberately organize risk mitigation and consequence management functions in government started in the middle of the twentieth century, a wealth of knowledge had already been established on the management and design of organizations. Organization theory and design have strong connections to the broader study of sociology, business, operations research, and management science.¹⁴⁶ Classical management concepts that framed initial management theory in the late nineteenth and early twentieth century resulted from the Industrial Revolution and the growing number of factories and associated organizations.¹⁴⁷ It is unclear if the leaders responsible for consolidating and distributing risk mitigation and consequence management functions in their jurisdictions had considered the best available organization design practices when implementing the first civil defense, emergency management, homeland security, and resilience organizations. However, this thesis presents the most prominent theories,

¹⁴⁶ Starbuck, "The Origins of Organization Theory," 144.

¹⁴⁷ Daft, *Organization Theory & Design*, 25.

techniques, and frameworks that may be leveraged toward the next evolution in organizing these activities in government.

The early emphasis in management science focused on new approaches to reorganizing work to increase productivity.¹⁴⁸ The management concepts that emerged led to organizational structures that were highly bureaucratic and hierarchical, something that persists within government organizations to this day.¹⁴⁹ A predominant idea in this space is scientific management, developed by Taylor in 1911.¹⁵⁰ Scientific management focused operational decisions for organizations based on calculated assessments and disciplined practices to remove the subjectivity around work.¹⁵¹ Most importantly, scientific management promoted the concept of specializing in different types of work, focusing on deliberate planning, and selecting and training employees who were most suited for the work they would be performing.¹⁵²

Administrative principles were also highly influential in setting a foundation for organization theory and design.¹⁵³ The 14 administrative principles of management published by Henri Fayol in 1916 suggested numerous concepts related to organizing

¹⁴⁸ Daft, 25–26.

¹⁴⁹ Daft, 26; Jacob Torfing and Peter Triantafillou, “Enhancing Public Innovation by Transforming Public Governance?,” in *Enhancing Public Innovation by Transforming Public Governance*, ed. Jacob Torfing and Peter Triantafillou (New York: Cambridge University Press, 2016), 5, <https://doi.org/10.1017/CBO9781316105337>; B. Guy Peters, “Can Public Governance Be Changed to Enhance Innovation?,” in *Enhancing Public Innovation by Transforming Public Governance*, ed. Jacob Torfing and Peter Triantafillou (New York: Cambridge University Press, 2016), 313, <https://doi.org/10.1017/CBO9781316105337>; and Jesus Holguin, “Local-Level Homeland Security and Emergency Management: A Comparative Case Study of Local Governments in Southern California” (PhD diss., University of La Verne, 2011), 66–72, ProQuest.

¹⁵⁰ Frederick Winslow Taylor, *The Principles of Scientific Management* (New York: Harper & Brothers, 1919), <https://archive.org/details/cu31924085713331>.

¹⁵¹ Robert Kanigel, *The One Best Way: Frederick Winslow Taylor and the Enigma of Efficiency* (New York: Penguin Books, 1997); Alan Farnham, “The Man Who Changed Work Forever,” *Fortune* 136, no. 2 (July 1997): 114, EBSCOhost; and Taylor, *The Principles of Scientific Management*.

¹⁵² Taylor, *The Principles of Scientific Management*, 31, 38, 123–24. An example of specialization in an emergency management agency would be hiring a grants specialist and a logistics specialist to perform different types of work within the organization.

¹⁵³ Daft, *Organization Theory & Design*, 26.

work.¹⁵⁴ These principles included “unity of command,” which required each subordinate employee only to receive direction from one supervisor.¹⁵⁵ “Unity of direction” promoted grouping similar organizational activities under one manager.¹⁵⁶ The 14 principles serve as a toolkit of management techniques that remain widely used across government, business, and non-profit organizations.

Sociologist Max Weber’s work on bureaucracy also serves as an essential foundation for modern organization theory and design.¹⁵⁷ Weber’s studies that became popularized in the 1940s focus on hierarchy, the division of labor, rules, well-trained managers, and written documentation.¹⁵⁸ Decades later, other scholars deeply explored Weber’s ideas to understand how the various structural elements relate to and impact effectiveness and performance.¹⁵⁹ Both administrative principles and scientific

¹⁵⁴ Henri Fayol, *General and Industrial Management*, trans. Constance Storrs (London: Sir Isaac Pitman and Sons, 1949), 19–42, <https://archive.org/details/in.ernet.dli.2015.13518>; and Federal Emergency Management Agency, *National Incident Management System*, 3, 20–23. Many of these principles are familiar to those working in homeland security and emergency management due to the widespread adoption of the National Incident Management System (NIMS) and the Incident Command System (ICS). Both systems reference these concepts frequently for ad hoc organizational structures during emergencies. However, Fayol’s concepts also apply more broadly to the organization and management of day-to-day employee structures within risk mitigation and consequence management organizations.

¹⁵⁵ Fayol, *General and Industrial Management*, 24.

¹⁵⁶ Fayol, 25.

¹⁵⁷ Max Weber, *The Theory of Social and Economic Organization*, trans. A. M. Henderson and Talcott Parsons (Glencoe, IL: The Free Press, 1947), <https://archive.org/details/theoryofsocial0000webe/>; and Walton, “The Persistence of Bureaucracy,” 569–72.

¹⁵⁸ Weber, *The Theory of Social and Economic Organization*, 87–157, 218–46, 329–40; Brent D. Swearingen, “‘The Buck Stops Where?’ Aligning Authority to Strategy in Homeland Security” (master’s thesis, Naval Postgraduate School, 2015), 27, <http://hdl.handle.net/10945/47881>; and Roger Mansfield, “Bureaucracy and Centralization: An Examination of Organizational Structure,” *Administrative Science Quarterly* 18, no. 4 (December 1973): 477, <https://doi.org/10.2307/2392200>.

¹⁵⁹ Lee G. Bolman and Terrence E. Deal, *Reframing Organizations: Artistry, Choice, and Leadership*, 6th ed. (Hoboken, NJ: Jossey-Bass, 2017), 49, <https://www.doi.org/10.1002/9781119281856>; Peter M. Blau and W. Richard Scott, *Formal Organizations: A Comparative Approach* (San Francisco: Chandler Publishing Company, 1962), 27–36, <https://archive.org/details/formalorganizati00blau>; Charles Perrow, *Complex Organizations: A Critical Essay*, 3rd ed. (New York: Random House, 1986), 119–56, <https://archive.org/details/complexorganizat00perr>; James D. Thompson, *Organizations in Action: Social Science Bases of Administrative Theory* (New York: McGraw-Hill, 1967), 5–6, <https://archive.org/details/organizationsina0000thom>; Paul R. Lawrence and Jay W. Lorsch, *Organization and Environment: Managing Differentiation and Integration* (Boston, MA: Harvard Business School Press, 1986), 162, <https://archive.org/details/organizationenvi0000lawr>; and Richard H. Hall, “The Concept of Bureaucracy: An Empirical Assessment,” *American Journal of Sociology* 69, no. 1 (July 1963): 32–40, <https://doi.org/10.1086/223508>.

management aligned closely with establishing bureaucratic organizations, each leveraging standardized rules across the firm and clearly defining responsibilities and authority.¹⁶⁰ The term bureaucracy is commonly associated with the government.¹⁶¹ Although it is seen as an essential contributor to efficiency within an organization, it has a generally negative view by the public and was even criticized by Weber himself.¹⁶² Although Weber's practices are still relevant and widely adopted today, other scholars recognized opportunities to shift away from the rigid bureaucratic model by the 1960s.¹⁶³

¹⁶⁰ Weber, *The Theory of Social and Economic Organization*, 87–157, 218–46, 329–40; Fayol, *General and Industrial Management*, 19–42; and Taylor, *The Principles of Scientific Management*, 7, 25, 37, 83, 85, 123–24.

¹⁶¹ Holguin, “Local-Level Homeland Security and Emergency Management,” 70; Robert B. Denhardt, *Theories of Public Organization*, 6th ed. (Boston, MA: Wadsworth/Cengage Learning, 2011), 2, 12, 29, <https://archive.org/details/theoriesofpublic0000denh/>; Harry M. Johnson, “Bureaucracy and Modernization,” in *Bureaucracy and Administration*, ed. Ali Farazmand (Boca Raton, FL: CRC Press, 2009), 203, <https://www.doi.org/10.1201/NOE0824723699>; Al Gore, “Creating a Government That Works Better & Costs Less: Report of the National Performance Review,” in *Classics of Organization Theory*, ed. Jay M. Shafritz and J. Steven Ott, 5th ed. (Orlando, FL: Harcourt College Publishers, 2001), 460–63, https://archive.org/details/classicsoforgani00jaym_0; Jason M. Sirney, “Does Theory Matter? Applying Organizational Theory to Develop Effective Local Government Emergency Management Programs” (master’s thesis, Naval Postgraduate School, 2019), 13, <http://hdl.handle.net/10945/62295>; Gareth Morgan, *Images of Organization* (Thousand Oaks, CA: Sage Publications, 2006), 17; Hendrik Ewens and Joris van der Voet, “Organizational Complexity and Participatory Innovation: Participatory Budgeting in Local Government,” *Public Management Review* 21, no. 12 (December 2019): 1848, <https://doi.org/10.1080/14719037.2019.1577908>; Mads Leth Felsager Jakobsen and Claus Thrane, “Public Innovation and Organizational Structure: Searching (in Vain) for the Optimal Design,” in *Enhancing Public Innovation by Transforming Public Governance*, ed. Jacob Torfing and Peter Triantafyllou (New York: Cambridge University Press, 2016), 217, <https://doi.org/10.1017/CBO9781316105337>; and Charles T. Goodsell, *The Case for Bureaucracy: A Public Administration Polemic*, 4th ed. (Washington, DC: CQ Press, 2004), 48–49.

¹⁶² Holguin, “Local-Level Homeland Security and Emergency Management,” 70; Denhardt, *Theories of Public Organization*, 2, 12, 29; Johnson, “Bureaucracy and Modernization,” 203; Gore, “Creating a Government That Works Better & Costs Less,” 460–63; Sirney, “Does Theory Matter?,” 13; Morgan, *Images of Organization*, 17; Ewens and van der Voet, “Organizational Complexity and Participatory Innovation,” 1848; Jakobsen and Thrane, “Public Innovation and Organizational Structure,” 217; and Goodsell, *The Case for Bureaucracy*, 48–49.

¹⁶³ Swearingen, “The Buck Stops Where?,” 27; Zenon S. Zannetos, “On the Theory of Divisional Structures: Some Aspects of Centralization and Decentralization of Control and Decision Making,” *Management Science* 12, no. 4 (December 1965): 49–52, 67, <http://www.jstor.org/stable/2627802>; Sirney, “Does Theory Matter?,” and Alfred G. Nhema, “Relevance of Classical Management Theories to Modern Public Administration: A Review,” *Journal of Public Administration and Governance* 5, no. 3 (2015): 169, <https://doi.org/10.5296/jpag.v5i3.8337>.

2. Looking Beyond Structure

In the second half of the twentieth century, additional schools of thought were developed around the key factors contributing to organization design. Jay Galbraith's Star Model promoted that structure was just one critical aspect of a successful organization.¹⁶⁴ The Star Model considered strategy, people, structure, rewards, and processes.¹⁶⁵ Similarly, Leavitt's 1965 Diamond Model considers structure, technology, task, and people when looking at organizational change.¹⁶⁶ Like the Star and Diamond Models, many other frameworks look at organizational elements' interdependent nature, including the Weisbord Six Box Model, Burke-Litwin Model, Nadler and Tushman's Congruence Model, and Waterman and Peters' McKinsey 7S Model.¹⁶⁷ Bolman and Deal established a model with four frames (structural, human resource, political, and symbolic) in 1984 to balance the many schools of thought that must be considered in managing an organization.¹⁶⁸ The consistency between these frameworks is that organizational structure is only one critical element of organization design and that all must be aligned to ensure a successful organization.¹⁶⁹

¹⁶⁴ Galbraith, *The Star Model*; Galbraith, *Organization Design*, 31; Galbraith, *Designing Organizations*, 15–20; and Galbraith, "The Evolution of Enterprise Organization Designs," 3.

¹⁶⁵ Galbraith, *The Star Model*; Galbraith, *Organization Design*, 31; Galbraith, *Designing Organizations*, 15–20; and Galbraith, "The Evolution of Enterprise Organization Designs," 3.

¹⁶⁶ Harold J. Leavitt, "Applied Organizational Change in Industry: Structural, Technological and Humanistic Approaches," in *Handbook of Organizations*, ed. James G. March (Chicago: Rand McNally and Company, 1965), 1144–45.

¹⁶⁷ Marvin R. Weisbord, "Organizational Diagnosis: Six Places to Look for Trouble with or Without a Theory," *Group & Organization Studies* 1, no. 4 (December 1976): 430–47, <https://doi.org/10.1177/105960117600100405>; W. Warner Burke and George H. Litwin, "A Causal Model of Organizational Performance and Change," *Journal of Management* 18, no. 3 (September 1992): 523–45, <https://doi.org/10.1177/014920639201800306>; David A. Nadler and Michael L. Tushman, "A Model for Diagnosing Organizational Behavior," *Organizational Dynamics* 9, no. 2 (Fall 1980): 35–51, [https://doi.org/10.1016/0090-2616\(80\)90039-X](https://doi.org/10.1016/0090-2616(80)90039-X); and Thomas J. Peters and Robert H. Waterman, *In Search of Excellence: Lessons from America's Best-Run Companies* (New York: HarperCollins, 2004), 3–26.

¹⁶⁸ Lee G. Bolman and Terrence E. Deal, *Modern Approaches to Understanding and Managing Organizations* (San Francisco: Jossey-Bass, 1984).

¹⁶⁹ Kates and Galbraith, *Designing Your Organization*, 3–4, 9.

3. Contingency Theory

These models that enable flexibility have strong foundations in structural contingency theory, introduced by Woodward in 1958.¹⁷⁰ Her research identified the relationship between technology (i.e., the type of manufacturing or service process) and various structural features identified in the previous classical and bureaucratic organizational concepts.¹⁷¹ In 1961, Burns and Stalker found critical relationships between environment and structure, positing that the firms with designs that had a better “fit” to their environment would result in superior performance.¹⁷² Organizations were more likely to have a flatter, more “organic” structure when the environment was more unstable.¹⁷³ On the other hand, stable environments were more likely to lead to “mechanistic” hierarchical structures.¹⁷⁴ Other scholars like Thompson, Lawrence, and Lorsch extended the theory, considering uncertainty in decision-making and differentiation and integration in organizational subunits.¹⁷⁵ The organizational strategy was added to the “fit-to-performance” equation in 1962 by Chandler, who argued that divisional organizational structures were more likely to be found in organizations with diverse products and services.¹⁷⁶ The many scholars contributing to structural contingency theory

¹⁷⁰ Shenkar and Ellis, “The Rise and Fall of Structural Contingency Theory,” 785; and Joan Woodward, *Management and Technology*, Problems of Progress in Industry (London: H. M. Stationery Office, 1958).

¹⁷¹ Shenkar and Ellis, “The Rise and Fall of Structural Contingency Theory,” 785; and Woodward, *Management and Technology*.

¹⁷² Shenkar and Ellis, “The Rise and Fall of Structural Contingency Theory,” 785; and Burns and Stalker, *The Management of Innovation*, 5–7.

¹⁷³ Shenkar and Ellis, “The Rise and Fall of Structural Contingency Theory,” 785; and Burns and Stalker, *The Management of Innovation*, 5–7.

¹⁷⁴ Shenkar and Ellis, “The Rise and Fall of Structural Contingency Theory,” 785–86; and Burns and Stalker, *The Management of Innovation*, 5–7.

¹⁷⁵ Shenkar and Ellis, “The Rise and Fall of Structural Contingency Theory,” 786; Thompson, *Organizations in Action*, 25–65; and Lawrence and Lorsch, *Organization and Environment*, 23–53, 84–158.

¹⁷⁶ Shenkar and Ellis, “The Rise and Fall of Structural Contingency Theory,” 786; Chandler, *Strategy and Structure*, 52–113; and Lex Donaldson, *American Anti-Management Theories of Organization: A Critique of Paradigm Proliferation* (Cambridge, UK: Cambridge University Press, 1995), 32–34, <https://archive.org/details/americanantimana0000dona>.

agree that there's no "one best way" to organize and that the structure must fit the organization's environment, size, and strategy.¹⁷⁷

This thesis leveraged literature aligned with the five contingencies outlined in Daft's *Organization Theory & Design* text.¹⁷⁸ The contingency factors of culture, environment, goals and strategy, size, and technology carry a wealth of research that applies to government jurisdictions, specifically government risk mitigation and consequence management organizations.¹⁷⁹ In addition, the thesis focused on literature supporting the five structural dimensions that Daft believes are influenced by contingency factors, including formalization, specialization, hierarchy of authority, complexity, and centralization.¹⁸⁰ Daft's contingency factors and structural dimensions align with other scholars that have studied the relationship between structural design and environmental characteristics.¹⁸¹ Assessing smart practices from organization design literature at these fundamental levels should enable the reader to mix and match the techniques that will most apply to their jurisdiction rather than proposing specific configurations that may not be feasible.

But, like the earlier arguments against the rigid approaches designed by Taylor, Fayol, and Weber, some scholars have countering views towards structural contingency theory.¹⁸² The primary concern is that the many contingency variables are unstable,

¹⁷⁷ Donaldson, *The Contingency Theory of Organizations*, 1–3; Madia, "Homeland Security Organizations," 18; Alberts and Nissen, "Toward Harmonizing Command and Control with Organization and Management Theory," 3, 15, 25–26; Alexandra L. Rosen, "Reorganizing for Homeland Security: Does Centralization Improve Information-Sharing?" (master's thesis, Johns Hopkins University, 2019), 26, <http://jhirlibrary.jhu.edu/handle/1774.2/62074>; Bastian Hanisch and Andreas Wald, "A Bibliometric View on the Use of Contingency Theory in Project Management Research," *Project Management Journal* 43, no. 3 (June 2012): 4, <https://doi.org/10.1002/pmj.21267>; and Luo, Donaldson, and Yu, "Fit of Structure to Multiple Contingencies," 43.

¹⁷⁸ Daft, *Organization Theory & Design*, 20–22.

¹⁷⁹ Daft, 20–22.

¹⁸⁰ Daft, 18–20; and Koufteros et al., "The Impact of Organizational Structure on Internal and External Integration," 1.

¹⁸¹ Donaldson, *The Contingency Theory of Organizations*, 16–18.

¹⁸² Rosen, "Reorganizing for Homeland Security," 26; Donaldson, *The Contingency Theory of Organizations*, 157–58, 161–79; and Donaldson, "The Contingency Theory of Organizational Design," 19–20.

making it challenging for an organization to balance its structure and the associated contingencies.¹⁸³ Others believe the theory's approach only to consider one contingency at a time was problematic in today's complex environment.¹⁸⁴ Likely the most challenging criticism is that there's some belief that structural contingency theory lacks any empirical support.¹⁸⁵ Regardless, the theory's fundamental concepts are still alive and well, with many management textbooks organized around the concepts of contingencies and their applicable structural design elements.¹⁸⁶

Some scholars have continued to adapt the theory.¹⁸⁷ One such adaption, Donaldson's Structural Adaptation to Regain Fit (SARFIT) model, is most applicable to this thesis, as it allows misfits between contingency factors and structural dimensions to be resolved one at a time, sequentially.¹⁸⁸ Most importantly, the SARFIT model accounts for one of the primary concerns of structural contingency theory, the uncertainty on the role of interdependencies between contingency factors when working to achieve organizational fit.¹⁸⁹ SARFIT is likely the most intuitive for jurisdictional chief executives and risk mitigation and consequence management agency managers looking to change their organizational structure.

¹⁸³ Rosen, "Reorganizing for Homeland Security," 26; Donaldson, *The Contingency Theory of Organizations*, 102–22; Donaldson, "The Contingency Theory of Organizational Design," 20–23; Shenkar and Ellis, "The Rise and Fall of Structural Contingency Theory," 790; and Ellis, Almor, and Shenkar, "Structural Contingency Revisited," 72–74.

¹⁸⁴ Shenkar and Ellis, "The Rise and Fall of Structural Contingency Theory," 790–91.

¹⁸⁵ Shenkar and Ellis, 792–94; and Ellis, Almor, and Shenkar, "Structural Contingency Revisited," 51.

¹⁸⁶ Daft, *Organization Theory & Design*, 28–29; Donaldson, *The Contingency Theory of Organizations*; and Ellis, Almor, and Shenkar, "Structural Contingency Revisited," 51.

¹⁸⁷ Lex Donaldson, "Conclusion," in *Advancing Organizational Theory in a Complex World*, ed. Jane XJ Qiu et al. (New York: Routledge, 2017), 142, <https://doi.org/10.4324/9781315677293>; and Ellis, Almor, and Shenkar, "Structural Contingency Revisited," 63–67.

¹⁸⁸ Lex Donaldson, "Strategy and Structural Adjustment to Regain Fit and Performance: In Defence of Contingency Theory," *Journal of Management Studies* 24, no. 1 (January 1987): 1–24, <https://doi.org/10.1111/j.1467-6486.1987.tb00444.x>; Lex Donaldson, *Performance-Driven Organizational Change: The Organizational Portfolio* (Thousand Oaks, CA: SAGE Publications, 1999), 84–102, <https://doi.org/10.4135/9781452231464>; and Klaas and Lauridsen, "Structural Adaptation to Regain Fit," 16.

¹⁸⁹ Ellis, Almor, and Shenkar, "Structural Contingency Revisited," 51; and Shenkar and Ellis, "The Rise and Fall of Structural Contingency Theory," 790–91.

4. Configuration Approach

The configuration approach is one framework noted as an evolution of structural contingency theory.¹⁹⁰ Both contingency theory and the configuration approach share a functionalist point of view and emphasize structural fit.¹⁹¹ Donaldson notes this commonality between the two theories is rooted in consistency theory, “which holds that organizational characteristics need to fit each other for high performance to result.”¹⁹² But, the configuration approach diverges significantly from contingency theory as it posits that only a few set organizational configurations (also known as *gestalts*) enable peak performance within an organization.¹⁹³ The followers of the configuration approach believe that organizational characteristics need to align with each other for the organization to be effective.¹⁹⁴ In addition, the multivariate contingency theory allows many possible fits, whereas the configuration approach focuses on a few possible configurations.¹⁹⁵ In 1979, Mintzberg proposed five configurations, including simple structure (entrepreneurial), machine bureaucracy (machine), professional bureaucracy (professional), divisionalized form (diversified), and adhocracy (innovative).¹⁹⁶ Later, he

¹⁹⁰ Jason M. Biermann, “Emergence of Organizational Fit: Applying Configuration Theory to the Snohomish County (WA) Emergency Operations Center” (master’s thesis, Naval Postgraduate School, 2016), 17, <https://hdl.handle.net/10945/48574>; Donaldson, “The Contingency Theory of Organizational Design,” 22; and Danny Miller, “Configurations of Strategy and Structure: Towards a Synthesis,” *Strategic Management Journal* 7, no. 3 (1986): 234, <https://doi.org/10.1002/smj.4250070305>.

¹⁹¹ Christiane Demers, *Organizational Change Theories: A Synthesis* (Thousand Oaks, CA: SAGE Publications, 2007), 47, https://us.sagepub.com/sites/default/files/upm-assets/15520_book_item_15520.pdf.

¹⁹² Donaldson, *The Contingency Theory of Organizations*, 142; John Child, *Organization: A Guide to Problems and Practice*, 2nd ed. (London: Paul Chapman Publishing, 1984), 233–37, https://archive.org/details/organizationguid0000chil_h5w3; and Pradip N. Khandwalla, “Viable and Effective Organizational Designs of Firms,” *Academy of Management Journal* 16, no. 3 (September 1973): 481–83, <https://doi.org/10.2307/255008>.

¹⁹³ Donaldson, *The Contingency Theory of Organizations*, 142; Alan Meyer, Anne Tsui, and C. R. Hinings, “Configurational Approaches to Organizational Analysis,” *Academy of Management Journal* 36, no. 6 (December 1993): 1175, <https://doi.org/10.5465/256809>; Demers, *Organizational Change Theories*, 47; and Henry Mintzberg, *The Structuring of Organizations* (Englewood Cliffs, NJ: Prentice-Hall, 1979), 300.

¹⁹⁴ Donaldson, *The Contingency Theory of Organizations*, 141.

¹⁹⁵ Donaldson, 142.

¹⁹⁶ Mintzberg, *The Structuring of Organizations*, 15, 301.

added the missionary and political forms for a total of seven configurations.¹⁹⁷ In 1986, Miller proposed four strategy and structure configurations: simple structure, innovating adhocracy, machine bureaucracy, and divisionalized conglomerate.¹⁹⁸ Like contingency theory, the configuration approach has critics, primarily around the lack of flexibility in coordination mechanisms and configurations.¹⁹⁹ Critics believe the configuration approach does not allow for implementing multiple feasible and equally effective organization design elements, known as “equifinality.”²⁰⁰

5. Shifting Towards Organic Structures and Networks

Until the 1980s, bureaucratic and hierarchical organizational structures were seen as the primary method of organization design across all sectors.²⁰¹ But, in the 1980s, organizations started to shift towards more flexible approaches to organizing their work and staff due to increased threats of competition.²⁰² Much of this shift was due to the general understanding of how organizational structure affects information flow and decision-making.²⁰³ While many private sector entities started experimenting with what Daft describes as “teams, flattened hierarchies, and participative management approaches” in the 1980s, the government still frequently maintains bureaucratic and hierarchical

¹⁹⁷ Henry Mintzberg, *Structure in Fives: Designing Effective Organizations*, Designing Effective Organizations. (Englewood Cliffs, NJ: Prentice-Hall, 1993), 293–94; and Henry Mintzberg, *Mintzberg on Management: Inside Our Strange World of Organizations* (New York: Free Press, 1989), 110, 114–15.

¹⁹⁸ Donaldson, *The Contingency Theory of Organizations*, 142–43; and Miller, “Configurations of Strategy and Structure,” 244.

¹⁹⁹ Donaldson, *The Contingency Theory of Organizations*, 141–42, 145; and Thompson, *Organizations in Action*, 55–56, 147–48.

²⁰⁰ Donaldson, *The Contingency Theory of Organizations*, 143.

²⁰¹ Daft, *Organization Theory & Design*, 28.

²⁰² Amanda Bennett, *The Death of the Organization Man* (New York: Touchstone, 1990), 21, <https://archive.org/details/deathoforganiza00benn/>.

²⁰³ Sirney, “Does Theory Matter?,” 14; and Markus Reitzig and Boris Maciejovsky, “Corporate Hierarchy and Vertical Information Flow Inside the Firm – a Behavioral View,” *Strategic Management Journal* 36, no. 13 (2015): 1996, <https://doi.org/10.1002/smj.2334>.

organizational structures.²⁰⁴ Over the last few decades, flexible organizational structures have prevailed across the private sector, while government entities have seen minimal changes.²⁰⁵

Although the organization design literature reviewed for this thesis focused primarily on the permanent structural design of government organizations, a substantial body of literature has emerged over the last fifty years on the interface of risk mitigation and consequence management organizations and frameworks supporting greater collaboration levels.²⁰⁶ Many scholars have seen collaborative networks as the preferred risk mitigation and consequence management organizational model for the future as they

²⁰⁴ Daft, *Organization Theory & Design*, 28; Torfing and Triantafillou, “Enhancing Public Innovation,” 5; Peters, “Can Public Governance Be Changed to Enhance Innovation?,” 313; Holguin, “Local-Level Homeland Security and Emergency Management,” 67–72; Ewens and van der Voet, “Organizational Complexity and Participatory Innovation,” 1848; Jakobsen and Thrane, “Public Innovation and Organizational Structure,” 217; and Goodsell, *The Case for Bureaucracy*, 48–49.

²⁰⁵ Daft, *Organization Theory & Design*, 28; and Barry Bozeman, “Organization Design in the Public Bureaucracy,” *American Review of Public Administration* 15, no. 2 (July 1981): 108, <https://doi.org/10.1177/027507408101500201>.

²⁰⁶ Scott E. Robinson et al., “The Core and Periphery of Emergency Management Networks,” *Public Management Review* 15, no. 3 (2013): 345–46, <https://doi.org/10.1080/14719037.2013.769849>; Naim Kapucu, “Performance Under Stress: Managing Emergencies and Disasters: Introduction,” *Public Performance & Management Review* 32, no. 3 (March 2009): 339, <https://doi.org/10.2753/PMR1530-9576320300>; Hyeon-Wook Boo, “A Meta-Synthesis of Emergency Network Management Strategies and Analysis of Hurricane Katrina” (PhD diss., Virginia Polytechnic Institute and State University, 2008), 161–62, <https://vtechworks.lib.vt.edu/handle/10919/28205>; Louise Comfort, “Collaborative Governance Under Stress: Limits, Failure, Renewal,” in *Handbook of Collaborative Public Management*, by Jack Meek (Cheltenham, UK: Edward Elgar Publishing, 2021), 425, <https://doi.org/10.4337/9781789901917.00040>; Naim Kapucu, “Interorganizational Coordination in Complex Environments of Disasters: The Evolution of Intergovernmental Disaster Response Systems,” *Journal of Homeland Security and Emergency Management* 6, no. 1 (2009): 1, <https://doi.org/10.2202/1547-7355.1498>; Qian Hu, Abdul-Akeem Sadiq, and Naim Kapucu, “Multiplexity in Conceptualizing Network Effectiveness in Emergency Management,” *Journal of Homeland Security and Emergency Management*, 2022, 1–2, <https://doi.org/10.1515/jhsem-2021-0089>; Lori R. Hodges and Michael D. Larrañaga, “Emergency Management as a Complex Adaptive System,” *Journal of Business Continuity & Emergency Planning* 14, no. 4 (Summer 2021): 355; Rebecca M. Rice, *Communicating Authority in Interorganizational Collaboration* (New York: Routledge, 2021), 1–2, <https://doi.org/10.4324/9781003129158>; and Yujin Choi, “Mapping the Structural Patterns of Intergovernmental Emergency Networks: An Exploratory Study,” *Public Policy and Administration Review* 3, no. 1 (June 2015): 12, <https://doi.org/10.15640/ppar.v3n1a2>. Literature topics include complex adaptive systems, dynamic networks, social networks, network governance, network analysis, interorganizational collaboration, interorganizational networks, collaborative governance, and other similar terms.

can best adapt to the demands of a rapidly changing environment.²⁰⁷ However, most of the literature focuses on the response phase of emergency management, typically with a scope of studying the intergovernmental and interagency response to a crisis.²⁰⁸ For example, a frequent research topic is to assess the performance of the hierarchical Incident Command System (ICS) during an emergency compared to collaborative networks.²⁰⁹ These concepts agree with modern practices in organization design, including using various information linkages to support greater collaboration in organizations.²¹⁰ However, these findings were not as valuable to this thesis focused on the day-to-day organizational structure of government agencies.

6. Government Reorganizations

Beyond the research found in the organization design and management fields on private sector organizations, scholars have looked to understand reorganizations in government. At the federal level, the creation of the U.S. Department of Homeland Security (DHS) led to a massive restructuring of government risk mitigation and consequence management functions and other non-related activities. Newmann identified two primary models that could be used in creating this new agency: the departmental and interagency

²⁰⁷ Robinson et al., “The Core and Periphery of Emergency Management Networks,” 346; Anna Crane, “Federal/State/Local Collaboration Networks in Disasters Case Study,” *Open Journal of Social Sciences* 11, no. 4 (April 2023): 217–18, <https://doi.org/10.4236/jss.2023.114016>; and Naim Kapucu and Vener Garayev, “Structure and Network Performance: Horizontal and Vertical Networks in Emergency Management,” *Administration & Society* 48, no. 8 (October 2016): 931–32, <https://doi.org/10.1177/0095399714541270>.

²⁰⁸ Qian Hu and Naim Kapucu, “Information Communication Technology Utilization for Effective Emergency Management Networks,” *Public Management Review* 18, no. 3 (2016): 326–27, <https://doi.org/10.1080/14719037.2014.969762>; and Kapucu and Hu, “An Old Puzzle and Unprecedented Challenges,” 775–78.

²⁰⁹ Nowell and Steelman, “Beyond ICS,” 3; Chang and Trainor, “Balancing Mechanistic and Organic Design Elements,” 242; and Scales, Fouladi, and Horney, “Description of the Use of the Incident Command System,” 874–75.

²¹⁰ Jay Galbraith, *Designing Complex Organizations* (Reading, MA: Addison-Wesley Publishing Company, 1973), 17–18, 48, <https://archive.org/details/designingcomplex00galb>; Galbraith, *Organization Design*, 96–129; Turkulainen and Ketokivi, “The Contingent Value of Organizational Integration,” 39–40; and Thomas Kayser, “Six Ingredients for Collaborative Partnerships,” *Leader to Leader* 2011, no. 61 (Summer 2011): 50, <https://doi.org/10.1002/ltl.480>.

models.²¹¹ Wise and Nader took a different approach, promoting a network model instead of a rigid organizational structure.²¹² Despite the massive reorganization of the federal government after 9/11, Roberts found that state and local emergency management agencies were much more likely to have reorganized to incorporate terrorism-related activities than the Federal Emergency Management Agency (FEMA).²¹³

It is unclear how much organization theory and design practices have been leveraged in previous reorganizations of government risk mitigation and consequence management functions to improve organizational effectiveness and efficiency.²¹⁴ Howard posits, “The orthodox theory of administrative reorganization is grounded in the belief that economy and efficiency are governing values and that proper restructuring of organizations will lead to better economy and efficiency.”²¹⁵ Focusing on emergency management, Smith found that increasing effectiveness, efficiency, or economy were significant self-reported contributors to reorganization in many states who reorganized their emergency management agencies between 1985 and 1993.²¹⁶ Durbin reiterates that efficiency and effectiveness was a reason behind the restructuring of some state governments to incorporate new homeland security constructs after the 9/11 terrorist attacks.²¹⁷ This reasoning should not be surprising since the literature notes a substantial number of state government reorganizations from the 1960s through the 1990s focused on improving

²¹¹ Durbin, “Organizational Structuring for Homeland Security,” 15; and William W. Newmann, “Reorganizing for National Security and Homeland Security,” *Public Administration Review* 62, no. S1 (September 2002): 126, <https://doi.org/10.1111/1540-6210.62.s1.22>.

²¹² Durbin, “Organizational Structuring for Homeland Security,” 15–16; Charles R. Wise, “Organizing for Homeland Security,” *Public Administration Review* 62, no. 2 (2002): 141–42, <https://doi.org/10.1111/0033-3352.00164>; and Charles R. Wise and Rania Nader, “Organizing the Federal System for Homeland Security: Problems, Issues, and Dilemmas,” *Public Administration Review* 62, no. S1 (September 2002): 54, <https://doi.org/10.1111/1540-6210.62.s1.8>.

²¹³ Durbin, “Organizational Structuring for Homeland Security,” 19; and Roberts, “Shifting Priorities,” 443.

²¹⁴ Howard, “Organization and Reorganization as Manifestation of Public Policy,” 58–59; and Clark F. Norton, *Emergency Preparedness and Disaster Assistance: Federal Organization and Programs*, CRS Report No. 78–102 (Washington, DC: Congressional Research Service, 1978), 5–6.

²¹⁵ Howard, “Organization and Reorganization as Manifestation of Public Policy,” 47.

²¹⁶ Durbin, “Organizational Structuring for Homeland Security,” 27; and Smith, “Why State Emergency Management Agencies Reorganize,” 144–45.

²¹⁷ Durbin, “Organizational Structuring for Homeland Security,” 89.

efficiency and effectiveness.²¹⁸ However, the literature helps to explain some of the other organizational behaviors that may have contributed to the structures of government risk mitigation and consequence management functions. Many scholars have looked at the initiating factors behind government reorganizations, identifying that politics plays a significant role, another area backed up by Howard and Smith's research on emergency management.²¹⁹

Due to the "shared governance" model, federalism may also significantly contribute to reorganizations.²²⁰ In this model, each level of government plays a different role in implementing risk mitigation and consequence management programs.²²¹ These roles may range from policy and doctrine development to grantmaking and implementing emergency management functions.²²² This model requires multiple levels of government to work together as a system to deliver complete emergency management functions.

²¹⁸ Durbin, 23–24; and James Conant, "Management Consequences of the 1960–1990 'Modernization' of State Government," in *Handbook of State Government Administration*, ed. John J. Gargan (New York: Marcel Dekker, 2000), 17, 26–27.

²¹⁹ Durbin, "Organizational Structuring for Homeland Security," 28, 30–33, 35–36, 90; Chackerian, "Reorganization of State Governments," 25–26, 32–36; Berkman and Reenock, "Incremental Consolidation and Comprehensive Reorganization of American State Executive Branches," 808, 810; Brademas, "Federal Reorganization," 37; Smith, "Why State Emergency Management Agencies Reorganize," 157–59; James G. March and Johan P. Olsen, *Rediscovering Institutions: The Organizational Basis of Politics* (New York: Free Press, 1989), 76–78, <http://archive.org/details/rediscoveringins00marc>; and Howard, "Organization and Reorganization as Manifestation of Public Policy," 315.

²²⁰ May and Williams, *Disaster Policy Implementation*, 6; Beverly A. Cigler, "Fighting COVID-19 in the United States with Federalism and Other Constitutional and Statutory Authority," *Publius: The Journal of Federalism* 51, no. 4 (Fall 2021): 4–5, <https://doi.org/10.1093/publius/pjab021>; Durbin, "Organizational Structuring for Homeland Security," 37; Patrick Roberts, "Toward a National Hazards Risk Assessment," *Journal of Homeland Security and Emergency Management* 4, no. 3 (2007): 1, <https://doi.org/10.2202/1547-7355.1351>; Patrick Roberts, "Dispersed Federalism as a New Regional Governance for Homeland Security," *Publius: The Journal of Federalism* 38, no. 3 (Summer 2008): 416, <https://doi.org/10.1093/publius/pjn010>; and Brademas, "Federal Reorganization," 27, 36.

²²¹ May and Williams, *Disaster Policy Implementation*, 6; Cigler, "Fighting COVID-19," 5; and Drabek, *Professional Emergency Manager*, 26–27.

²²² May and Williams, *Disaster Policy Implementation*, 21–28; Kaiju Chang, "Exploring the Dynamics of Local Emergency Management Collaboration in the United States —What We Learned from Florida County and City Emergency Managers' Viewpoints," *EurAmerica* 48, no. 1 (March 2018): 9–12, <https://www.ea.sinica.edu.tw/QDown.ashx?ID=6412>; Alvin H. Mushkatel and Louis F. Weschler, "Emergency Management and the Intergovernmental System," *Public Administration Review* 45 (January 1985): 54, <https://doi.org/10.2307/3134997>; William L. Waugh, *Living with Hazards, Dealing with Disasters: An Introduction to Emergency Management* (Armonk, N.Y.: M.E. Sharpe, 2000), 258–59; Drabek, *Professional Emergency Manager*, 26–27; and Stevenson and Hayman, *Local Government Disaster Protection*, 54.

Agencies may be reorganized to enable better communication and information processing to perform these functions jointly. The required intergovernmental relationships to support “shared governance” enable other organizational behaviors that influence design.

7. Institutionalism

Intergovernmental relations create an environment that fosters institutionalism while forming and reforming organizations.²²³ The institutional perspective emphasizes organizations’ success by aligning their structure and behaviors with the expectations of their stakeholders and the external environment.²²⁴ Followers of this perspective believe that organizations strive for legitimacy, much of which comes from their homogeneity with peer organizations.²²⁵ This phenomenon is known as institutional isomorphism, which can emerge due to mimetic, coercive, and normative forces.²²⁶

Smith identified that state emergency management organizations would typically look to neighboring states for insight into how they could reorganize.²²⁷ In addition, both Smith and Waugh note that the creation of FEMA contributed to the design of many state emergency management agencies.²²⁸ Durbin similarly found the creation of DHS as a significant influence in reorganizing state homeland security functions.²²⁹ The great uncertainty during the creation of FEMA (and later DHS) can help explain the mimetic

²²³ M. Tina Dacin, Jerry Goodstein, and W. Richard Scott, “Institutional Theory and Institutional Change: Introduction to the Special Research Forum,” *Academy of Management Journal* 45, no. 1 (February 2002): 47, <https://doi.org/10.2307/3069284>; and Peter J. May, “FEMA’s Role in Emergency Management: Examining Recent Experience,” *Public Administration Review* 45 (1985): 44, <https://doi.org/10.2307/3134996>.

²²⁴ Meyer and Rowan, “Institutionalized Organizations,” 341, 353; and Greenwood and Miller, “Tackling Design Anew,” 85.

²²⁵ Suchman, “Managing Legitimacy,” 589.

²²⁶ Pugh and Hickson, “Paul J. DiMaggio and Walter W. Powell,” 257–60; and DiMaggio and Powell, “The Iron Cage Revisited,” 150.

²²⁷ Durbin, “Organizational Structuring for Homeland Security,” 27–28; and Smith, “Why State Emergency Management Agencies Reorganize,” 148–52.

²²⁸ Durbin, “Organizational Structuring for Homeland Security,” 28, 39, 42; Smith, “Why State Emergency Management Agencies Reorganize,” 70, 84; and Waugh, *Living with Hazards, Dealing with Disasters*, 63, 258–59.

²²⁹ Durbin, “Organizational Structuring for Homeland Security,” 94–97.

forces driving isomorphism within state and local emergency management organizations.²³⁰ Baumgartner and Jones' concept of "punctuated equilibrium" describes that major reconfigurations of political institutions can result from the desire for stability and "self-correcting mechanisms" within an unstable political system.²³¹ Many scholars recognize that disasters are "focusing events" and can result in major legislation and policy changes that create significant instability.²³² The literature points out that the behaviors of mimetic isomorphism may require a considerable role of the federal government to promote evidence-based techniques to organize risk mitigation and consequence management functions, as other jurisdictions will likely follow.

Coercive forces are also a likely contributor to emergency management reorganizations due to requirements to follow FEMA policies and standards to maintain grant eligibility.²³³ New federal grant funding opportunities spurred substantial reorganizations at the state and local level after the creation of FEMA in the late 1970s and DHS in the early 2000s.²³⁴ Bowling and Wright's 1998 study of federal aid programs supports this claim, noting that grants have led to a substantial increase in the decentralization of government programs to states.²³⁵ Based on the coercive isomorphism literature, it appears that the federal government should place specific emphasis on not creating policies and requirements that force state and local jurisdictions to adopt specific organization structures that do not enable the best fit for their particular contingencies.

²³⁰ Daft, *Organization Theory & Design*, 208.

²³¹ Durbin, "Organizational Structuring for Homeland Security," 34–35; and Frank Baumgartner and Bryan Jones, *Policy Dynamics* (Chicago: University of Chicago Press, 2002), 1, <https://archive.org/details/policydynamics0000unse>.

²³² Durbin, "Organizational Structuring for Homeland Security," 34; Tierney, "Recent Developments in U.S. Homeland Security Policies," 1; Rubin, Renda-Tanali, and Cumming, "Disaster Time Line"; and Birkland, *After Disaster*, 1–3.

²³³ Durbin, "Organizational Structuring for Homeland Security," 28, 36, 42; Smith, "Why State Emergency Management Agencies Reorganize," 84; Brademas, "Federal Reorganization," 27–28, 36; and Daft, *Organization Theory & Design*, 210.

²³⁴ Durbin, "Organizational Structuring for Homeland Security," 18–19; and Roberts, "Shifting Priorities," 441.

²³⁵ Durbin, "Organizational Structuring for Homeland Security," 22; and Cynthia J. Bowling and Deil S. Wright, "Change and Continuity in State Administration: Administrative Leadership Across Four Decades," *Public Administration Review* 58, no. 5 (1998): 430, <https://doi.org/10.2307/977552>.

8. Organizational Fragmentation, Overlap, and Duplication

In addition to reviewing the literature on the current state of organization theory, structural design practices, and the common reasons for reorganizations, this thesis considered existing practices to identify organizational fragmentation, overlap, and duplication. The Government Accountability Office (GAO) has developed guidance for auditors and policymakers on government fragmentation, overlap, and duplication, emphasizing on the federal executive branch.²³⁶ Their methodology could be flexible enough to be leveraged to analyze state and local jurisdictions. The GAO process has four steps:

- Identify fragmentation, overlap, and duplication
- Identify the potential effects of fragmentation, overlap, and duplication
- Validate effects and assess and compare programs
- Identify options to increase efficiency and reduce or better manage fragmentation, overlap, and duplication²³⁷

The GAO uses the process as part of its annual report to Congress on opportunities to reduce fragmentation, overlap, and duplication in federal agencies.²³⁸ It has also been used by the GAO and others to evaluate fragmentation, overlap, and duplication within DHS

²³⁶ Government Accountability Office, *Fragmentation, Overlap, and Duplication: An Evaluation and Management Guide*, GAO-15-49SP (Washington, DC: Government Accountability Office, 2015), <https://www.gao.gov/assets/gao-15-49sp.pdf>.

²³⁷ Government Accountability Office, 4.

²³⁸ “Duplication & Cost Savings,” Government Accountability Office, accessed July 18, 2022, <https://www.gao.gov/duplication-cost-savings>.

and other government risk mitigation and consequence management functions.²³⁹ The conditions assessed in the GAO framework are shown in Figure 9.

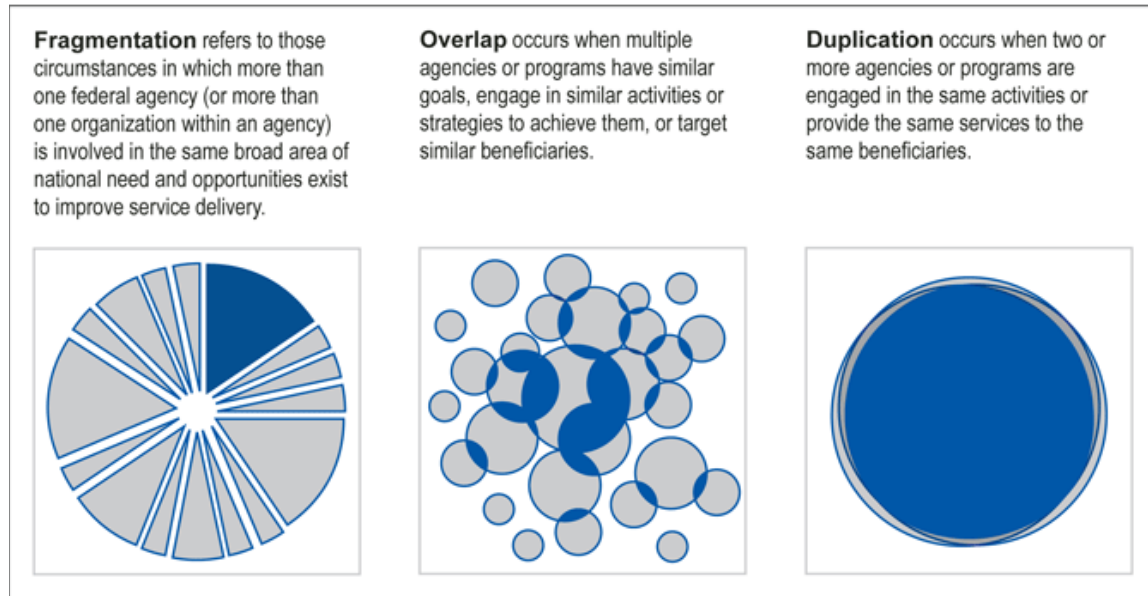


Figure 9. Characteristics of Fragmentation, Overlap, and Duplication²⁴⁰

²³⁹ Janet Heinrich, *Homeland Security: New Department Could Improve Coordination but May Complicate Public Health Priority Setting*, GAO-02-883T (Washington, DC: General Accounting Office, 2002), <https://www.gao.gov/assets/gao-02-883t.pdf>; Janet Heinrich, *Homeland Security: New Department Could Improve Coordination but Transferring Control of Certain Public Health Programs Raises Concerns*, GAO-02-954T (Washington, DC: General Accounting Office, 2002), <https://www.gao.gov/assets/gao-02-954t.pdf>; Posner, *Homeland Security*; Government Accountability Office, *2015 Annual Report: Additional Opportunities to Reduce Fragmentation, Overlap, and Duplication and Achieve Other Financial Benefits*, GAO-15-404SP (Washington, DC: Government Accountability Office, 2015), 91–96, 188–93, <https://www.gao.gov/assets/gao-15-404sp.pdf>; Patricia Dalton, *Government Efficiency and Effectiveness: Opportunities for Improvement and Considerations for Restructuring*, GAO-12-454T (Washington, DC: Government Accountability Office, 2012), <https://www.gao.gov/assets/gao-12-454t.pdf>; Chris Currie, *Disaster Recovery: Actions Needed to Improve the Federal Approach*, GAO-23-104956 (Washington, DC: Government Accountability Office, 2022), <https://www.gao.gov/assets/gao-23-104956.pdf>; Government Accountability Office, *2020 Annual Report: Additional Opportunities to Reduce Fragmentation, Overlap, and Duplication and Achieve Billions in Financial Benefits*, GAO-20-440SP (Washington, DC: Government Accountability Office, 2020), 53–54, <https://www.gao.gov/assets/gao-20-440sp.pdf>; Currie, *Federal Emergency Management Agency*; and Barnosky et al., *Streamlining Emergency Management*, 3–5.

²⁴⁰ Source: Government Accountability Office, *2020 Annual Report*, 2.

9. Summary

Many other theories and frameworks related to how information is shared to support decision-making have emerged in addition to structural contingency theory, the configuration approach, and the institutional perspective, including resource dependence theory, population ecology theory, agency theory, transaction costs theory, signaling theory, and ambidexterity.²⁴¹ Many of these have some applicability to organizing government risk mitigation and consequence management functions but are not referenced heavily throughout the thesis to keep a manageable scope.

Because of the breadth of organization theory and design literature, there are many examples of consensus and conflict among scholars. Most applicable to this thesis, it is clear that organization design has become more flexible since the 1960s, with organizations moving away from rigid bureaucratic structures.²⁴² Even government organizations, frequently known for bureaucracy, have leveraged organization design techniques to enable better information sharing and decision-making.²⁴³ Many studies show that funding, politics, and intergovernmental mandates may influence government

²⁴¹ Shenkar and Ellis, “The Rise and Fall of Structural Contingency Theory,” 805–7; Jeffrey Pfeffer and Gerald Salancik, *The External Control of Organizations: A Resource Dependence Perspective* (Stanford, CA: Stanford University Press, 2003), 258–62, <https://archive.org/details/externalcontrolo0000pfeff>; Michael Hannan and John Freeman, “The Population Ecology of Organizations,” *American Journal of Sociology* 82, no. 5 (March 1977): 929, <https://doi.org/10.1086/226424>; Michael Jensen and William Meckling, “Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure,” *Journal of Financial Economics* 3, no. 4 (October 1976): 305–6, [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X); Oliver E. Williamson, “Transaction-Cost Economics: The Governance of Contractual Relations,” *Journal of Law and Economics* 22, no. 2 (October 1979): 233–35, 261, <https://doi.org/10.1086/466942>; Oliver Williamson, *Markets and Hierarchies: Analysis and Antitrust Implications* (New York: Free Press, 1983), 248, <https://archive.org/details/markethierarchi00will/>; Brian Connelly et al., “Signaling Theory: A Review and Assessment,” *Journal of Management* 37, no. 1 (January 2011): 39, <https://doi.org/10.1177/0149206310388419>; Cristina B. Gibson and Julian Birkinshaw, “The Antecedents, Consequences, and Mediating Role of Organizational Ambidexterity,” *Academy of Management Journal* 47, no. 2 (April 2004): 209, <https://doi.org/10.2307/20159573>; Pennings, “Structural Contingency Theory,” 268; and DiMaggio and Powell, “The Iron Cage Revisited,” 149.

²⁴² Swearingen, “The Buck Stops Where?,” 27; Zannetos, “On the Theory of Divisional Structures,” 49–52, 67; Sirney, “Does Theory Matter?,” 13; Nhema, “Relevance of Classical Management Theories to Modern Public Administration,” 169; and Bennett, *The Death of the Organization Man*, 21.

²⁴³ Jakobsen and Thrane, “Public Innovation and Organizational Structure,” 217–18; and Hal G. Rainey, Sergio Fernandez, and Deanna Malatesta, *Understanding and Managing Public Organizations*, 6th ed. (Hoboken, NJ: John Wiley & Sons, 2021), 225.

reorganizations.²⁴⁴ There is a strong consensus in the literature that deliberate organization design and reorganizations are connected to organizational efficiency and effectiveness.²⁴⁵

C. ORGANIZATION EFFECTIVENESS

1. Effectiveness Versus Efficiency

Reorganizing an organization for the sake of reorganizing may not result in meaningful improvements to the organization's services and products. To understand what makes a successful organization, you must have a way to measure success. Sirney notes that "emergency management programs do not show measurable value until disaster strikes, or an emergency exposes the community to the gaps or successes of the program; jurisdictional leadership has few opportunities to truly see an emergency management program demonstrate its diverse capabilities."²⁴⁶ Despite a need for emergency managers to demonstrate the value of their efforts, a strong consensus has emerged that emergency management programs are not doing enough to measure program effectiveness.

Efficiency and effectiveness are frequently used to measure an organization's outputs and value.²⁴⁷ Efficiency relates to the quantity of resources utilized to accomplish the organization's goals.²⁴⁸ But, a drive toward efficiency can sometimes reduce the effectiveness of an organization. Daft notes effectiveness is "the degree to which an organization achieves its goals."²⁴⁹ In some cases, an efficient operation leads to effectiveness, but the two terms are not related in others.²⁵⁰ Some believe that governments

²⁴⁴ Durbin, "Organizational Structuring for Homeland Security," 18–19, 22, 27–28, 30–37, 39, 42, 90, 94–97; and Smith, "Why State Emergency Management Agencies Reorganize," 70, 84, 148–52, 157–59.

²⁴⁵ Durbin, "Organizational Structuring for Homeland Security," 24, 27, 89; and Smith, "Why State Emergency Management Agencies Reorganize," 144–45.

²⁴⁶ Sirney, "Does Theory Matter?," 3–4.

²⁴⁷ Daft, *Organization Theory & Design*, 23–24.

²⁴⁸ Daft, 24; Amitai Etzioni, *Modern Organizations* (Englewood Cliffs, NJ: Prentice-Hall, 1964), 8, <http://archive.org/details/modernorganizati00etzi>; and Gary D. Sandefur, "Efficiency in Social Service Organizations," *Administration & Society* 14, no. 4 (February 1983): 449, <https://doi.org/10.1177/009539978301400402>.

²⁴⁹ Daft, *Organization Theory & Design*, 24.

²⁵⁰ Daft, 71.

are not designed to consider efficiency and instead have created bureaucratic systems to ensure accountability and inclusiveness.²⁵¹ But, in the last few decades, there have been increased calls for efficiency in the delivery of government services.²⁵² Many organizations across the United States study the implementation of smart practices across many government functions that reduce cost and waste while increasing the speed of delivery.²⁵³

Effectiveness is difficult to measure due to the large selection of functions organizations may perform simultaneously.²⁵⁴ It is a multidimensional concept that does not have a single measure.²⁵⁵ When one considers the diverse activities of a consolidated emergency management agency, the organization may be highly effective at disaster response functions but not successful at their hazard mitigation goals.²⁵⁶ The agency's leader may believe that the organization is effective at both tasks due to their background, education, and other factors influencing their perspective. Daft notes that this is primarily a result of organizational effectiveness being a social construct "that is created and defined by an individual or group rather than existing independently in the external world."²⁵⁷

²⁵¹ Goodsell, *The Case for Bureaucracy*, 5, 140–41; and Jakobsen and Thrane, "Public Innovation and Organizational Structure," 226.

²⁵² Ewens and van der Voet, "Organizational Complexity and Participatory Innovation," 1848; Sandefur, "Efficiency in Social Service Organizations," 449; and Torfing and Triantafillou, "Enhancing Public Innovation," 5, 10.

²⁵³ Goodsell, *The Case for Bureaucracy*, 141–56; and Torfing and Triantafillou, "Enhancing Public Innovation," 1–2.

²⁵⁴ Karl E. Weick and Richard L. Daft, "The Effectiveness of Interpretation Systems," in *Organizational Effectiveness: A Comparison of Multiple Models*, ed. Kim S. Cameron and David A. Whetten (New York: Academic Press, 1983), 72; Medhanie Gaim et al., "Analyzing Competing Demands in Organizations: A Systematic Comparison," *Journal of Organization Design* 7, no. 1 (April 2018): 1–3, 13, <https://doi.org/10.1186/s41469-018-0030-9>; and Stevenson and Hayman, *Local Government Disaster Protection*, 1–4.

²⁵⁵ Rosabeth Moss Kanter and Derick Brinkerhoff, "Organizational Performance: Recent Developments in Measurement," *Annual Review of Sociology* 7 (August 1981): 321–23, <https://doi.org/10.1146/annurev.so.07.080181.001541>; and Kim S. Cameron, "The Effectiveness of Ineffectiveness," in *Research in Organizational Behavior*, ed. Barry M. Staw and L.L. Cummings, vol. 6 (Greenwich, CT: JAI Press, 1984), 278–79.

²⁵⁶ Amanda Miller Savitt, "The Role of the County Emergency Manager in Disaster Mitigation" (PhD diss., North Dakota State University, 2019), 78–79, 89, <https://hdl.handle.net/10365/32067>.

²⁵⁷ Daft, *Organization Theory & Design*, 72; Herman and Renz, "Advancing Nonprofit Organizational Effectiveness Research and Theory," 404; Walton and Dawson, "Managers' Perceptions," 173; and Cameron and Whetten, "Organizational Effectiveness," 7.

Cameron and Whetten describe that while constructs like organizational effectiveness may exist in people's heads, "they have no objective reality."²⁵⁸ The various stakeholders of government risk mitigation and consequence management agencies may all perceive organizational effectiveness differently, so a common approach is necessary to enable comparison.²⁵⁹ Organizational effectiveness literature has studied numerous approaches to measuring effectiveness across an organization focused on outputs, inputs, internal activities, or key stakeholders and strategic constituents. This literature review focuses on some of the most common frameworks, including the goal, resource-based, internal process, and strategic constituents approaches.²⁶⁰

2. Goal Approach

The first approach utilized to gauge effectiveness in organizations is the goal approach. As described by Price, this method is output focused.²⁶¹ It leverages the operating goals established by an organization and assesses how well the organization has achieved them.²⁶² The types of goals that may be evaluated within the risk mitigation and consequence management space could include the number of emergency operations center activations, the number of generators installed at critical facilities, the number of trained responders in flood preparedness, or the number of residents provided with financial assistance after a disaster.

The goal approach has been criticized by many scholars, particularly those who follow the resource-based approach.²⁶³ Critics note that the goal approach presents

²⁵⁸ Cameron and Whetten, "Organizational Effectiveness," 7.

²⁵⁹ Stevenson and Hayman, *Local Government Disaster Protection*, 18.

²⁶⁰ Daft, *Organization Theory & Design*, 72; and Cameron and Whetten, "Organizational Effectiveness," 7.

²⁶¹ James L. Price, "The Study of Organizational Effectiveness," *The Sociological Quarterly* 13, no. 1 (January 1972): 5–6, <https://doi.org/10.1111/j.1533-8525.1972.tb02100.x>; and Stephen Strasser et al., "Conceptualizing the Goal and System Models of Organizational Effectiveness —Implications for Comparative Evaluation Research," *Journal of Management Studies* 18, no. 3 (July 1981): 321–22, <https://doi.org/10.1111/j.1467-6486.1981.tb00105.x>.

²⁶² Price, "The Study of Organizational Effectiveness," 5–6; and Strasser et al., "Conceptualizing the Goal and System Models of Organizational Effectiveness," 321–22.

²⁶³ Price, "The Study of Organizational Effectiveness," 3.

challenges in organizations with multiple goals within vastly different activities.²⁶⁴ Within the emergency management space, an increase in the number of residents served within an emergency shelter may demonstrate effectiveness within the organization's response capabilities.²⁶⁵ However, suppose the agency is also responsible for reducing the likelihood of disaster impacts that would cause an emergency shelter to be activated.²⁶⁶ In that case, the organization may actually be failing at its mission.²⁶⁷ Finally, while quantitative indicators are preferred, many utilized in the goal approach can be somewhat subjective and challenging to measure.²⁶⁸

Standards adoption is a common way to measure the effectiveness of risk mitigation and consequence management programs using the goal approach. Alexander's paper describing the development of an emergency planning standard is an essential reference.²⁶⁹ In addition to providing a draft standard, Alexander's article reviews how it could be developed, what indicators it would involve, and describes how it can be leveraged to evaluate emergency plans.²⁷⁰ Alexander promotes the standards approach to help bolster emergency management's place as a legitimate profession.²⁷¹ In addition, implementing an emergency planning standard could improve the efficiency of emergency operations.²⁷² Perhaps the most significant challenge Alexander's article raises is its narrow focus on emergency planning rather than the entire emergency management program.

²⁶⁴ Daft, *Organization Theory & Design*, 74.

²⁶⁵ Daft, 74–75.

²⁶⁶ Daft, 74–75.

²⁶⁷ Daft, 74–75.

²⁶⁸ Daft, 75.

²⁶⁹ David Alexander, "Towards the Development of a Standard in Emergency Planning," *Disaster Prevention and Management: An International Journal* 14, no. 2 (April 2005): 158–75, <https://doi.org/10.1108/09653560510595164>.

²⁷⁰ Alexander, 159.

²⁷¹ Alexander, 159.

²⁷² Alexander, 160.

By contrast, Kartez and Lindell counter the concept of emergency planning standards because of the need for flexibility in emergency response.²⁷³ Lindell and Perry, who agree with Kartez and Lindell, advise that other evaluation instruments, including questionnaires and example plans, can be a more efficient way to determine plan quality.²⁷⁴ FEMA concurs with these scholars as the agency regularly promotes best practices rather than strict standards.²⁷⁵ In sum, the literature consensus on emergency management standards is that adopting standards would help align professional emergency management planning efforts but are less likely to be leveraged compared to more flexible guidelines and best practices.

Despite these concerns, many emergency management standards have been developed and implemented in the last few decades.²⁷⁶ These standards help address the scope of functions and activities within a risk mitigation and consequence management program. Of these standards, the EMAP Emergency Management Standard was most applicable for answering the research question in this thesis as it looks beyond the functions performed by the jurisdiction's emergency management agency and instead evaluates the

²⁷³ Jack Kartez and Michael Lindell, "Adaptive Planning for Community Disaster Response," in *Cities and Disaster: North American Studies in Emergency Management*, ed. Richard T. Sylves and William L. Waugh (Springfield, IL: Thomas, 1990), 163–79.

²⁷⁴ Michael K. Lindell and Ronald W. Perry, "Evaluation Criteria for Emergency Response Plans in Radiological Transportation [Sic]," *Journal of Hazardous Materials* 3, no. 4 (October 1980): 335–48, [https://doi.org/10.1016/0304-3894\(80\)80005-7](https://doi.org/10.1016/0304-3894(80)80005-7).

²⁷⁵ Federal Emergency Management Agency, *Partnerships in Preparedness: A Compendium of Exemplary Practices in Emergency Management* (Washington, DC: Federal Emergency Management Agency, 1995), <https://www.hsdl.org/?abstract&did=2883>.

²⁷⁶ Keith Bea, *Emergency Management Preparedness Standards: Overview and Options for Congress*, CRS Report No. RL32520 (Washington, DC: Congressional Research Service, 2006), 11–17, <https://www.everycrsreport.com/reports/RL32520.html>.

emergency management functions across all agencies within the jurisdiction.²⁷⁷ Aligning with Alexander's 2005 recommendations, the EMAP Emergency Management Standard is consensus-based and promotes "consistent quality in emergency management programs, thus providing tangible benefits to the community and public infrastructure these programs serve."²⁷⁸

Lucus' work in 2005 to analyze the baseline assessments of 35 states against the EMAP standard is a critical reference due to its cross-walking of the standard's criteria against the comprehensive emergency management phases.²⁷⁹ Most importantly, her analysis of the emergency management program elements evaluated by EMAP "suggests many of these state emergency management programs are concentrating more resources into response and fewer resources into preparedness, recovery, and mitigation."²⁸⁰ Lucas' analysis aligns with Alexander's support for standards by concluding, "Being able to demonstrate a strong and resilient emergency management program through EMAP accreditation could easily become one of the standards by which communities are evaluated."²⁸¹ In sum, the successful implementation of the EMAP Emergency Management Standard by many jurisdictions helps to reinforce its role as a respected

²⁷⁷ Emily Bentley, "Interstate Cooperation in Homeland Security: Emergency Management Standards and Accreditation," *Spectrum: The Journal of State Government* 77, no. 4 (Fall 2004): 18; Emily Bentley and William L. Waugh, Jr., "Katrina and the Necessity for Emergency Management Standards," *Journal of Emergency Management* 3, no. 5 (2005): 10, <https://doi.org/10.5055/jem.2005.0043>; Emergency Management Accreditation Program, *Emergency Management Standard*; and National Fire Protection Association, *Standard for Emergency, Continuity, and Crisis Management: Preparedness, Response, and Recovery*, NFPA 1660 (Quincy, MA: National Fire Protection Association, 2022), <https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1660>. The National Fire Protection Association's Standard for Emergency, Continuity, and Crisis Management: Preparedness, Response, and Recovery (NFPA 1660) is another prominent emergency management standard, although it is tailored for institutional implementation rather than the jurisdiction level. The functions covered in the EMAP Emergency Management Standard include a variety of emergency management program elements such as planning; resource management; training; exercises, evaluations and corrective actions; and communications and warning.

²⁷⁸ Emergency Management Accreditation Program, *Emergency Management Standard*, 4.

²⁷⁹ Valerie Jean Lucas, "Analysis of Baseline Assessments: Emergency Management Accreditation Program, 2003–2004" (master's thesis, California State University, Long Beach, 2005), ProQuest.

²⁸⁰ Lucas, 7.

²⁸¹ Lucas, 52.

benchmark identifying the necessary functions that make up an emergency management program.

3. Resource-Based Approach

Where the goal approach of measuring effectiveness utilizes the outputs of an organization, the resource-based approach focuses on the inputs.²⁸² Seashore and Yuchtman, and Barney outlined similar constructs using a method to measure effectiveness based on the organizations' ability to obtain numerous valued resources, sometimes scarce, and manage them effectively.²⁸³ Frequent indicators within the risk mitigation and consequence management space could include funding to implement hazard mitigation or climate adaptation projects, access to scarce resources during emergencies, or donations from the private sector or nonprofits to support disaster relief efforts. When outputs or internal efficiency is difficult to measure, the resource-based approach to measuring effectiveness may be more valuable.²⁸⁴ Daft notes the limitation of this approach, stating the resources measured in this approach must have a link to the constituents' needs.²⁸⁵ Theoretically, an emergency management agency could acquire substantial quantities of COVID-19 rapid test kits and stockpile them in a warehouse. But when COVID-19 rapid test kits became widely available from other more accessible sources, the measure of how many resources the agency could obtain was not valuable in judging effectiveness.

²⁸² Daft, *Organization Theory & Design*, 75.

²⁸³ Michael V. Russo and Paul A. Fouts, "A Resource-Based Perspective on Corporate Environmental Performance and Profitability," *Academy of Management Journal* 40, no. 3 (June 1997): 536–37, <https://doi.org/10.2307/257052>; J.L. "Larry" Stimpert, Loren T. Gustafson, and Yolanda Sarason, "Organizational Identity Within the Strategic Management Conversation: Contributions and Assumptions," in *Identity in Organizations: Building Theory Through Conversations*, ed. David A. Whetten and Paul Godfrey (Thousand Oaks, CA: SAGE Publications, 1998), 84, ProQuest eBook Central; Stanley E. Seashore and Ephraim Yuchtman, "Factorial Analysis of Organizational Performance," *Administrative Science Quarterly* 12, no. 3 (1967): 378, <https://doi.org/10.2307/2391311>; and Jay Barney, "Firm Resources and Sustained Competitive Advantage," *Journal of Management* 17, no. 1 (March 1991): 101, <https://doi.org/10.1177/014920639101700108>.

²⁸⁴ Daft, *Organization Theory & Design*, 75.

²⁸⁵ Daft, 76.

4. Internal Process Approach

The third approach leveraged in measuring effectiveness is the internal process approach. Notable scholars contributing to this approach include Bennis, Nadler, and Tushman.²⁸⁶ This approach considers organizational efficiency and health as prime effectiveness indicators, including streamlined internal processes and interdepartmental operations.²⁸⁷ Because this approach does not incorporate the external environment, indicators within government risk mitigation and consequence management organizations do not differ much from what might be found in the private sector or nonprofits. These indicators could include robust horizontal and vertical communication, utilizing minimal resources to achieve outcomes, a positive work climate and strong organizational culture, and coordination across the various operating units within the organization.²⁸⁸ When considering the human relations aspects of an organization, the internal process approach excels.²⁸⁹ However, Daft mentions this model does not consider “total output and the organization’s relationship with the external environment,” something critical to risk mitigation and consequence management organizations when considering the amount of intergovernmental and interdepartmental coordination that typically occurs.²⁹⁰ Much like the goal approach, the indicators can often be subjective and difficult to measure in the internal process approach.²⁹¹

²⁸⁶ Cameron and Whetten, “Organizational Effectiveness,” 7; Warren G. Bennis, “Toward a ‘Truly’ Scientific Management: The Concept of Organizational Health,” in *Changing Organizations: Essays on the Development and Evolution of Human Organization* (New York: McGraw-Hill, 1966), 34–63, <https://archive.org/details/changingorganiza0000benn>; and David A. Nadler and Michael L. Tushman, “A Congruence Model for Organizational Assessment,” in *Organizational Assessment: Perspectives on the Measurement of Organizational Behavior and the Quality of Work Life*, ed. Edward E. Lawler, David A. Nadler, and Cortlandt Cammann (New York: Wiley, 1980), 261–78, https://archive.org/details/organizationalas0000unse_j8j3.

²⁸⁷ Daft, *Organization Theory & Design*, 76.

²⁸⁸ Cunningham, “Approaches to the Evaluation of Organizational Effectiveness,” 469–71; and Beckhard, *Organization Development*, 10–11.

²⁸⁹ Daft, *Organization Theory & Design*, 77.

²⁹⁰ Daft, 77.

²⁹¹ Daft, 77.

5. Strategic Constituents Approach

The strategic constituents approach may be an appropriate tool for government risk mitigation and consequence management organizations due to the diverse nature of their activities and stakeholders. Connolly et al. and Keeley explain that, unlike the other approaches, the strategic constituents approach considers inputs, outputs, and internal processes simultaneously.²⁹² In this approach, Daft notes key stakeholders that “are critical to the organization’s ability to survive and thrive” are identified, and their satisfaction is assessed.²⁹³ Each stakeholder may have different effectiveness criteria.²⁹⁴ Using the above example, a local government may believe that the state emergency management agency is effective if it can provide funding for local risk mitigation projects and effectively source and deploy resources during a crisis. On the other hand, the governor may believe the state emergency management agency is effective if it can reduce negative political impacts and paint the state government in a good light. If the agency is unable to meet the needs of many stakeholder groups, it can be assumed that it is likely not meeting its effectiveness goals.²⁹⁵ Stevenson and Hayman used a variation of this approach in 1981 when studying the effectiveness of local emergency management agencies.²⁹⁶ However, they only looked at the effectiveness criteria from the perspective of the jurisdiction’s citizens.²⁹⁷ This method has been proven to be a more accurate reflection of organizational

²⁹² Terry Connolly, Edward J. Conlon, and Stuart Jay Deutsch, “Organizational Effectiveness: A Multiple-Constituency Approach,” *Academy of Management Review* 5, no. 2 (April 1980): 212, <https://doi.org/10.2307/257430>; and Michael Keeley, “A Social-Justice Approach to Organizational Evaluation,” *Administrative Science Quarterly* 23, no. 2 (1978): 276, <https://doi.org/10.2307/2392565>.

²⁹³ Daft, *Organization Theory & Design*, 77; Anne S. Tsui, “A Multiple-Constituency Model of Effectiveness: An Empirical Examination at the Human Resource Subunit Level,” *Administrative Science Quarterly* 35, no. 3 (September 1990): 458, <https://doi.org/10.2307/2393313>; Charles Fombrun and Mark Shanley, “What’s in a Name? Reputation Building and Corporate Strategy,” *Academy of Management Journal* 33, no. 2 (June 1990): 234, <https://doi.org/10.2307/256324>; and Connolly, Conlon, and Deutsch, “Organizational Effectiveness,” 212–13. For example, stakeholders for a state emergency management agency may include its employees, the governor, other state agencies, citizens, nonprofits, businesses, local governments, and FEMA.

²⁹⁴ Frank Friedlander and Hal Pickle, “Components of Effectiveness in Small Organizations,” *Administrative Science Quarterly* 13, no. 2 (September 1968): 292, 304, <https://doi.org/10.2307/2391456>.

²⁹⁵ Daft, *Organization Theory & Design*, 78.

²⁹⁶ Stevenson and Hayman, *Local Government Disaster Protection*, 1–3.

²⁹⁷ Stevenson and Hayman, 1–3.

effectiveness.²⁹⁸ It applies well within a government agency that does not have a profit motive but does care about its reputation.²⁹⁹

6. Integrated Effectiveness Model

One other model that organizations sometimes leverage to measure effectiveness is the integrated effectiveness model (Figure 10). As described by Daft, the premise of this model is that “organizations do many things and have many outcomes.”³⁰⁰ This model was developed by Quinn and Rohrbaugh in 1983 as a compilation of different indicators.³⁰¹ It has been recognized for balancing the complexities across the entire organization rather than only one piece.³⁰² Their model breaks down effectiveness across two dimensions in a traditional two by two matrix. Along the X-axis, the model considers the organizational focus on issues from an internal and external perspective. For example, internal focus considers the efficiency of employees, whereas external focus considers the organization’s health in the context of the external environment.³⁰³ The Y-axis considers organization structure and spans from greater flexibility to greater control.³⁰⁴ When considering greater control, structural considerations are based on stability and efficiency.³⁰⁵ Greater

²⁹⁸ Tsui, “A Multiple-Constituency Model of Effectiveness,” 480; and Fombrun and Shanley, “What’s in a Name?,” 254–55.

²⁹⁹ Tsui, “A Multiple-Constituency Model of Effectiveness,” 480; and Fombrun and Shanley, “What’s in a Name?,” 254–55.

³⁰⁰ Daft, *Organization Theory & Design*, 79; and Walton and Dawson, “Managers’ Perceptions,” 175–76.

³⁰¹ Robert E. Quinn and John Rohrbaugh, “A Spatial Model of Effectiveness Criteria: Towards a Competing Values Approach to Organizational Analysis,” *Management Science* 29, no. 3 (March 1983): 374, <https://doi.org/10.1287/mnsc.29.3.363>.

³⁰² Quinn and Rohrbaugh, 374.

³⁰³ Daft, *Organization Theory & Design*, 79.

³⁰⁴ Daft, 79.

³⁰⁵ Daft, 79.

flexibility focuses on learning, innovation, and adaptation.³⁰⁶ These two dimensions divide the chart into four competing management styles.³⁰⁷

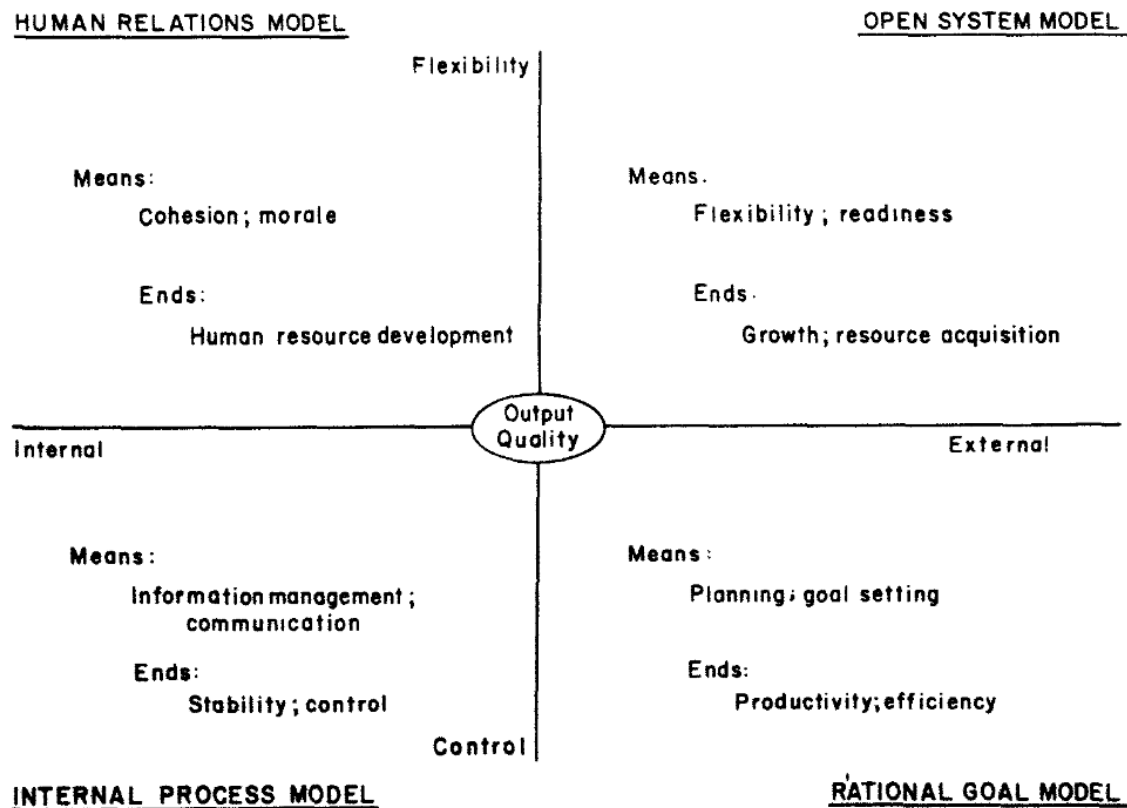


Figure 10. Integrated Effectiveness Model³⁰⁸

The organization has an open systems emphasis when combining external focus and a flexible structure.³⁰⁹ This emphasis places priority on growth and resource acquisition.³¹⁰ The rational goal emphasis combines a greater control structure combined

³⁰⁶ Daft, 79.

³⁰⁷ Regina M. O'Neill and Robert E. Quinn, "Editors' Note: Applications of the Competing Values Framework," *Human Resource Management* 32, no. 1 (Spring 1993): 5–6, <https://doi.org/10.1002/hrm.3930320101>.

³⁰⁸ Source: Quinn and Rohrbaugh, "A Spatial Model of Effectiveness Criteria," 369.

³⁰⁹ Daft, *Organization Theory & Design*, 79.

³¹⁰ Daft, 79.

with an external focus.³¹¹ In this category, the goals center around productivity and efficiency.³¹² The internal process emphasis is utilized when reflecting the values of internal focus and high structural control.³¹³ Here the primary goals are around creating a stable organizational setting and order.³¹⁴ Finally, the fourth quadrant of human relations emphasizes internal focus and flexible structure.³¹⁵ The primary purpose of this section is to develop strong human resources that enable employees to operate independently.³¹⁶

Using this grid, managers can select the appropriate values that will take priority within the organization.³¹⁷ It is likely that the organization will not fit neatly within one category and instead will encompass values from multiple areas. The benefit of this model is that it allows this level of flexibility and supports opposing values, which is reflective of most organizations.³¹⁸ In addition, this model reflects the importance of effectiveness as a social construct derived from management values.³¹⁹ As the environment or other factors change, managers can adapt and shift the priority of the organization's values to measure effectiveness.³²⁰ This model works well for the dynamic nature of emergency management and homeland security agencies as they move between risk mitigation and consequence management activities.

³¹¹ Daft, 80.

³¹² Daft, 80.

³¹³ Daft, 80.

³¹⁴ Daft, 80.

³¹⁵ Daft, 80.

³¹⁶ Daft, 80.

³¹⁷ Daft, 80.

³¹⁸ Daft, 82.

³¹⁹ Daft, 82.

³²⁰ Daft, 82. For example, in an emergency management agency, a significant focus may be on the rational goal emphasis while the jurisdiction is involved in disaster response and recovery. But, when the organization is not committed to the management of an emergency, the human relations emphasis may be most appropriate to help build staff development and retention.

7. Summary

Despite numerous divergent models of measuring organizational effectiveness, all models agree that organizational effectiveness is a social construct. There is also a consensus that there are too many different approaches to measure effectiveness, ultimately diluting the term.³²¹ But, there are countless examples in the literature of conflicts between the models, primarily because there are no universally accepted conceptualizations of an organization.³²² For this thesis, the goal approach is a foundational construct to base effectiveness on the jurisdiction's ability to perform the full suite of risk mitigation and consequence management activities. In this case, the performance of all activities found within the EMAP Emergency Management Standard would be considered the minimum operating goal to be effective for the jurisdiction.³²³ However, conducting all Emergency Management Standard activities does not mean an organization operates efficiently.³²⁴ With this in mind, the thesis research design uses the internal process approach of organizational effectiveness to determine if the structural design elements in a government risk mitigation and consequence management organization are configured most optimally.

D. SUMMARY

This thesis reviewed literature across two primary topics, including the structural design practices that may be utilized in future risk mitigation and consequence management organizational structure iterations and using the effectiveness construct to evaluate organization design. In summary, there is no apparent connection between deliberate organization design and the many reorganizations of risk mitigation and consequence management functions that have taken place at all levels of government.³²⁵

³²¹ Quinn and Rohrbaugh, "A Spatial Model of Effectiveness Criteria," 363.

³²² Cameron and Whetten, "Organizational Effectiveness," 5.

³²³ Emergency Management Accreditation Program, *Emergency Management Standard*.

³²⁴ Canton, *Emergency Management*, 42–43; and Ostroff and Schmitt, "Configurations of Organizational Effectiveness and Efficiency," 1345.

³²⁵ Durbin, "Organizational Structuring for Homeland Security," 18–19, 22, 27–28, 30–37, 39, 42, 90, 94–97; Smith, "Why State Emergency Management Agencies Reorganize," 70, 84, 148–52, 157–59; and Howard, "Organization and Reorganization as Manifestation of Public Policy," 9.

Many scholars support the concept of contingency factors impacting an organization's structural design.³²⁶ In addition, the fit of contingency factors with the structural design is generally believed to affect organizational effectiveness.³²⁷ Finally, while organizational effectiveness is seen as a social construct with very little agreement among models, it is frequently used to initiate the design and redesign of organizations.³²⁸ Together, the literature helps to demonstrate that while much has been studied on these independent topics, there are opportunities to investigate further the nexus of risk mitigation and consequence management functions and organization theory and design.

³²⁶ Donaldson, *The Contingency Theory of Organizations*, 1–3; Madia, “Homeland Security Organizations,” 18; Alberts and Nissen, “Toward Harmonizing Command and Control with Organization and Management Theory,” 3, 15, 25–26; Rosen, “Reorganizing for Homeland Security,” 26; Hanisch and Wald, “A Bibliometric View on the Use of Contingency Theory,” 4; and Luo, Donaldson, and Yu, “Fit of Structure to Multiple Contingencies,” 43.

³²⁷ Walton, “The Persistence of Bureaucracy,” 570; Donaldson, *The Contingency Theory of Organizations*, 1, 185; Pennings, “Structural Contingency Theory,” 268; Luo, Donaldson, and Yu, “Fit of Structure to Multiple Contingencies,” 41; and Alberts and Nissen, “Toward Harmonizing Command and Control with Organization and Management Theory,” 25–26.

³²⁸ Quinn and Rohrbaugh, “A Spatial Model of Effectiveness Criteria,” 363; Herman and Renz, “Advancing Nonprofit Organizational Effectiveness Research and Theory,” 404; Walton and Dawson, “Managers’ Perceptions,” 173; and Cameron and Whetten, “Organizational Effectiveness,” 7.

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IV. ANALYTICAL FRAMEWORK

A. OVERVIEW

This section of the thesis provides an overview of the structural contingency theory-derived framework outlined by Daft in his textbook *Organization Theory & Design* and how it applies to risk mitigation and consequence management organizations.³²⁹ The purpose of the analytical framework was to provide a consistent and systematic approach to assess risk mitigation and consequence management organizations for symptoms of structural deficiency and “goodness of fit.” An analytical framework incorporating organizational “fit” was necessary as the thesis examined if designing a risk mitigation and consequence management organization to achieve better “fit” would result in improved organizational effectiveness. This analytical framework was tested on the case study jurisdiction of Somerville, Massachusetts, in Chapter V.

Daft’s approach assesses how an organization’s structural dimensions and contingency factors fit together to create optimal performance.³³⁰ Contingency factors are the unique conditions driven by the organization’s environmental setting and other internal elements.³³¹ While many organizational contingencies have been studied, Daft considers the most frequently encountered, including organization size, technology, external environment, goals and strategy, and culture.³³² One or more contingency factors will influence the entity’s inwardly focused design characteristics, known as the organization’s structural dimensions.³³³ Structural dimensions help measure and compare organizations across categories, including formalization, specialization, hierarchy of authority, complexity, and centralization.³³⁴ Both structural dimensions and contingency factors

³²⁹ Daft, *Organization Theory & Design*.

³³⁰ Daft, 18.

³³¹ Daft, 18.

³³² Daft, 20.

³³³ Daft, 18, 22, 70.

³³⁴ Daft, 18; and Koufteros et al., “The Impact of Organizational Structure on Internal and External Integration,” 1.

exist across risk mitigation and consequence management organizations and will interact with one another to shape the agency and its work processes.³³⁵

Variations in contingency factors and structural dimensions are typically described by their orientation on the organic and mechanistic design continuum.³³⁶ Burns and Stalker introduced the concepts of organic and mechanistic in their 1961 book *The Management of Innovation*.³³⁷ The terms describe the extremes that can be found at both ends of a continuum of organization design styles.³³⁸ On one end, the efficiency-driven mechanistic design incorporates a strict hierarchy of authority, specialized tasks, a centralized structure, significant vertical communication, and many formalized rules.³³⁹ These types of organizations are frequently driven by contingency factors like efficiency strategies, a stable environment, rigid culture, manufacturing technologies, and large size.³⁴⁰ On the other end of the continuum, the learning and adaptation-oriented organic design focuses on a decentralized structure, empowered roles, frequent horizontal communication, collaborative teamwork, and a much more informal structure with fewer rules.³⁴¹ Contingency factors that shape organic structural dimensions include innovation strategies, a changing environment, adaptive culture, service technologies, and smaller size.³⁴² No organization fits perfectly within the mechanistic or organic category but lies somewhere in between on the spectrum based on how contingency factors influence the structural dimensions.³⁴³ Table 3 displays the typical contingency factor and structural dimension orientations for mechanistic and organic organizations.

³³⁵ Daft, *Organization Theory & Design*, 18.

³³⁶ Daft, 30; and Madia, “Homeland Security Organizations,” 18–19.

³³⁷ Burns and Stalker, *The Management of Innovation*, 5–7.

³³⁸ Daft, *Organization Theory & Design*, 29.

³³⁹ Daft, 30.

³⁴⁰ Daft, 70.

³⁴¹ Daft, 30.

³⁴² Daft, 70.

³⁴³ Daft, 30; and Madia, “Homeland Security Organizations,” 18–19.

Table 3. Typical Contingency Factor and Structural Dimension Orientations³⁴⁴

	Mechanistic Design (Efficiency)	Organic Design (Learning)
Contingency Factors		
Size	Large Size	Small Size
Technology	“Manufacturing” Technology	“Service” Technology
Environment	Stable Environment	Changing Environment
Goals and Strategy	Efficiency Strategy	Innovation Strategy
Culture	Rigid Culture	Adaptive Culture
Structural Dimensions		
Formalization	Many Rules, Formalized	Few Rules, Informal
Specialization	Specialized Tasks	Empowered Roles
Hierarchy of Authority	Strict Hierarchy of Authority	Collaborative Teamwork
Complexity	Vertical Communications	Horizontal Communications
Centralization	Centralized Structure	Decentralized Structure

The analytical framework used in this thesis is outlined in four sections. First, four different levels of analysis where Daft’s framework can be applied within an organization were discussed. Second, all five contingency factors’ typical risk mitigation and consequence management drivers were identified and described. These drivers were assessed using models and frameworks to determine if they result in mechanistic or organic-oriented contingency factors within different emergency management phases and levels of government. Third, the applicable structural dimensions that support optimal fit for mechanistic and organic organizations were identified and described. Finally, example structural design techniques were reviewed for risk mitigation and consequence management organizations at all levels of government to provide the reader with an understanding of how they have been applied.

³⁴⁴ Adapted from Daft, *Organization Theory & Design*, 30.

B. LEVELS OF ANALYSIS

This analytical framework uses four levels to assess organizations to ensure comparisons are conducted across entities with similar authorities and perform similar levels of services (Figure 11). The basis for these levels is derived from Van De Ven and Ferry's work on measuring and assessing organizations and Daft and Steers's work on evaluating organizations from a micro and macro approach.³⁴⁵ The primary difference in the levels of analysis model proposed in this thesis is the division of the "organization level" into an "agency level" and "jurisdiction level."³⁴⁶ This adjustment primarily evaluates the differences between organizations with a risk mitigation and consequence management focus versus the jurisdictions they are housed within that are responsible for many diverse and unrelated functions (i.e., schools, parks, public works, law enforcement, etc.). Because of the complex system of organizations that make up government-led risk mitigation and consequence management in the United States, it is essential to define each level and the factors at play in each.

³⁴⁵ Andrew H. Van de Ven and Diane L. Ferry, *Measuring and Assessing Organizations* (New York: Wiley, 1980), 8, <https://archive.org/details/measuringassessi0000vand>; and Richard L. Daft and Richard M. Steers, *Organizations: A Micro/Macro Approach* (Glenview, IL: Scott, Foresman & Co., 1986), 8, <http://archive.org/details/organizationsmic0000daft>.

³⁴⁶ Daft, *Organization Theory & Design*, 34.

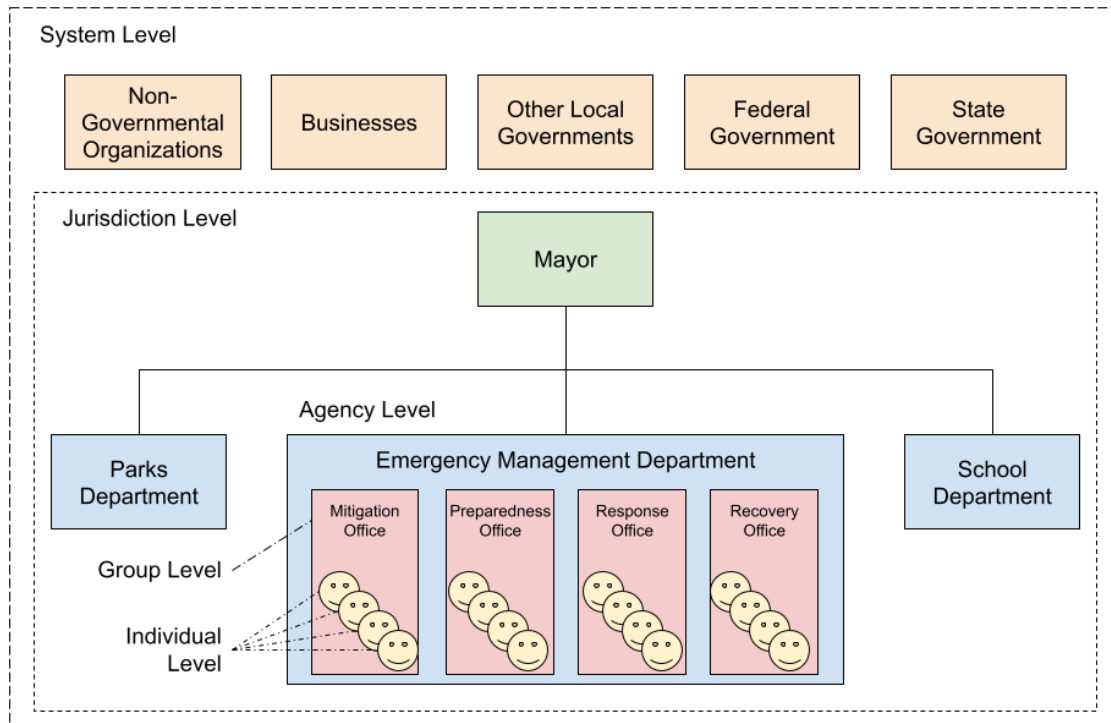


Figure 11. Levels of Organizational Analysis

1. Group Level

The first level of analysis that uses the organization theory and design body of knowledge is the group level. At this level, individuals are grouped as permanent teams under a leader to perform tasks.³⁴⁷ Depending on the organization's size, there can be numerous nested levels of groups within an organization.³⁴⁸ Although this level of analysis uses organization theory concepts, it is not covered within the scope of this thesis.

³⁴⁷ Daft, 34.

³⁴⁸ For example, a large state emergency management agency may have a Recovery & Mitigation Division that could be analyzed at the group level. Below that Division, there may be a Recovery Unit, and below that Unit, Individual Assistance and Public Assistance Branches. Despite being located at different levels in the hierarchy, these are all considered group level analyses as they are situated below the primary risk mitigation and consequence management agency.

2. Agency Level

The agency level consists of government risk mitigation and consequence management organizations. This level primarily looks at how core functions are grouped or divided within consolidated risk mitigation and consequence management agencies at any level of government.³⁴⁹ Some organizations may also have “enabling” divisions that provide support services across multiple risk mitigation and consequence management functions. Enabling organizations are considered the support entities that perform common internal services like legal, financial, logistical, and human resources functions across an organization.³⁵⁰

In this thesis, the agency level of analysis is primarily concerned with the grouping and emphasis placed on top-level divisions that align with the core comprehensive emergency management functions. This level of organization is most applicable to larger government risk mitigation and consequence management agencies as they typically resemble their own independent organization separate from the jurisdiction they are part of, with a strong agency executive and sometimes their own independent facilities and strategic plan.³⁵¹ Like the group level, there may be more than agency level organization within larger jurisdictions.³⁵² The body of knowledge at this level primarily utilizes organization theory and design.

³⁴⁹ For example, a state emergency management agency may have a divisional structure aligned with the comprehensive emergency management model including teams for mitigation, preparedness, response, and recovery.

³⁵⁰ Daft, *Organization Theory & Design*, 317; and Amy Kates, Greg Kesler, and Michele DiMartino, *Networked, Scaled, and Agile: A Design Strategy for Complex Organizations* (New York: Kogan Page, 2021), 31–32.

³⁵¹ Michael DeLorenzo, “FEMA and the Merger with DHS: Did It Impact FEMA’s Autonomy and Performance?” (PhD diss., University of Illinois at Chicago, 2013), 19. Examples could include FEMA or a large state or county emergency management agency.

³⁵² For example, a state government may have a Department of Public Safety at the agency level that contains numerous risk mitigation and consequence management entities including an Office of Homeland Security, an Emergency Management Agency, and an Office of Resilience. All of these could also be analyzed at the agency level due to their level of independence and size.

3. Jurisdiction Level

The next level focuses on government risk mitigation and consequence management organizations at the jurisdiction level. At this level, assessment and evaluation consider the consolidation and distribution of emergency management and other risk mitigation and consequence management functions across the jurisdiction. Many jurisdictions have some style of consolidated emergency management agency that performs some or all mitigation, preparedness, response, and recovery functions.³⁵³ Larger jurisdictions may have multiple consolidated agencies, including emergency management, homeland security, or resilience offices.³⁵⁴ In this case, an essential factor is how the jurisdiction divides the consolidated functions and the branding and emphasis placed on the agencies that contain the functions.³⁵⁵ This level also looks at distributed risk mitigation and consequence management functions across the jurisdiction, including smaller offices or staff members embedded in non-emergency management agencies.³⁵⁶ Here, the point of interest is how the jurisdiction distributed the tasks across a mixture of consolidated risk mitigation and consequence management organizations and other non-risk mitigation and consequence management organizations.

At the jurisdiction level, the risk mitigation and consequence management organization's relationship and connection to the jurisdiction's chief executive (i.e., the governor, county executive, mayor, city manager, etc.) is also essential to understand. Evaluation at this level considers the placement of consolidated risk mitigation and consequence management functions and how far down the jurisdictional hierarchy they

³⁵³ Wenger, Dynes, and Quarantelli, *Disaster Analysis*, 59–65; and Stevenson and Hayman, *Local Government Disaster Protection*, 13–14.

³⁵⁴ Drabek, *Professional Emergency Manager*, 11.

³⁵⁵ Drabek, 178. For example, this level of analysis would pay special attention to the group of mitigation functions that could be found within the jurisdiction's emergency management agency versus their resilience office.

³⁵⁶ Drabek, 11; Wenger, Dynes, and Quarantelli, *Disaster Analysis*, 59–65; and Tierney, "Recent Developments in U.S. Homeland Security Policies," 7. For example, a jurisdiction may have a public health emergency preparedness planner that is housed within the public health agency rather than the emergency management agency.

are.³⁵⁷ A substantial body of literature on emergency management professionalization and placement of emergency management organizations within jurisdictions can be leveraged for this analysis.³⁵⁸ The risk mitigation and consequence management agency's reporting placement within the overall jurisdiction's structure is critical to consider in this level of study because it influences each contingency factor.³⁵⁹ Like the group and agency levels of analysis, the jurisdiction level leverages the organization theory and design body of knowledge with the perspective that any consolidated risk mitigation and consequence management agencies or distributed risk mitigation and consequence management functions are part of a larger jurisdictional organization, all which contain many non-risk mitigation and consequence management functions ranging from public works to education.

4. System Level

Finally, government risk mitigation and consequence management organizations can be analyzed at the system level. This level is also commonly known as the inter-organizational set.³⁶⁰ This level encompasses all levels of government that perform these types of services vertically, incorporating the horizontal distribution of functions across each jurisdiction. Unlike the other levels, the body of knowledge primarily referenced comes from networks and inter-organizational collaboration. Literature on intergovernmental relations, federalism, and government preemption are frequently referenced when assessing interactions between government organizations.

³⁵⁷ For example, this level would assess if the consolidated homeland security agency within the jurisdiction directly reports to the chief executive or if it is nested somewhere within a police department.

³⁵⁸ Sirney, "Does Theory Matter?," 65, 80; Canton, *Emergency Management*, 95; Jensen and Kirkpatrick, "Local Emergency Management and Comprehensive Emergency Management (CEM)," 9; Drabek, *Professional Emergency Manager*, 107, 177–78, 194–96; Wenger, Dynes, and Quarantelli, *Disaster Analysis*, 59–70; Howard, "Organization and Reorganization as Manifestation of Public Policy," 60–61; and DeLorenzo, "FEMA and the Merger with DHS," 200–202.

³⁵⁹ Drabek, *Professional Emergency Manager*, 107, 177–78, 194–96. For example, an emergency management agency buried under another department rather than directly reporting to the jurisdiction's chief executive may influence the organization's culture, environment, goals and strategy.

³⁶⁰ Daft, *Organization Theory & Design*, 34.

Although the system level can be assessed and improved using concepts from the organization theory and design body of knowledge, the independent governance structures, laws, ordinances, regulations, and authorities in each jurisdictional level prevent the holistic redesign of the entire risk mitigation and consequence management system.³⁶¹ In the previous three analysis levels, organizational change could be made to an entire jurisdiction, agencies, or teams under the authority of that jurisdiction's chief executive. However, system-wide deficiencies are more challenging to change as one level of government does not have to adopt any organization design characteristics that another level of government may advocate for, no matter how effective they might be.³⁶² An in-depth discussion on federalism and intergovernmental emergency management authorities is outside the scope of this thesis as there is a large amount of literature on this topic.³⁶³

This thesis primarily looks at the system level from the lens of “shared governance,” each level of government and many departments within each level play a different role in implementing risk mitigation and consequence management functions.³⁶⁴ The phrase “federally supported, state managed, and locally executed” is heavily emphasized in current federal emergency doctrine to describe this intergovernmental relationship between emergency management programs.³⁶⁵ In many cases, various levels

³⁶¹ Bozeman, “Organization Design in the Public Bureaucracy,” 109; and Stevenson and Hayman, *Local Government Disaster Protection*, 1, 49–50. One frequently encountered example is the clear separation of emergency management authorities between states and the federal government due to the Constitution's Tenth Amendment.

³⁶² Drabek, *Professional Emergency Manager*, 28; and Theodore Caplow, Howard M. Bahr, and Bruce A. Chadwick, *Analysis of the Readiness of Local Communities for Integrated Emergency Management Planning* (Charlottesville, VA: United Research Services, 1984), 20, <https://apps.dtic.mil/sti/pdfs/ADA147294.pdf>.

³⁶³ Donald F. Kettl, “Managing Boundaries in American Administration: The Collaboration Imperative,” *Public Administration Review* 66, no. s1 (December 2006): 10–19, <https://doi.org/10.1111/j.1540-6210.2006.00662.x>; Patrick S. Roberts, “Reputation and Federal Emergency Preparedness Agencies, 1948–2003,” in *2004 Annual Meeting of the American Political Science Association*, 2004; Stephen J. Collier and Andrew Lakoff, “Distributed Preparedness: The Spatial Logic of Domestic Security in the United States,” *Environment and Planning D: Society and Space* 26, no. 1 (February 2008): 7–28, <https://doi.org/10.1068/d446t>; and Cigler, “Fighting COVID-19.”

³⁶⁴ Cigler, “Fighting COVID-19,” 5; Waugh, *Living with Hazards, Dealing with Disasters*, 258–59; Drabek, *Professional Emergency Manager*, 26–27; and Stevenson and Hayman, *Local Government Disaster Protection*, 54.

³⁶⁵ “Coordinating the Federal Response,” Department of Homeland Security, March 13, 2020, <https://www.dhs.gov/coronavirus/federal-response>.

of government must work together to deliver the services outlined in the Emergency Management Accreditation Program (EMAP) Emergency Management Standard.³⁶⁶ In reality, this relationship is often not as seamless, with many duplicative programs being simultaneously executed by all levels of government.³⁶⁷ One could consider the system level somewhat theoretical from an organization design perspective as if risk mitigation and consequence management functions could be placed most effectively across the entire government. However, this final level of analysis is critical to mention within a thesis focused on organization design due to the frequent nature of risk mitigation and consequence management functions being performed through a “marble cake” style of intergovernmental service delivery.³⁶⁸ Further information on system level analysis is discussed in the future research section of Chapter VI.

³⁶⁶ Emergency Management Accreditation Program, *Emergency Management Standard*.

³⁶⁷ National Academy of Public Administration, *Coping with Catastrophe*, xi, 81, 87; Kushma, “Preparing for Disaster,” 2, 93; Smith, “Why State Emergency Management Agencies Reorganize,” 2–3; May and Williams, *Disaster Policy Implementation*, 71, 131, 146; Waugh, “Emergency Management and State and Local Government Capacity,” 232; William L. Waugh and Ronald John Hy, “Introduction to Emergency Management,” in *Handbook of Emergency Management: Programs and Policies Dealing with Major Hazards and Disasters*, ed. William L. Waugh and Ronald John Hy (New York: Greenwood Press, 1990), 4, http://archive.org/details/handbookofemer0000unse_c4m7; Hy and Waugh, “The Function of Emergency Management,” 12; Beverly A. Cigler and Raymond J. Burby, “Flooding,” in *Handbook of Emergency Management: Programs and Policies Dealing with Major Hazards and Disasters*, ed. William L. Waugh and Ronald John Hy (New York: Greenwood Press, 1990), 100, http://archive.org/details/handbookofemer0000unse_c4m7; Jeanette M. Trauth and Thomas J. Pavlak, “Hazardous Materials Transport Emergencies,” in *Handbook of Emergency Management: Programs and Policies Dealing with Major Hazards and Disasters*, ed. William L. Waugh and Ronald John Hy (New York: Greenwood Press, 1990), 178, http://archive.org/details/handbookofemer0000unse_c4m7; Ronald John Hy, “Structural Failures,” in *Handbook of Emergency Management: Programs and Policies Dealing with Major Hazards and Disasters*, ed. William L. Waugh and Ronald John Hy (New York: Greenwood Press, 1990), 241, 245, http://archive.org/details/handbookofemer0000unse_c4m7; Mushkatel and Weschler, “Emergency Management and the Intergovernmental System,” 52–53; and Sawsan Abutabenjeh et al., “Supplying the Pandemic Response: The Importance of Public Procurement,” *Journal of Emergency Management* 18, no. 7 (2020): 201, <https://doi.org/10.5055/jem.0549>.

³⁶⁸ Chang, “Exploring the Dynamics of Local Emergency Management Collaboration in the United States,” 9–10; and Morton Grodzins, *The American System: A New View of Government in the United States* (Chicago: Rand McNally, 1966), 8.

C. CONTINGENCY FACTORS

1. Size

Size typically measures the number of employees across the entire organization or various departments.³⁶⁹ The size of the area of jurisdictional responsibility, population size within the jurisdiction, or the number of assets the organization manages are also important measures but are not considered the primary approach to identifying the size contingency within an agency.³⁷⁰ Larger-sized organizations are typically more productive due to economies of scale and scope.³⁷¹ In difficult financial conditions, larger organizations are likelier to continue operations with less impact.³⁷² Frequently larger organizations are more mechanistic, with high standardization and complexity.³⁷³ But, small organizations typically have a flat organic structure and provide flexibility for rapidly changing environmental conditions.³⁷⁴ Rather than very specialized jobs, employees of small firms are likely generalists that can adapt to fill numerous roles.³⁷⁵ Dunbar identified that 150 people is the best size for an organization and that beyond that number, effectiveness is challenged due to bureaucracy, rules, and reduced morale.³⁷⁶

Organizational size typically influences organization design through the implementation of bureaucracy.³⁷⁷ Weber focused on this concept and found that

³⁶⁹ Daft, *Organization Theory & Design*, 20, 22.

³⁷⁰ Daft, 22.

³⁷¹ James Surowiecki, "Big Is Beautiful," *The New Yorker*, October 31, 2011, 38, <https://www.newyorker.com/magazine/2011/10/31/big-is-beautiful>; and Amy K. Donahue and Philip G. Joyce, "A Framework for Analyzing Emergency Management with an Application to Federal Budgeting," *Public Administration Review* 61, no. 6 (2001): 731, <https://doi.org/10.1111/0033-3352.00143>.

³⁷² Scott Thurm, "For Big Companies, Life Is Good," *Wall Street Journal*, April 8, 2012, B1, ProQuest.

³⁷³ Daft, *Organization Theory & Design*, 406.

³⁷⁴ Frits K. Pil and Matthias Holweg, "Exploring Scale: The Advantages of Thinking Small," *MIT Sloan Management Review* 44, no. 2 (Winter 2003): 36, ProQuest; David Sadtler, "The Problem with Size," *Management Today*, November 2007, 52–55, 214779250, ProQuest; and Daft, *Organization Theory & Design*, 408.

³⁷⁵ Daft, *Organization Theory & Design*, 407; and May, "FEMA's Role in Emergency Management," 46.

³⁷⁶ Sadtler, "The Problem with Size," 52–55.

³⁷⁷ Daft, *Organization Theory & Design*, 415.

bureaucratic characteristics could make larger organizations “rational and efficient.”³⁷⁸ When considering the former problems with favoritism and corruption throughout government organizations, bureaucracy helped to promote fair and efficient operations in large agencies.³⁷⁹ The concepts of bureaucracy are pervasive in emergency management and homeland security agencies at all levels of government, including rules and procedures, specialization and division of labor, a hierarchy of authority, written communications and records, technical competence, and the separation of positions from the position holder.³⁸⁰

Numerous studies have assessed the thresholds for when these characteristics create more harm than benefit toward organizational effectiveness and efficiency.³⁸¹ The key findings are that large organizations typically drive different design elements than small organizations.³⁸² A larger organization would require greater formalization through procedures and formal documentation to accomplish standardization.³⁸³ On the other hand,

³⁷⁸ Weber, *The Theory of Social and Economic Organization*, 12–13, 58.

³⁷⁹ Daft, *Organization Theory & Design*, 416.

³⁸⁰ Daft, 416.

³⁸¹ Allen C. Bluedorn, “Pilgrim’s Progress: Trends and Convergence in Research on Organizational Size and Environments,” *Journal of Management* 19, no. 2 (April 1993): 163–91, <https://doi.org/10.1177/014920639301900201>; John R. Kimberly, “Organizational Size and the Structuralist Perspective: A Review, Critique, and Proposal,” *Administrative Science Quarterly* 21, no. 4 (December 1976): 571–97, <https://doi.org/10.2307/2391717>; and Richard L. Daft and Selwyn W. Becker, “Managerial, Institutional, and Technical Influences on Administration: A Longitudinal Analysis,” *Social Forces* 59, no. 2 (December 1980): 392–413, <https://doi.org/10.2307/2578027>.

³⁸² Daft, *Organization Theory & Design*, 418.

³⁸³ Nancy M. Carter and Thomas L. Keon, “Specialization as a Multidimensional Construct,” *Journal of Management Studies* 26, no. 1 (January 1989): 12, <https://doi.org/10.1111/j.1467-6486.1989.tb00714.x>; Cheng-Kuang Hsu, Robert M. Marsh, and Hiroshi Mannari, “An Examination of the Determinants of Organizational Structure,” *American Journal of Sociology* 88, no. 5 (March 1983): 983–85, <https://doi.org/10.1086/227766>; Guy Geeraerts, “The Effect of Ownership on the Organization Structure in Small Firms,” *Administrative Science Quarterly* 29, no. 2 (June 1984): 236, <https://doi.org/10.2307/2393175>; Bernard C. Reimann, “On the Dimensions of Bureaucratic Structure: An Empirical Reappraisal,” *Administrative Science Quarterly* 18, no. 4 (December 1973): 471, <https://doi.org/10.2307/2392199>; Hall, “The Concept of Bureaucracy,” 38; and William A. Rushing, “Organizational Rules and Surveillance: Propositions in Comparative Organizational Analysis,” *Administrative Science Quarterly* 10, no. 4 (March 1966): 439–43, <https://doi.org/10.2307/2391569>. These characteristics are more likely to be present in an organization the size of FEMA or DHS.

a small organization can maintain control through personal observation.³⁸⁴ The larger organization would also be required to promote greater decentralization, as the senior leadership would be burdened by maintaining perfect control over all decisions.³⁸⁵ This decentralization counters the bureaucratic approach where the chief executive would make all decisions about managing the organization.³⁸⁶ A small organization with minimal staff would enable the organization's leader to participate in nearly every decision.³⁸⁷

Large organizations also impact personnel ratios related to clerical, professional, and administrative support staff.³⁸⁸ First, larger organizations achieve administrative economies, as demonstrated by the small proportion of top leaders compared to total employees.³⁸⁹ But, larger organizations also encounter larger clerical and professional

³⁸⁴ Carter and Keon, "Specialization as a Multidimensional Construct," 12; Hsu, Marsh, and Mannari, "An Examination of the Determinants of Organizational Structure," 983–85; Geeraerts, "Effect of Ownership," 236; Reimann, "On the Dimensions of Bureaucratic Structure," 471; Hall, "The Concept of Bureaucracy," 38; and Rushing, "Organizational Rules and Surveillance," 439–43. These characteristics are more likely to be present in an organization the size of a small local emergency management or resilience office.

³⁸⁵ Jerald Hage and Michael Aiken, "Relationship of Centralization to Other Structural Properties," *Administrative Science Quarterly* 12, no. 1 (June 1967): 91, <https://doi.org/10.2307/2391213>.

³⁸⁶ Daft, *Organization Theory & Design*, 418.

³⁸⁷ Daft, 418.

³⁸⁸ W. Graham Astley, "Organizational Size and Bureaucratic Structure," *Organization Studies* 6, no. 3 (July 1985): 212, <https://doi.org/10.1177/017084068500600301>; Spyros K. Lioukas and Demetris A. Xerokostas, "Size and Administrative Intensity in Organizational Divisions," *Management Science* 28, no. 8 (August 1982): 866–67, <https://doi.org/10.1287/mnsc.28.8.854>; Peter M. Blau, "Interdependence and Hierarchy in Organizations," *Social Science Research* 1, no. 1 (April 1972): 19, [https://doi.org/10.1016/0049-089X\(72\)90055-5](https://doi.org/10.1016/0049-089X(72)90055-5); Peter M. Blau and Richard A. Schoenherr, *The Structure of Organizations* (New York: Basic Books, 1971), 83–89, <http://archive.org/details/structureoforgan0000blau>; Amos H. Hawley, Walter Boland, and Margaret Boland, "Population Size and Administration in Institutions of Higher Education," *American Sociological Review* 30, no. 2 (1965): 254–255, <https://doi.org/10.2307/2091570>; Richard L. Daft, "System Influence on Organizational Decision Making: The Case of Resource Allocation," *Academy of Management Journal* 21, no. 1 (March 1978): 18–21, <https://doi.org/10.2307/255658>; and Bernard P. Indik, "The Relationship Between Organization Size and Supervision Ratio," *Administrative Science Quarterly* 9, no. 3 (December 1964): 309–312, <https://doi.org/10.2307/2391443>.

³⁸⁹ Thomas F. James, "The Administrative Component in Complex Organizations," *The Sociological Quarterly* 13, no. 4 (Autumn 1972): 538, <https://doi.org/10.1111/j.1533-8525.1972.tb00835.x>; Daft, "System Influence on Organizational Decision Making," 18–21; Edward A. Holdaway and Thomas A. Blowers, "Administrative Ratios and Organization Size: A Longitudinal Examination," *American Sociological Review* 36, no. 2 (April 1971): 283–86, <https://doi.org/10.2307/2094044>; and John Child, "Parkinson's Progress: Accounting for the Number of Specialists in Organizations," *Administrative Science Quarterly* 18, no. 3 (1973): 345–347, <https://doi.org/10.2307/2391667>.

support staff ratios than smaller organizations.³⁹⁰ The larger ratio is believed to result from greater formal communications and reporting experienced in larger bureaucratic organizations. Regardless of the balance of line employees, top administrators, or support staff, increases in organization size can result in significant changes to structural design.

The size of a risk mitigation and consequence management organization is typically proportional to the number of lives, property, and environment at risk. Like other government services, the jurisdiction's population can drive the department's size.³⁹¹ The frequency and types of threats and hazards encountered within a jurisdiction may also support the need for additional staffing within an agency.³⁹² Jurisdictions with extensive disaster subcultures may recognize the importance of appropriately resourcing robust risk

³⁹⁰ Daft, *Organization Theory & Design*, 418.

³⁹¹ Edwards and Goodrich, "Organizing for Emergency Management," 44; Drabek, *Professional Emergency Manager*, 233; Jennifer Wilson and Arthur Oyola-Yemaiel, "The Evolution of Emergency Management and the Advancement Towards a Profession in the United States and Florida," *Safety Science* 39, no. 1–2 (October 2001): 128, [https://doi.org/10.1016/S0925-7535\(01\)00031-5](https://doi.org/10.1016/S0925-7535(01)00031-5); "About Us," Federal Emergency Management Agency, June 7, 2022, <https://www.fema.gov/about>; and Gary Kreps, "Organizing for Emergency Management," in *Emergency Management: Principles and Practice for Local Government*, ed. Thomas Drabek and Gerard Hoetmer (Washington, DC: International City Management Association, 1991), 46. For example, the Federal Emergency Management Agency employs over 20,000 employees to support the needs of the entire United States. A small city emergency management agency may only have a few employees.

³⁹² Drabek, *Professional Emergency Manager*, 176–77; Stevenson and Hayman, *Local Government Disaster Protection*, 35; National Emergency Management Association, *NEMA Biennial Report 2022* (Lexington, KY: National Emergency Management Association, 2022), 29–30; National Association of Counties, *Managing Disasters at the County Level: A National Survey* (Washington, DC: National Association of Counties, 2019), 3, 20, https://www.naco.org/sites/default/files/documents/Emergency%20Management%20in%20County%20Government_03.25.19.pdf; Ron Southwick, "If Three Mile Island Shuts down, Counties Could Lose Grant Money," WHYY, March 23, 2019, <https://whyy.org/articles/if-three-mile-island-shuts-down-counties-could-lose-grant-money/>; Taylor Six, "How Do We Cope?" BGCAPP Moves Closer to Closure, Leaves Hard Look at Local Economic Impact," *Richmond Register*, March 10, 2022, https://www.richmondregister.com/news/how-do-we-cope-bgcapp-moves-closer-to-closure-leaves-hard-look-at-local-economic/article_f256699c-c630-5494-a880-1134b0babc65.html; Robert O. Schneider, "An Overview of the 'New' Emergency Management," *Journal of Emergency Management* 2, no. 1 (2004): 26, <https://doi.org/10.5055/jem.2004.0007>; and McEntire, "Local Emergency Management Organizations," 170. For example, emergency management agencies within the southeast portion of the United States may have larger staffing resources to support the region's threat of tropical weather. Jurisdictions that contain a nuclear power plant may have staffing dedicated to radiological emergency preparedness planning. If senior leaders do not see risk mitigation and consequence management functions as a priority, they may assign them as a collateral duty to other government staff like the fire department or police department rather than hiring dedicated staff for the roles.

mitigation and consequence management organizations.³⁹³ Finally, available jurisdictional financial resources may impact the size of jurisdictional risk mitigation and consequence management organizations. Suppose the jurisdiction is struggling financially or does not see these functions as a priority.³⁹⁴ In that case, it may not dedicate budgetary funding to hire risk mitigation and consequence management staff or may eliminate positions.³⁹⁵ This scenario could mean a jurisdiction with a large population and significant threats and hazards may still have a small staff size.

The size contingency factor is highly correlated with the level of government in which the organization is located. A smaller local agency with less staff is typically more likely to thrive with an organic design than a larger federal agency that would benefit from a mechanistic design. The level of government will also dictate what types of activities are being conducted within each emergency management phase. For instance, the recovery phase at the federal level might include activities like the Federal Emergency Management Agency (FEMA) Public Assistance disaster cost recovery program. In this case, a larger staff size with a mechanistic design would likely be more efficient in processing reimbursements to lower government levels. However, at the local level, recovery phase activities might include reconstructing a damaged area in the community. A smaller, more organic structure may be most appropriate for these activities. As a contingency factor, size will be challenging to ensure optimal fit as it must as it is jointly influenced by the scale and resources of the organization's level of government as well as the types of technology conducted by that government in the "shared governance" model of risk mitigation and consequence management program delivery. Table 4 displays the optimal risk mitigation and consequence management design orientations and characteristics for the size contingency factor.

³⁹³ Dennis E. Wenger and Jack M. Weller, "Disaster Subcultures: The Cultural Residues of Community Disasters" (working paper, Disaster Research Center, Disaster Research Center, June 1973), 1, 3, 7, <http://udspace.udel.edu/handle/19716/399>.

³⁹⁴ Lisa Balick, "Beaverton, Facing \$10m Shortfall, Considers Job Cuts," KOIN, May 22, 2023, <https://www.koin.com/local/washington-county/beaverton-facing-10m-shortfall-considers-job-cuts/>; and Stevenson and Hayman, *Local Government Disaster Protection*, 28.

³⁹⁵ Balick, "Beaverton, Facing \$10m Shortfall, Considers Job Cuts"; and Stevenson and Hayman, *Local Government Disaster Protection*, 28.

Table 4. Size Contingency Factor Orientations and Characteristics

Emergency Management Phase	Level of Analysis	Optimal Orientation	Design Characteristics
Mitigation	Group or Agency	Mechanistic	Large Size
Preparedness	Group or Agency	Mechanistic	Large Size
Response	Group or Agency	Organic	Small Size
Recovery	Group or Agency	Mechanistic	Large Size
Multiple (Consolidated)	Group, Agency, or Jurisdiction	Organic	Small Size

2. Technology

Organizational technologies within a risk mitigation and consequence management organization can range across the phases or mission areas. Resources seen as technologies can vary from FEMA’s Mobile Emergency Response System (MERS), intended to deploy into austere conditions to provide essential command and control capabilities for decision-makers, to preparedness education websites that teach families how to prepare an emergency kit. In the sense of organization design, the term technology does not refer only to the standard definition of the term, focused on “information technology” systems and equipment. Daft notes that organizational technologies can include other “tools, techniques, and actions used to transform inputs into outputs.”³⁹⁶ In the case of emergency management, this can be the emergency plans, procedures, training, and exercises implemented to build preparedness within an organization. Risk mitigation and consequence management contains numerous organizational technologies similar across emergency management phases and functions and many dissimilar ones.

³⁹⁶ Daft, *Organization Theory & Design*, 22.

Much of the design of an organization is focused on its core technology.³⁹⁷ The core technology is the tools, techniques, work processes, and systems focused on the organization's purpose and mission.³⁹⁸ Most important is that the core technology involves converting raw materials using core work processes to create products and services.³⁹⁹ Numerous techniques are used to examine core technology, including the raw materials used as inputs, the level of mechanization in the production process, the variability in work activities, the dependencies between workflow tasks, and the number of outputs produced as products or services.⁴⁰⁰ Conversely, non-core technology is focused on supporting or "enabling" functions within an organization.⁴⁰¹ These functions may be human resources, financial services, legal, or other supporting activities that do not directly relate to the organization's mission. These non-core functions may be contained within a risk mitigation and consequence management organization in larger organizations or provided by another specialized agency within the jurisdiction (i.e., Legal Department, Purchasing Department, Information Technology Department).

Numerous approaches are utilized to determine if technology is more mechanistic or organic. Woodward's research on manufacturing firms in 1958 led to the development

³⁹⁷ Wanda J. Orlikowski, "The Duality of Technology: Rethinking the Concept of Technology in Organizations," *Organization Science* 3, no. 3 (August 1992): 423, <https://doi.org/10.1287/orsc.3.3.398>.

³⁹⁸ Perrow, "A Framework for the Comparative Analysis of Organizations," 194–95. For example, within a comprehensive emergency management organization, the activities directly related to mitigation, preparedness, response, and recovery would be considered core technology.

³⁹⁹ Daft, *Organization Theory & Design*, 316.

⁴⁰⁰ Linda Argote, "Input Uncertainty and Organizational Coordination in Hospital Emergency Units," *Administrative Science Quarterly* 27, no. 3 (September 1982): 433, <https://doi.org/10.2307/2392320>; Perrow, *Organizational Analysis*, 75–91; William A. Rushing, "Hardness of Material as Related to Division of Labor in Manufacturing Industries," *Administrative Science Quarterly* 13, no. 2 (September 1968): 244–245, <https://doi.org/10.2307/2391453>; Lawrence B. Mohr, "Organizational Technology and Organizational Structure," *Administrative Science Quarterly* 16, no. 4 (December 1971): 454–56, <https://doi.org/10.2307/2391764>; David J. Hickson, D. S. Pugh, and Diana C. Pheysey, "Operations Technology and Organization Structure: An Empirical Reappraisal," *Administrative Science Quarterly* 14, no. 3 (September 1969): 395–96, <https://doi.org/10.2307/2391134>; Joan Woodward, *Industrial Organization: Theory and Practice*, 2nd ed. (London: Oxford University Press, 1980), 50–80; Woodward, *Management and Technology*; Thompson, *Organizations in Action*, 51–65; and Edward Harvey, "Technology and the Structure of Organizations," *American Sociological Review* 33, no. 2 (April 1968): 256–59, <https://doi.org/10.2307/2092391>.

⁴⁰¹ Daft, *Organization Theory & Design*, 317.

of a scale focused on the technical complexity of manufacturing processes.⁴⁰² Those processes with high levels of machines performing the work were high on the technical complexity scale. At the same time, those that required more intervention from workers were low on technical complexity. When considering the types of activities risk mitigation and consequence management organizations are involved in, much of the work is highly customized and would be similar to what might be found in “small-batch” or unit production.⁴⁰³ Woodward’s research found that organic structures were more beneficial for the customized work necessary in small-batch production due to the high level of changing conditions.⁴⁰⁴ Her research has been replicated since with similar findings.⁴⁰⁵ While government risk mitigation and consequence management organizations are not the same as manufacturing companies, they often create products for stakeholders and constituents. This research on technical complexity demonstrates the need to align technology, organization structure, and strategy for optimal performance.⁴⁰⁶

Government risk mitigation and consequence management organizations contain primarily service-oriented core technology. The primary difference between service technology versus manufacturing technology is the output.⁴⁰⁷ Service technology has a highly intangible output that does not exist until the customer or constituent requests it.⁴⁰⁸ Most importantly, service technology is highly labor and knowledge-intensive, requiring significant employee involvement to maintain the interface between the organization and

⁴⁰² Woodward, *Industrial Organization*, 40–44; and Woodward, *Management and Technology*.

⁴⁰³ Daft, *Organization Theory & Design*, 318–19. For instance, emergency management staff are heavily involved in the customization of plans, training, and exercises within their jurisdiction. There is minimal “large-batch” or mass production of standardized products and services within risk mitigation and consequence management.

⁴⁰⁴ Woodward, *Industrial Organization*, 40–44; and Woodward, *Management and Technology*.

⁴⁰⁵ William L. Zwermer, *New Perspectives on Organization Theory: An Empirical Reconsideration of the Marxian and Classical Analyses* (Westport, CT: Greenwood Publishing Corporation, 1970), 95–122, <http://archive.org/details/newperspectiveso0000zwer>; and Harvey, “Technology and the Structure of Organizations,” 254–56.

⁴⁰⁶ Dean M. Schroeder, Steven W. Congden, and C. Gopinath, “Linking Competitive Strategy and Manufacturing Process Technology,” *Journal of Management Studies* 32, no. 2 (March 1995): 185–86, <https://doi.org/10.1111/j.1467-6486.1995.tb00339.x>.

⁴⁰⁷ Daft, *Organization Theory & Design*, 332.

⁴⁰⁸ Daft, 332.

its stakeholders.⁴⁰⁹ Evaluating quality for service technology is more challenging, as it cannot be directly measured.⁴¹⁰ Service technology typically requires the delivery of the service when the customer desires it.⁴¹¹ Finally, when utilizing service technology, organizations must be close to where the customer is being served.⁴¹²

The technology contingency factor influences some structural dimensions more than others. For example, service technology's high reliance on customer service requires more decision-making flexibility. Because of this, service structures typically perform better with decentralized designs and less formalization.⁴¹³ Unlike mechanistic activities, employees working with organic technologies need greater skills to work with constituents

⁴⁰⁹ David E. Bowen, Caren Siehl, and Benjamin Schneider, "A Framework for Analyzing Customer Service Orientations in Manufacturing," *Academy of Management Review* 14, no. 1 (January 1989): 76–77, <https://doi.org/10.2307/258192>; Peter K. Mills and Newton Margulies, "Toward a Core Typology of Service Organizations," *Academy of Management Review* 5, no. 2 (April 1980): 260, <https://doi.org/10.2307/257435>; and Peter K. Mills and Dennis J. Moberg, "Perspectives on the Technology of Service Operations," *Academy of Management Review* 7, no. 3 (July 1982): 469–71, <https://doi.org/10.2307/257339>. For government risk mitigation and consequence management organizations, stakeholders can include residents, businesses, and community non-profits.

⁴¹⁰ Daft, *Organization Theory & Design*, 333; Eric Saylor, "Quantifying a Negative: How Homeland Security Adds Value" (master's thesis, Naval Postgraduate School, 2015), 2, <https://hdl.handle.net/10945/47862>; and Sirney, "Does Theory Matter?," 16. The perception of quality is even more challenging with risk mitigation and consequence management organizations as it is difficult to determine how well a jurisdiction is prepared or has responded to a crisis.

⁴¹¹ Daft, *Organization Theory & Design*, 333. This is especially pertinent within the response and recovery phases of emergency management as constituents do not want to wait in order to receive critical life-saving services.

⁴¹² Daft, 333; and Richard B. Chase and David A. Tansik, "The Customer Contact Model for Organization Design," *Management Science* 29, no. 9 (September 1983): 1048, <https://doi.org/10.1287/mnsc.29.9.1037>. This is demonstrated by the distribution of risk mitigation and consequence management organizations throughout the country at the local, state, and regional levels in order to provide rapid and customized service for constituents.

⁴¹³ Daft, *Organization Theory & Design*, 336; and Collier and Lakoff, "Distributed Preparedness," 7–8, 24–26. In the risk mitigation and consequence management space, this is demonstrated in the significant decentralization in activities throughout each level of government.

on their specific problems.⁴¹⁴ Furthermore, studies have identified that the common traits of economies of scale and specialization found in manufacturing technology do not translate well to the needs of service technology.

Non-core technologies like human resources, legal, financial services, and others operate very similarly to core service technologies. Rather than providing services to customers, they provide services to the organization's technical core. Depending on the level of government, similar activities may be deemed non-core or core technologies.⁴¹⁵ Designation of a technology as core or non-core could be attributed to the organization's role in the more extensive "shared governance" model of risk mitigation and consequence management, with some levels of government primarily oriented towards grantmaking and policymaking activities.⁴¹⁶ Regardless, non-core technologies are essential in government risk mitigation and consequence management organizations and may be found within more extensive emergency management and homeland security agencies or other departments specializing in non-core processes elsewhere in the jurisdiction.

⁴¹⁴ David E. Bowen and Edward E. Lawler, "The Empowerment of Service Workers: What, Why, How, and When," *Sloan Management Review* 33, no. 3 (Spring 1992): 32, 36, <https://sloanreview.mit.edu/article/the-empowerment-of-service-workers-what-why-how-and-when/>; Gregory B. Northcraft and Richard B. Chase, "Managing Service Demand at the Point of Delivery," *Academy of Management Review* 10, no. 1 (January 1985): 74–75, <https://doi.org/10.2307/258213>; Roger W. Schmenner, "How Can Service Businesses Survive and Prosper?," *Sloan Management Review* 27, no. 3 (Spring 1986): 25, <https://sloanreview.mit.edu/article/how-can-service-businesses-survive-and-prosper/>; Jensen and Kirkpatrick, "Local Emergency Management and Comprehensive Emergency Management (CEM)," 2–3, 9–10; Canton, *Emergency Management*, 81, 90–91; Jessica Jensen et al., "The County Emergency Manager's Role in Recovery," *International Journal of Mass Emergencies and Disasters* 32, no. 1 (March 2014): 159, <https://doi.org/10.1177/028072701403200107>; National Research Council, *Disaster Resilience*, 29; Carol L. Cwiak, "Framing Higher Education and Disciplinary Efforts Through a Professionalization Lens," *Journal of Emergency Management* 17, no. 1 (2019): 65–66, <https://doi.org/10.5055/jem.2019.0398>; National Governors' Association, *Comprehensive Emergency Management*, 7, 36; National Governors' Association, *State Comprehensive Emergency Management*, 112–14, 132–33; and McEntire, "Local Emergency Management Organizations," 170. In the risk mitigation and consequence management space, this is demonstrated through the promotion of highly skilled positions like professional emergency managers. Professional emergency managers in agencies with limited staff are expected to handle a great variety of tasks rather than separating them into small jobs.

⁴¹⁵ For instance, at the federal level, the provision of preparedness grants for state and local governments is a core mission of FEMA. However, at the local level, grants management activities are typically seen as a noncore enabling function for a local emergency management agency.

⁴¹⁶ May and Williams, *Disaster Policy Implementation*, 6–7; Waugh, *Living with Hazards, Dealing with Disasters*, 258–59; and Drabek, *Professional Emergency Manager*, 26–27.

Perrow's 1967 framework organized technologies into four categories based on task variety and the analyzability of work activities.⁴¹⁷ The first dimension, task variety, focuses on the number of exceptions that occur in the work activity.⁴¹⁸ A high level of task variety means the activities are not identical each time they are performed and encounter many unexpected situations which must be dealt with individually.⁴¹⁹ Conversely, a low level of task variety would feature highly repetitive activities performed the same way each time.⁴²⁰

The second dimension of Perrow's framework focuses on the analyzability of activities. Analyzability is the ability to break down work processes into specific steps and procedures that could be repeated easily by another person or machine.⁴²¹ Solutions are easy to create when problems arise in highly analyzable work.⁴²² On the other hand, solutions in unanalyzable activities frequently require expert judgment, experience, and wisdom.⁴²³ Perrow's framework is shown in Figure 12.

⁴¹⁷ Perrow, "A Framework for the Comparative Analysis of Organizations," 195–96; and Perrow, *Organizational Analysis*, 75–80.

⁴¹⁸ Daft, *Organization Theory & Design*, 338.

⁴¹⁹ Brian T. Pentland, "Sequential Variety in Work Processes," *Organization Science* 14, no. 5 (2003): 530, <https://doi.org/10.1287/orsc.14.5.528.16760>. Many activities in the response phase of emergency management encounter a great level of task variety. Planning an evacuation of a neighborhood is dependent on many novel external factors which could not be expected.

⁴²⁰ Daft, *Organization Theory & Design*, 338. Conducting a preparedness training for a community group would have fairly low task variety, due to the repetitive nature of the activity each time it is performed.

⁴²¹ Daft, 338.

⁴²² Daft, 338. For example, processing mitigation grants can be easily documented in a procedure that includes recommendations when unexpected situations arise.

⁴²³ Daft, 338. For example, activities during emergency response will typically encounter problems that are difficult to identify solutions to.

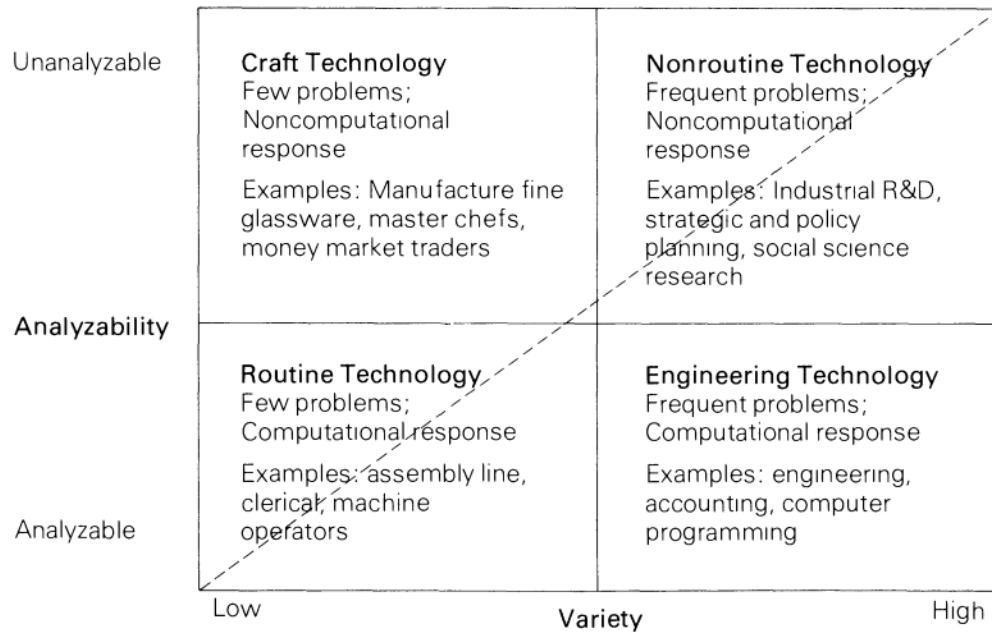


Figure 12. Perrow's Organizational Technologies Framework⁴²⁴

With variety on the X-axis and analyzability on the Y-axis, Perrow divided departmental technologies into four categories: routine, craft, engineering, and nonroutine.⁴²⁵ Routine technologies have minimal variety and are highly analyzable.⁴²⁶ These types of tasks are highly formalized and standardized.⁴²⁷ Craft technologies also have little task variety but are not as analyzable. The need for experience and judgment would require extensive training and practice in this area.⁴²⁸ Shifting to technologies that have more variety, engineering technologies encounter significant variety but are highly analyzable.⁴²⁹ In the case of engineering technologies, a body of knowledge can assist

⁴²⁴ Source: Richard L. Daft and Norman B. MacIntosh, "A Tentative Exploration into the Amount and Equivocality of Information Processing in Organizational Work Units," *Administrative Science Quarterly* 26, no. 2 (June 1981): 209, <https://doi.org/10.2307/2392469>.

⁴²⁵ Daft, *Organization Theory & Design*, 338.

⁴²⁶ Daft, 338.

⁴²⁷ Daft, 338.

⁴²⁸ Daft, 339. Examples could include operating a 24/7 watch center for a state or federal emergency management organization where the constant stream of unique activities require significant experience and intuition.

⁴²⁹ Daft, 339.

employees in identifying solutions to the variety of problems they will be presented with.⁴³⁰ Nonroutine technologies encompass activities with significant task variety and low analyzability.⁴³¹ These tasks encounter many issues that need to be considered and resolved without an established body of knowledge.⁴³²

Daft simplifies Perrow's framework into a single dimension comparing routine versus nonroutine technology as analyzability and variety are frequently correlated.⁴³³ This simple continuum allows an organization to leverage structural design to improve performance. Research has demonstrated the link between departmental performance, technology, and design.⁴³⁴ Routine technologies are most associated with mechanistic design, with significant standardization, rules, and procedures implemented.⁴³⁵ Policies and decision-making for these types of activities are highly centralized.⁴³⁶ Employees operating in these repetitive and simple clerical tasks do not require significant education or experience.⁴³⁷ In addition, the lack of complex tasks reduces the frequency of interaction between employees and supervisors, allowing for a much wider span of

⁴³⁰ Daft, 339. In emergency management, the implementation of emergency response activities based on pre-existing plans and procedures are good examples of engineering technologies. For instance, the activation of an emergency shelter in a pre-identified location using a written procedure would likely be considered in this category of technologies.

⁴³¹ Daft, 339. During the response or recovery phases of emergency management, work conducted to resolve unexpected situations where no plan exists could be considered nonroutine. The development of a pre-disaster recovery plan could be considered nonroutine due to the many issues that would be considered and resolved without an established body of knowledge.

⁴³² Daft, 340.

⁴³³ Daft, 340; and Nelson P. Repenning, Don Kieffer, and James Repenning, "A New Approach to Designing Work," *MIT Sloan Management Review* 59, no. 2 (Winter 2018): 31, <https://sloanreview.mit.edu/article/a-new-approach-to-designing-work/>.

⁴³⁴ Gresov, "Exploring Fit and Misfit," 447–50; and Goodhue and Thompson, "Task-Technology Fit," 228–31.

⁴³⁵ Daft, *Organization Theory & Design*, 341–42. For example, this could be the activities conducted at the federal level to process preparedness and post-disaster grants.

⁴³⁶ Gresov, "Exploring Fit and Misfit," 436; A. J. Grimes and S. M. Klein, "The Technological Imperative: The Relative Impact of Task Unit, Modal Technology, and Hierarchy on Structure," *Academy of Management Journal* 16, no. 4 (December 1973): 584, 595–597, <https://doi.org/10.2307/254692>; Lawrence G. Hrebiniak, "Job Technology, Supervision, and Work-Group Structure," *Administrative Science Quarterly* 19, no. 3 (September 1974): 408, <https://doi.org/10.2307/2391980>; and Jeffrey Pfeffer, *Organizational Design* (Arlington Heights, IL: AHM Publishing Company, 1978), 1–26, <http://archive.org/details/organizationalde0000pfef>.

⁴³⁷ Daft, *Organization Theory & Design*, 342.

control.⁴³⁸ Minimal task variety in routine technologies limits the need for formal horizontal communications, instead seeing more frequent written forms of vertical communication.⁴³⁹

Nonroutine technologies are the most organic design on the opposite end of the continuum.⁴⁴⁰ Nonroutine technologies result in structures that are less standardized and have minimal formalization.⁴⁴¹ Structures are decentralized to the maximum, enabling employees to use discretion in the best approaches to resolve problems.⁴⁴² Formal education and experience become essential due to the nonroutine level of activities that will be encountered.⁴⁴³ These activities result in more scenarios where supervisors must

⁴³⁸ Daft, 342.

⁴³⁹ Van de Ven and Ferry, *Measuring and Assessing Organizations*, 158, 372; W. Alan Randolph, "Matching Technology and the Design of Organization Units," *California Management Review* 23, no. 4 (Summer 1981): 43–44, <https://doi.org/10.2307/41164929>; Richard L. Daft and Robert H. Lengel, *Information Richness. A New Approach to Managerial Behavior and Organization Design*, Report No. TR-ONR-DG-02 (College Station, TX: Texas A&M University, 1983), 22–23, <https://doi.org/10.21236/ada128980>; Richard L. Daft and Norman B. MacIntosh, "A New Approach to Design and Use of Management Information," *California Management Review* 21, no. 1 (Fall 1978): 90, <https://doi.org/10.2307/41165297>; Daft and MacIntosh, "Tentative Exploration," 207, 220–22; W. Alan Randolph, "Organization Technology and the Media and Purpose Dimensions of Organization Communications," *Journal of Business Research* 6, no. 3 (August 1978): 252–57, [https://doi.org/10.1016/0148-2963\(78\)90026-7](https://doi.org/10.1016/0148-2963(78)90026-7); Argote, "Input Uncertainty and Organizational Coordination in Hospital Emergency Units," 421, 424, 427; and Andrew H. Van de Ven and André L. Delbecq, "A Task Contingent Model of Work-Unit Structure," *Administrative Science Quarterly* 19, no. 2 (June 1974): 184–85, <https://doi.org/10.2307/2393888>.

⁴⁴⁰ Daft, *Organization Theory & Design*, 341. For example, the high variety of novel situations that arise in a crisis result in nonroutine tasks during incident management.

⁴⁴¹ Gresov, "Exploring Fit and Misfit," 432–33, 447–50; Charles A. Glisson, "Dependence of Technological Routinization on Structural Variables in Human Service Organizations," *Administrative Science Quarterly* 23, no. 3 (September 1978): 391–93, <https://doi.org/10.2307/2392416>; and Jerald Hage and Michael Aiken, "Routine Technology, Social Structure, and Organization Goals," *Administrative Science Quarterly* 14, no. 3 (September 1969): 371–72, 375, <https://doi.org/10.2307/2391132>.

⁴⁴² Patrick E. Connor, *Organizations: Theory and Design* (Chicago: Science Research Associates, 1980), 182–83, <http://archive.org/details/organizationsthe0000conn>; and Daft and MacIntosh, "Tentative Exploration," 218–22.

⁴⁴³ Connor, *Organizations*, 182–83; Daft and MacIntosh, "Tentative Exploration," 218–22; Jensen and Kirkpatrick, "Local Emergency Management and Comprehensive Emergency Management (CEM)," 2–3, 9–10; Canton, *Emergency Management*, 90–91; Jensen et al., "The County Emergency Manager's Role in Recovery," 159; National Research Council, *Disaster Resilience*, 29; Cwiak, "Framing Higher Education and Disciplinary Efforts Through a Professionalization Lens," 65–66; National Governors' Association, *Comprehensive Emergency Management*, 7, 36; National Governors' Association, *State Comprehensive Emergency Management*, 112–14, 132–33; and McEntire, "Local Emergency Management Organizations," 170. Many scholars in the emergency management space recommend formal education and experience for professional emergency managers due to the nonroutine level of activities they will encounter during a crisis.

coordinate and share information with employees, requiring a more narrow span of control.⁴⁴⁴ Nonroutine technologies also support greater horizontal communications, primarily through face-to-face group meetings.⁴⁴⁵ Communication is also more frequent as variations in tasks occur.⁴⁴⁶

Between routine and nonroutine technologies, engineering and craft technologies contain more moderate formalization and centralization; however, engineering relies more heavily on the structural techniques found in mechanistic designs due to the need for technical training.⁴⁴⁷ Craft technologies could be considered primarily organic in design, as employees must have substantial experience to respond to less analyzable tasks.⁴⁴⁸ Categorizing and designing departments based on their technology type is a way to improve organizational effectiveness by aligning the structure with the most optimal communication characteristics.⁴⁴⁹

⁴⁴⁴ Paul D. Collins and Frank Hull, "Technology and Span of Control: Woodward Revisited," *Journal of Management Studies* 23, no. 2 (March 1986): 147, 158–60, <https://doi.org/10.1111/j.1467-6486.1986.tb00417.x>; Gerald D. Bell, "The Influence of Technological Components of Work upon Management Control," *Academy of Management Journal* 8, no. 2 (June 1965): 132, <https://doi.org/10.2307/255218>; and Blau and Schoenherr, *The Structure of Organizations*, 193, 198, 200.

⁴⁴⁵ Van de Ven and Ferry, *Measuring and Assessing Organizations*, 372; Randolph, "Matching Technology," 44–45, 47; Daft and Lengel, *Information Richness*, 22–24, 45; Daft and MacIntosh, "New Approach to Design," 90; Daft and MacIntosh, "Tentative Exploration," 207, 220–22; Randolph, "Organization Technology," 252–57; Argote, "Input Uncertainty and Organizational Coordination in Hospital Emergency Units," 421, 424, 427; and Van de Ven and Delbecq, "Task Contingent Model," 184–85.

⁴⁴⁶ Randolph, "Matching Technology," 43, 45–47; Daft and MacIntosh, "Tentative Exploration," 221; and Michael L. Tushman, "Work Characteristics and Subunit Communication Structure: A Contingency Analysis," *Administrative Science Quarterly* 24, no. 1 (March 1979): 92–95, <https://doi.org/10.2307/2989877>.

⁴⁴⁷ Daft, *Organization Theory & Design*, 341. For example, when executing a predeveloped emergency plan, an employee is likely to have some level of decision authority due to their technical training.

⁴⁴⁸ Daft, 341–42. The watch officer in the emergency operations center may not be required to have the level of formal education but instead would be expected to have significant experience to deal with the less analyzable tasks that they are presented with. With this experience, they likely will also gain moderate decision authority to respond to issues.

⁴⁴⁹ Leatt and Schneck, "Criteria for Grouping Nursing Subunits," 162–64; Keller, "Technology-Information Processing Fit and the Performance of R&D Project Groups," 175–77; Gresov, "Exploring Fit and Misfit," 447–50; and Michael L. Tushman, "Technical Communication in R & D Laboratories: The Impact of Project Work Characteristics," *Academy of Management Journal* 21, no. 4 (December 1978): 642–43, <https://doi.org/10.2307/255704>.

Technology also affects organization design due to interdependence.⁴⁵⁰ Interdependence is primarily concerned with the degree to which departments need each other to complete their tasks.⁴⁵¹ This reliance can include materials, information, or resources.⁴⁵² Organizations with high levels of interdependence frequently interface with other departments to support their overall purpose.⁴⁵³ Low interdependence occurs when departments can work independently without significant interaction with others.⁴⁵⁴

Thompson's 1967 research identified three primary types of interdependence that impact an organization's structural design: pooled, sequential, and reciprocal.⁴⁵⁵ Pooled interdependence has minimal connection between the organization's units.⁴⁵⁶ While all departments contribute to the organization's general purpose and utilize similar pooled resources like finances and enabling departments, their workflows do not interact.⁴⁵⁷ This model lacks communication between units, and coordination is typically driven by standardization and formalization.⁴⁵⁸ This model also may lead to a more divisional organizational structure.⁴⁵⁹ Thompson uses the term "mediating technology" for this

⁴⁵⁰ Daft, *Organization Theory & Design*, 343.

⁴⁵¹ Daft, 343.

⁴⁵² Daft, 343.

⁴⁵³ Daft, 343; McEntire, "Local Emergency Management Organizations," 172–73; Canton, *Emergency Management*, 113–14; Drabek, *Professional Emergency Manager*, 154; Stevenson and Hayman, *Local Government Disaster Protection*, 37; and Hu, Sadiq, and Kapucu, "Multiplexity in Conceptualizing Network Effectiveness," 8. Risk mitigation and consequence management organizations are typically categorized with high interdependence due to the level of reliance they have on other departments within their jurisdiction. Typically organizations like emergency management agencies are much smaller than other departments within their jurisdiction, as they primarily exist to integrate and coordinate the expertise and resources of those other departments.

⁴⁵⁴ Daft, *Organization Theory & Design*, 343. This is demonstrated frequently internally within emergency management agencies. For example, the mitigation team does not require frequent coordination of resources, support, or expertise with the response team. However, during a disaster recovery effort, the recovery team may frequently coordinate with mitigation staff members to promote resilient reconstruction.

⁴⁵⁵ Thompson, *Organizations in Action*, 54–55.

⁴⁵⁶ Daft, *Organization Theory & Design*, 344.

⁴⁵⁷ Daft, 344.

⁴⁵⁸ Daft, 344.

⁴⁵⁹ Daft, 344. In emergency management agencies, workflows in the response unit are not likely to interact with those in the mitigation unit. The development of an active shooter exercise isn't likely to require any involvement of the staff processing disaster reimbursement paperwork.

category as it is intended to link different entities from the external environment without much need to have units working together in the organization.⁴⁶⁰ Each interdependence model is connected to the level of coordination required in Figure 13.

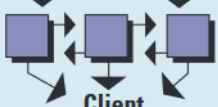
Form of Interdependence	Demands on Horizontal Communication, Decision Making	Type of Coordination Required	Priority for Locating Units Close Together
Pooled (bank)  Clients	Low communication	Standardization, rules, procedures Divisional structure	Low
Sequential (assembly line)  Client	Medium communication	Plans, schedules, feedback Task forces	Medium
Reciprocal (hospital)  Client	High communication	Mutual adjustment, relational coordination, teamwork Horizontal structure	High

Figure 13. Interdependence Models⁴⁶¹

Sequential interdependence requires a much higher level of connection between departments.⁴⁶² In this type, the performance of a service requires multiple departments to operate in sequence, with the outputs of one department becoming inputs of another.⁴⁶³

⁴⁶⁰ Thompson, *Organizations in Action*, 16–17.

⁴⁶¹ Source: Daft, *Organization Theory & Design*, 344.

⁴⁶² Daft, 344.

⁴⁶³ Daft, 344.

Issues in one department can result in delays for subsequent departments. To combat this challenge, horizontal linking mechanisms like those discussed in this chapter's "Designing for Fit" section are frequently used to ensure workflows transition from one department to another seamlessly.⁴⁶⁴ Thompson calls this "long-linked technology" as workflows require significant integration between the inputs and outputs of each step.⁴⁶⁵ This type of technology requires more significant scheduling, planning, and coordination than pooled interdependence.⁴⁶⁶

Reciprocal interdependence requires the highest level of coordination between departments.⁴⁶⁷ In this type, departments frequently exchange resources and information with each other using mutual adjustment.⁴⁶⁸ Thompson refers to reciprocal interdependence as "intensive technology" due to the intimate and frequent coordination required between departments.⁴⁶⁹ Organizations supporting strong horizontal communication between reciprocal departments will likely encounter improved performance.⁴⁷⁰

⁴⁶⁴ Daft, 345. Within emergency management agencies, there are some examples of sequential interdependence although they frequently are encountered within one specific internal department or are found between the emergency management organization and other external departments. For instance, to conduct a large disaster exercise, the exercise unit must wait for the applicable plans, training, and equipment to be implemented by other departments in their agency prior to moving forward with their project. In addition, there is frequent sequential interdependence with other non-emergency management departments. When acquiring a piece of emergency management equipment, there may be steps in the acquisition process that involve an outside procurement or financial services department.

⁴⁶⁵ Thompson, *Organizations in Action*, 15–16, 40–42.

⁴⁶⁶ Daft, *Organization Theory & Design*, 345.

⁴⁶⁷ Daft, 345.

⁴⁶⁸ Daft, 345. For instance, the development of an emergency plan requires substantial reciprocal interdependence between departments outside of the emergency management organization. The incident management process during emergencies could also fit within this category, where resources and information are constantly being passed between organizations in order to effectively provide emergency services.

⁴⁶⁹ Thompson, *Organizations in Action*, 17–18.

⁴⁷⁰ Daft, *Organization Theory & Design*, 346; and Murray R. Barrick et al., "The Moderating Role of Top Management Team Interdependence: Implications for Real Teams and Working Groups," *Academy of Management Journal* 50, no. 3 (June 2007): 555, <https://doi.org/10.5465/amj.2007.25525781>. During emergency response, the face-to-face coordination and decision making enabled by establishing task forces and other ad hoc structures can support the necessary coordination needed to resolve problems in highly interdependent systems

Organizations are likely to have a mixture of all three types of interdependence.⁴⁷¹ When considering how the technology contingency factor impacts structural dimensions, it is crucial to prioritize design based on the level of interdependence complexity.⁴⁷² For example, reciprocal interdependent activities should be organized first to enable close grouping and close communications.⁴⁷³ In addition, staff and resources that are highly reciprocal should report to the same manager.⁴⁷⁴ Without strong coordination between reciprocal departments, performance will suffer.⁴⁷⁵ Horizontal linkage mechanisms should be established to strengthen these relationships.⁴⁷⁶ After arranging the organization's design around reciprocal interdependence, sequential and pooled interdependence can be considered to keep communications channels short within key departmental relationships.⁴⁷⁷

⁴⁷¹ Gresov, "Exploring Fit and Misfit," 506–7; Andrew H. Van De Ven, Andre L. Delbecq, and Richard Koenig, "Determinants of Coordination Modes within Organizations," *American Sociological Review* 41, no. 2 (April 1976): 329–32, <https://doi.org/10.2307/2094477>; Argote, "Input Uncertainty and Organizational Coordination in Hospital Emergency Units," 433; Jack K. Ito and Richard B. Peterson, "Effects of Task Difficulty and Interunit Interdependence on Information Processing Systems," *Academy of Management Journal* 29, no. 1 (March 1986): 141, <https://doi.org/10.2307/255865>; and Joseph L. C. Cheng, "Interdependence and Coordination in Organizations: A Role-System Analysis," *Academy of Management Journal* 26, no. 1 (March 1983): 157–58, 160–61, <https://doi.org/10.2307/256142>.

⁴⁷² Daft, *Organization Theory & Design*, 347.

⁴⁷³ Daft, 347.

⁴⁷⁴ Daft, 347; New York State Division of Homeland Security and Emergency Services, *2021–2023 Strategic Plan* (Albany, NY: New York State Division of Homeland Security and Emergency Services, 2021), 5, 7, https://www.dhses.ny.gov/system/files/documents/2022/02/dhses-strategic-plan_3_0.pdf; and Laura H. Hogshead, "Permanent Staffing Recommendations for the Office of Recovery and Resiliency" (official memorandum, Durham, NC: Office of Recovery and Resiliency, 2020), <https://www.ncleg.gov/Files/Library/agency/dps14958.pdf>. Emergency management agencies typically group departments by emergency management phase (i.e., mitigation, preparedness, response, recovery). Staff working within the mitigation unit likely have highly interdependent workflows. In addition, some agencies have identified other groupings of interdependence, merging response and preparedness together and merging mitigation and recovery together, simply due to the logical connections between their workflows.

⁴⁷⁵ Daft, *Organization Theory & Design*, 347. This is particularly challenging for risk mitigation and consequence management organizations as they frequently have high reciprocal interdependence with other agencies within the jurisdiction. For example, consider the close coordination that is required between an emergency management agency's mitigation team and the engineering, community planning, and code enforcement departments.

⁴⁷⁶ Daft, 347; and Drabek, *Professional Emergency Manager*, 179.

⁴⁷⁷ Daft, *Organization Theory & Design*, 347.

There are several drivers of government risk mitigation and consequence management organizational technologies. First, the EMAP Emergency Management Standard provides a full scope of the activities a jurisdiction should engage in to provide comprehensive emergency management functions.⁴⁷⁸ The EMAP Emergency Management Standard includes tools, techniques, and actions across all four phases, including emergency management plans, training, exercises, mitigation programs, and recovery activities.⁴⁷⁹ While the EMAP Emergency Management Standard is an excellent guide to the various risk mitigation and consequence management technologies in which jurisdictions may be engaged, only 108 emergency management agencies across the country have met the standard.⁴⁸⁰ Others may not conduct the full suite of activities within the standard.

Second, available resources will also affect the organizational technologies of the jurisdiction. Without the necessary funding, staff, or resources to conduct all activities within the EMAP Emergency Management Standard, it is possible that some technologies will not be utilized.⁴⁸¹ Third, the jurisdiction's hazards and threats are also a contributor, as they will drive the types of technologies used and the frequency of use. For example, suppose a disaster impacts the jurisdiction. In that case, they will likely be involved in using technologies like the distribution of supplies, incident action planning, and establishing facilities like emergency shelters.⁴⁸² Without a disaster impact, these technologies will unlikely be engaged unless the jurisdiction conducts preparedness exercises.

⁴⁷⁸ Emergency Management Accreditation Program, *Emergency Management Standard*, 5.

⁴⁷⁹ Emergency Management Accreditation Program, *Emergency Management Standard*.

⁴⁸⁰ "Who Is Accredited?," Emergency Management Accreditation Program, accessed July 2, 2023, <https://emap.org/who-is-accredited/>.

⁴⁸¹ Lucas, "Analysis of Baseline Assessments," 47–48; and Jessica Jensen and Marcelo Ferreira, "An Exploration of Local Emergency Management Program Accreditation Pursuit," *Journal of Homeland Security and Emergency Management*, 2023, 14–15, <https://doi.org/10.1515/jhsem-2022-0019>.

⁴⁸² Nezih Altay and Walter G. Green, "OR/MS Research in Disaster Operations Management," *European Journal of Operational Research* 175, no. 1 (2006): 481, <https://doi.org/10.1016/j.ejor.2005.05.016>.

The technology contingency factor can lead to a mechanistic or organic structure in many ways. Risk mitigation and consequence management organizations have a predominantly service-oriented core technology. Core service technologies will likely encounter better performance with an organic structure designed to provide flexibility for customer service.⁴⁸³ Even risk mitigation and consequence management organizations with some level of manufacturing-style technology to create key deliverables (e.g., emergency plans) for constituents are likely contained within the “small-batch” production style of technical complexity. Again, this type of technology is better suited for organic structural designs.⁴⁸⁴

All four phases of emergency management have some mixture of routine and nonroutine technologies. If assessing the organizational fit using this analytical framework at the jurisdiction or agency level, an organic structure is likely optimal to handle the great variety and the significant number of non-analyzable activities that could be encountered.⁴⁸⁵ However, if assessing the fit of internal departments, there may be greater consistency in technology. Mitigation, preparedness, and recovery units may have more routine technologies that would support a mechanistic design due to the level of analyzability and low variety of tasks.⁴⁸⁶ On the other hand, the nonroutine-oriented response section of the agency would benefit from an organic design as many tasks would require expertise and judgment that could not be documented in procedures.⁴⁸⁷ Finally, organizations with substantial reciprocal or sequential interdependence may benefit from organic structures or horizontal linking mechanisms.⁴⁸⁸ Agencies with primarily pooled interdependence may see an optimal fit with a mechanistic structure.⁴⁸⁹ The diverse sets of technology found in risk mitigation and consequence management make identifying an

⁴⁸³ Daft, *Organization Theory & Design*, 336.

⁴⁸⁴ Woodward, *Industrial Organization*, 40–44; and Woodward, *Management and Technology*.

⁴⁸⁵ Daft, *Organization Theory & Design*, 341–42.

⁴⁸⁶ Daft, 341–42.

⁴⁸⁷ Daft, 341–42.

⁴⁸⁸ Daft, 345.

⁴⁸⁹ Daft, 344.

optimal design orientation extremely challenging. Table 5 displays the optimal risk mitigation and consequence management design orientations and characteristics for the technology contingency factor.

Table 5. Technology Contingency Factor Orientations and Characteristics

Emergency Management Phase	Level of Analysis	Optimal Orientation	Design Characteristics
Mitigation	Group or Agency	Mechanistic	“Manufacturing” Technology
Preparedness	Group or Agency	Mechanistic	“Manufacturing” Technology
Response	Group or Agency	Organic	“Service” Technology
Recovery	Group or Agency	Mechanistic	“Manufacturing” Technology
Multiple (Consolidated)	Group, Agency, or Jurisdiction	Organic	“Service” Technology

3. Environment

The environment is a vital contingency factor for risk mitigation and consequence management organizations, and according to Daft, “includes all elements outside the boundary of the organization.”⁴⁹⁰ Frequently the term “organizational environment” is utilized to narrow the environment to only the elements that have the potential to impact the organization.⁴⁹¹ The organizational environment differs for each organization depending on what level the analytical framework is being used. At the agency level, the environment typically consists of external elements, including other government agencies and departments, the private sector, nonprofits, constituents, elected leaders, suppliers,

⁴⁹⁰ Daft, 22.

⁴⁹¹ Daft, 148.

vendors, adversaries, and other external organizations.⁴⁹² But, when the framework is used at the jurisdiction level and considers the entire government structure, the organizational environment grows considerably, incorporating potential influencers for the jurisdiction's non-risk mitigation and consequence management departments.⁴⁹³

Government risk mitigation and consequence management organizations operate in numerous domains ranging from incident management to constructing natural hazard mitigation projects. These domains outline the organization's placement in the overall environment and provide insight into the types of other organizations it will interact with.⁴⁹⁴ Daft outlines a construct to organize and group similar external organizations using eleven sectors: industry, raw materials, market, human resources, international, government, natural, sociocultural, economic conditions, technology, and financial resources.⁴⁹⁵ Although Daft's construct serves as an approach for any organization to group common environmental elements, some sectors are more applicable to risk mitigation and consequence management organizations than others.

Daft further categorizes the sectors into a task environment and a general environment.⁴⁹⁶ The task environment incorporates sectors that influence an organization's ability to accomplish its goals, including the industry, raw materials, human resources, and international sectors.⁴⁹⁷ In the risk mitigation and consequence management domain, the industry sector includes other emergency management, homeland security, resilience organizations, and other government, private industry, and

⁴⁹² Daft, 22; and Kasey Couvillion Sisson, "Applying Social Network Analysis to Identify How Chief Resilience Officers Promote Community Resilience through Boundary Spanning, Interorganizational Collaboration, and Leadership" (master's thesis, University of Arkansas, 2019), 21, <https://scholarworks.uark.edu/etd/3329>. For example, a municipal resilience office could consider a variety of elements to be found within its environment including many local departments such as planning, engineering, code enforcement, public health, state and federal agencies within the same discipline areas, community based nonprofits, businesses, and other stakeholders.

⁴⁹³ Examples of these departments include public works, education, economic development, and others.

⁴⁹⁴ Daft, *Organization Theory & Design*, 148.

⁴⁹⁵ Daft, 148.

⁴⁹⁶ Daft, 148.

⁴⁹⁷ Daft, 148.

non-government organizations providing similar services. The raw materials sector would include organizations that provide supplies, facilities, equipment, and other materials used in mitigation, preparedness, response, and recovery functions. Constituents, stakeholders, and other risk mitigation and consequence management service customers are found within the market sector. The human resources sector significantly impacts service-oriented functions like government risk mitigation and consequence management. This sector includes the labor market for emergency managers and other desired positions, temporary employment firms, universities and schools with homeland security and emergency management education programs, employees in other organizations involved in risk mitigation and consequence management services for the jurisdiction, and applicable employee unions. The international sector is unlikely to influence risk mitigation and consequence management organizations significantly; however, jurisdictions with an international border may have some level of impact, as would the federal government, due to their relationship in sending and receiving aid during disasters. The global nature of some adversarial threats may also be a vital element of the international sector.

The general environment sectors are less likely to impact the organization's operations significantly but still are necessary to include in planning.⁴⁹⁸ The government sector includes laws and regulations at all levels of government that relate to risk mitigation and consequence management as well as elected leadership, political influences, and legal and court processes. Natural hazards, environmental concerns, climate change, and sustainability elements would fall within the natural sector. Government risk mitigation and consequence management organizations interface with numerous sociocultural sector advocacy groups, including those representing various faiths, races, ages, genders, access and functional needs, and educational status. The economic conditions sector influences the available funding for government risk mitigation and consequence management organizations, the ability of constituents to prepare and recover from disasters, growing jurisdictions, the costs of materials, and other economic stressors. Advances in technology have changed the types of organizations and systems that risk mitigation and consequence

⁴⁹⁸ Daft, 150.

management organizations interface within the technology sector. This sector ranges from organizations providing technologies to reduce disaster risk to firms offering information-sharing technologies in emergency response. Finally, the financial resources sector can play a role in risk mitigation and consequence management, especially when considering the funding needed for extensive hazard mitigation and adaptation projects or emerging requirements for climate adaptation planning in jurisdictional bond ratings.

The risk mitigation and consequence management organization must interface with groups and situations in all eleven sectors.⁴⁹⁹ It will typically adjust its structural design to handle the resulting environmental uncertainty better.⁵⁰⁰ Environmental uncertainty is outlined with three primary characteristics by Daft: dynamism, complexity, and abundance.⁵⁰¹ Dynamism focuses on how stable or unstable the events in the environment are.⁵⁰² Complexity describes how simple or complex the operating environment is.⁵⁰³ Abundance primarily considers the available financial resources to support the organization's operations and growth.⁵⁰⁴ Uncertainty can be a significant driver of the environment contingency factor. The uncertainty increases if a risk mitigation and consequence management organization operates in a highly complex and unstable

⁴⁹⁹ Drabek, *Professional Emergency Manager*, 7; and William A. Anderson, *Local Civil Defense in Natural Disaster: From Office to Organization* (Columbus, OH: Disaster Research Center, 1969), 1, <https://doi.org/10.21236/AD0707940>.

⁵⁰⁰ Gregory G. Dess and Donald W. Beard, "Dimensions of Organizational Task Environments," *Administrative Science Quarterly* 29, no. 1 (March 1984): 56, <https://doi.org/10.2307/2393080>; Ray Jurkovich, "A Core Typology of Organizational Environments," *Administrative Science Quarterly* 19, no. 3 (September 1974): 391–93, <https://doi.org/10.2307/2391979>; Robert B. Duncan, "Characteristics of Organizational Environments and Perceived Environmental Uncertainty," *Administrative Science Quarterly* 17, no. 3 (September 1972): 313, 325–236, <https://doi.org/10.2307/2392145>; Drabek, *Professional Emergency Manager*, 7; and Anderson, *Local Civil Defense in Natural Disaster*, 1.

⁵⁰¹ Daft, *Organization Theory & Design*, 153; Randall D. Harris, "Organizational Task Environments: An Evaluation of Convergent and Discriminant Validity," *Journal of Management Studies* 41, no. 5 (July 2004): 858, 861, <https://doi.org/10.1111/j.1467-6486.2004.00456.x>; Bluedorn, "Pilgrim's Progress," 166; Howard E. Aldrich, *Organizations and Environments* (Englewood Cliffs, NJ: Prentice-Hall, 1979), 110, <https://archive.org/details/organizationsenv00aldr>; and F. E. Emery and E. L. Trist, "The Causal Texture of Organizational Environments," *Human Relations* 18, no. 1 (February 1965): 30–31, <https://doi.org/10.1177/001872676501800103>.

⁵⁰² Daft, *Organization Theory & Design*, 153.

⁵⁰³ Daft, 153.

⁵⁰⁴ Daft, 153.

environment with fewer financial resources.⁵⁰⁵ An emergency response could be considered an environment with more significant uncertainty due to the number of organizations involved and many unexpected events.⁵⁰⁶ The underlying uncertainty in emergency response drives the risk mitigation and consequence management organization to gather more information and control more necessary resources.⁵⁰⁷ Organizational effectiveness directly relates to how leaders manage uncertainty and predict rapid environmental changes.⁵⁰⁸

Highly dynamic and unstable environments can create uncertainty. Most businesses look at significant fluctuations in product or service demand as an indicator of dynamism.⁵⁰⁹ This example can easily translate to government risk mitigation and consequence management functions through changes in demand caused by emergencies and disasters. The nature of work within comprehensive emergency management and homeland security organizations makes stability extremely rare due to emergency responses.⁵¹⁰ In risk mitigation and consequence management activities, the threat or occurrence of a hazard significantly contributes to dynamism. Even mitigation, preparedness, and recovery activities can encounter dynamic environments due to changes to laws, regulations, or other requirements from other levels of government.⁵¹¹ Heavily publicized disasters from jurisdictions elsewhere may increase demand for preparedness

⁵⁰⁵ Daft, 153.

⁵⁰⁶ National Academy of Public Administration, *Coping with Catastrophe*, 2, 4; and Hu, Sadiq, and Kapucu, “Multiplexity in Conceptualizing Network Effectiveness,” 8.

⁵⁰⁷ Daft, *Organization Theory & Design*, 153; Drabek, *Professional Emergency Manager*, 7; and Anderson, *Local Civil Defense in Natural Disaster*, 5.

⁵⁰⁸ Christine S. Koberg and Gerardo R. Ungson, “The Effects of Environmental Uncertainty and Dependence on Organizational Structure and Performance: A Comparative Study,” *Journal of Management* 13, no. 4 (Winter 1987): 734–35, <https://doi.org/10.1177/014920638701300412>; and Frances J. Milliken, “Three Types of Perceived Uncertainty about the Environment: State, Effect, and Response Uncertainty,” *Academy of Management Review* 12, no. 1 (January 1987): 137, 140–41, <https://doi.org/10.2307/257999>.

⁵⁰⁹ Paolo Aversa and Scott Berinato, “Sometimes, Less Innovation Is Better,” *Harvard Business Review*, May 2017, 39, <https://hbr.org/2017/05/sometimes-less-innovation-is-better>.

⁵¹⁰ E. L. Quarantelli and Russell R. Dynes, “Different Types of Organizations in Disaster Responses and Their Operational Problems” (working paper, Disaster Research Center, 1977), 17–19, <http://udspace.udel.edu/handle/19716/414>; and Donahue and Joyce, “Framework for Analyzing Emergency Management,” 729.

⁵¹¹ Aversa and Berinato, “Sometimes, Less Innovation Is Better,” 39.

activities within organizations to reduce the possibility of a similar incident impacting them. The increased attention to active shooter threats in the 2010s and 2020s has led to a highly dynamic environment for emergency management preparedness initiatives. Risk mitigation and consequence management organizations are likely to see increases in unstable environments similar to those experienced in other domains.⁵¹²

The number and dissimilarity of the organizations and elements in the environment also amplifies uncertainty.⁵¹³ Greater heterogeneity in the organizational landscape results in a more complex environment for the organization to navigate.⁵¹⁴ Government risk mitigation and consequence management organizations are typically small entities, especially locally. Because of their size, they must work with diverse organizations inside and outside the government daily to accomplish their mission.⁵¹⁵ This immense selection of partners creates an increasingly complex environment for emergency management, homeland security, and resilience organizations. The occurrence of a disaster increases complexity due to the large number of new, unfamiliar organizations that the risk mitigation and consequence management organization needs to interface with. Disasters also lead to rapidly changing activities, each with the possibility of engaging even more external organizations.⁵¹⁶ Organizations at the federal or state levels of government may be working in more complex environments as they must work with a much larger set of organizations across their entire geography, depending on where projects or incidents occur.⁵¹⁷ A small emergency management office in a town likely has many fewer

⁵¹² Ian P. McCarthy et al., “A Multidimensional Conceptualization of Environmental Velocity,” *Academy of Management Review* 35, no. 4 (October 2010): 604, 606, 621–22, <https://doi.org/10.5465/amr.35.4.zok604>.

⁵¹³ Daft, *Organization Theory & Design*, 154.

⁵¹⁴ Daft, 154.

⁵¹⁵ National Academy of Public Administration, *Coping with Catastrophe*, 2, 4.

⁵¹⁶ Naim Kapucu, Tolga Arslan, and Matthew Lloyd Collins, “Examining Intergovernmental and Interorganizational Response to Catastrophic Disasters: Toward a Network-Centered Approach,” *Administration & Society* 42, no. 2 (April 2010): 228, <https://doi.org/10.1177/0095399710362517>; and Hodges and Larrañaga, “Emergency Management as a Complex Adaptive System,” 362.

⁵¹⁷ National Academy of Public Administration, *Coping with Catastrophe*, 2, 4.

organizations to interface with than FEMA.⁵¹⁸ Instead, it has a very stable set of external stakeholders they may deal with daily and during crises.⁵¹⁹

The types of hazards and threats within the jurisdiction will also create variations in the types and stability of external organizations encountered. For instance, jurisdictions with heavy industry may frequently coordinate with these facilities on hazardous materials planning.⁵²⁰ In contrast, jurisdictions with greater earthquake risk may involve greater coordination with building officials, engineers, and others.⁵²¹ Every jurisdiction contains populations with varying socio-demographic categories. A jurisdiction with a large retirement population will encounter different types of stakeholders and organizations than one with a large university.

The dynamism and complexity dimensions can be assessed in a four-category framework to evaluate environmental uncertainty.⁵²² Uncertainty is low for environments with low dynamism and complexity (simple, static).⁵²³ Risk mitigation and consequence management organizations are unlikely to encounter an environment like this due to the sheer number of organizations they are influenced by. When dynamism remains low, but complexity is high (complex, static), uncertainty will increase.⁵²⁴ This category may best explain the environment in which a resilience office without an emergency response mission may interact. Uncertainty is also elevated when dynamism is high, but complexity remains low (simple, dynamic).⁵²⁵ A good example of this category is a risk mitigation and consequence management function embedded in another non-risk mitigation and consequence management department, like public health emergency preparedness. While

⁵¹⁸ National Academy of Public Administration, 2, 4.

⁵¹⁹ National Academy of Public Administration, 2, 4.

⁵²⁰ Canton, *Emergency Management*, 96.

⁵²¹ Canton, 96.

⁵²² Daft, *Organization Theory & Design*, 156.

⁵²³ Daft, 156.

⁵²⁴ Daft, 156.

⁵²⁵ Rosalie L. Tung, "Dimensions of Organizational Environments: An Exploratory Study of Their Impact on Organization Structure," *Academy of Management Journal* 22, no. 4 (December 1979): 691, <https://doi.org/10.2307/255808>.

an organization like this does have many external organizations that they will work with, typically focused around the domain they are working within, it may be less heterogeneous than a comprehensive emergency management agency. Their environment has the potential to change rapidly, primarily due to incidents impacting the agency they are embedded in. Finally, the most uncertain environment is encountered when both dynamism and complexity are high (complex, dynamic).⁵²⁶ Emergency management and homeland security agencies frequently operate in this environment, balancing periods of stability and instability while interacting with many organizations and stakeholders. The greater the number of unstable sectors the organization must work with increases the uncertainty.⁵²⁷ The environmental uncertainty framework is shown in Figure 14.

	Simple	Complex
	Cell 1: low perceived uncertainty	Cell 2: moderately low perceived uncertainty
Static	(1) Small number of factors and components in the environment (2) Factors and components are somewhat similar to one another (3) Factors and components remain basically the same and are not changing	(1) Large number of factors and components in the environment (2) Factors and components are not similar to one another (3) Factors and components remain basically the same
	Cell 3: moderately high perceived uncertainty	Cell 4: high perceived uncertainty
Dynamic	(1) Small number of factors and components in the environment (2) Factors and components are somewhat similar to one another (3) Factors and components of the environment are in continual process of change	(1) Large number of factors and components in the environment (2) Factors and components are not similar to one another (3) Factors and components of environment are in a continual process of change

Figure 14. Environmental Uncertainty Framework⁵²⁸

⁵²⁶ Daft, *Organization Theory & Design*, 157.

⁵²⁷ Joseph E. McCann and John Selsky, "Hyperturbulence and the Emergence of Type 5 Environments," *Academy of Management Review* 9, no. 3 (July 1984): 461, 467–68, <https://doi.org/10.2307/258286>.

⁵²⁸ Source: Duncan, "Characteristics of Organizational Environments," 320.

The environment contingency factor influences the structural design of organizations in many ways, primarily focused on adapting to uncertainty.⁵²⁹ Organizations may add positions and departments to deal with specific environmental sectors.⁵³⁰ One of the best examples would be implementing a human resources department to deal with the many challenges of an expanding or complex workforce. Creating an information technology department can support an emergency management agency's efforts to integrate new technologies and services into its operations. There have been frequent efforts to add positions related to diversity, equity, and inclusion within emergency management agencies, with a significant example being a proposal by Congress in 2022 to add an Equity Advisor within FEMA.⁵³¹ While smaller organizations may rely on shared "enabling" departments at the jurisdiction level, larger organizations are more frequently adding internal agency positions to deal with uncertain environments. The increase of roles and departments to deal with environmental complexity also increases the internal complexity of the organization, a critical structural dimension.⁵³²

Another strategy frequently used by organizations to interface with the external environment is to establish buffering roles. The purpose of these roles is to establish separation between the technical core of the organization and an uncertain environment.⁵³³ Buffering roles can be implemented to handle non-core functions with great uncertainty, including human resources, procurement, accounting, and other environmental sectors. Having these departments frequently shift tasks between core work activities and non-core environmental functions can be inefficient. Many organizations have discontinued this concept as they look to provide a closer connection between constituents and the technical core.⁵³⁴ The highly uncertain emergency response environment is a prime example; staff

⁵²⁹ Daft, *Organization Theory & Design*, 159.

⁵³⁰ Daft, 159.

⁵³¹ FEMA Equity Act, H.R. 7668, 117th Cong. § (2022).

⁵³² Daft, *Organization Theory & Design*, 159.

⁵³³ Thompson, *Organizations in Action*, 20–21. For instance, the technical core of an emergency management agency typically consists of the staff associated with mitigation, preparedness, response, and recovery missions.

⁵³⁴ Daft, *Organization Theory & Design*, 159.

must adapt quickly to stakeholder needs without transferring information between many other entities.⁵³⁵ Like buffering roles, Jemison defines boundary-spanning as “any activity that links an organization with its task environment.”⁵³⁶ Boundary-spanning roles are focused on exchanging information between the organization and the external environment and ensuring the organization’s leadership is informed about critical environmental changes.⁵³⁷

Lawrence and Lorsch’s research on the interface of organizations and the external environment is also highly applicable to risk mitigation and consequence management.⁵³⁸ Their primary focus was on differentiation and integration between departments within an organization.⁵³⁹ Their research identified differentiation as the differences between management orientations and organizational structures within different departments.⁵⁴⁰ For example, in an emergency management agency, the great uncertainty posed by the external environment across the many domains drives internal departments to specialize and customize their structure to deal with their unique circumstances.⁵⁴¹ This results in the employees of a mitigation department having different emotional and cognitive orientations than the response department due to the unique expertise, education, attitudes, and behavior required.⁵⁴² The mitigation department may have a highly mechanistic

⁵³⁵ Daft, 159.

⁵³⁶ David B. Jemison, “The Importance of Boundary Spanning Roles in Strategic Decision-Making,” *Journal of Management Studies* 21, no. 2 (April 1984): 133, <https://doi.org/10.1111/j.1467-6486.1984.tb00228.x>.

⁵³⁷ Jemison, 131–32; Mohamed Ibrahim Ahmad At-Twajjri and John R. Montanari, “The Impact of Context and Choice on the Boundary-Spanning Process: An Empirical Extension,” *Human Relations* 40, no. 12 (December 1987): 784, <https://doi.org/10.1177/001872678704001201>; and Steven Curnin et al., “A Theoretical Framework for Negotiating the Path of Emergency Management Multi-Agency Coordination,” *Applied Ergonomics* 47 (March 2015): 301, <https://doi.org/10.1016/j.apergo.2014.10.014>.

⁵³⁸ Lawrence and Lorsch, *Organization and Environment*.

⁵³⁹ Daft, *Organization Theory & Design*, 162.

⁵⁴⁰ Jay W. Lorsch, “Introduction to the Structural Design of Organizations,” in *Organizational Structure and Design*, ed. Gene W. Dalton, Paul R. Lawrence, and Jay W. Lorsch (Homewood, IL: R. D. Irwin, 1970), 5.

⁵⁴¹ Daft, *Organization Theory & Design*, 162; Drabek, *Professional Emergency Manager*, 8; and Anderson, *Local Civil Defense in Natural Disaster*, 1, 5.

⁵⁴² Daft, *Organization Theory & Design*, 162; and Howard, “Organization and Reorganization as Manifestation of Public Policy,” 137.

structure due to the stability of the external environment. In contrast, the response department is oriented towards an organic design to provide flexibility and adaptation during a crisis.⁵⁴³

The challenge with high levels of differentiation within an organization is that collaboration and coordination may not be as strong.⁵⁴⁴ Additional deliberate attention must be placed on connecting activities and functions.⁵⁴⁵ Lawrence and Lorsch identified the level of quality coordination between internal departments as integration.⁵⁴⁶ Horizontal communication mechanisms like integrators, liaisons, task forces, committees, and other tools are typically implemented to achieve high integration within highly differentiated organizations.⁵⁴⁷ The concepts of integration and differentiation are particularly interesting for consolidated government risk mitigation and consequence management organizations. The level of environmental uncertainty between hazard mitigation and emergency response activities is great, resulting in significant differentiation between those departments. But, it is unclear if there would be a benefit from additional integration between the agency's functional departments.⁵⁴⁸ Very few work processes and tasks intersect between the departments, making additional horizontal linking mechanisms potentially inefficient and unnecessary.⁵⁴⁹ Overall, Lawrence and Lorsch's findings supported the concept that an organization's level of differentiation and integration should align with the external environment's level of uncertainty and complexity.⁵⁵⁰ Their

⁵⁴³ Thomas E. Drabek, "Alternative Patterns of Decision-Making in Emergent Disaster Response Networks," *International Journal of Mass Emergencies and Disasters* 1, no. 2 (1983): 299, <https://doi.org/10.1177/028072708300100203>.

⁵⁴⁴ Daft, *Organization Theory & Design*, 162.

⁵⁴⁵ Daft, 162.

⁵⁴⁶ Lorsch, "Introduction to the Structural Design of Organizations," 7.

⁵⁴⁷ Jay W. Lorsch and Paul R. Lawrence, "Environmental Factors and Organizational Integration," in *Organization Planning: Cases and Concepts*, ed. Jay W. Lorsch and Paul R. Lawrence (Homewood, IL: R.D. Irwin, 1972), 45, <http://archive.org/details/organizationplan00lors>.

⁵⁴⁸ National Academy of Public Administration, *Coping with Catastrophe*, 42; and Howard, "Organization and Reorganization as Manifestation of Public Policy," 137.

⁵⁴⁹ Paul R. Lawrence and Jay W. Lorsch, "Differentiation and Integration in Complex Organizations," *Administrative Science Quarterly* 12, no. 1 (1967): 4, <https://doi.org/10.2307/2391211>.

⁵⁵⁰ Daft, *Organization Theory & Design*, 163.

research supports the idea that a high-performing emergency management agency should have high levels of differentiation and integration.⁵⁵¹

Regardless of a mechanistic or organic design orientation, environmental uncertainty makes organizational planning much more necessary.⁵⁵² Stable environments typically enable organizations to focus on day-to-day operations and efficiency.⁵⁵³ Because consolidated risk mitigation and consequence management organizations are balancing competing demands for daily efficiency in mitigation, preparedness, and recovery programs while simultaneously managing emergencies and highly uncertain situations, long-range planning and forecasting can be valuable to improve responsiveness to environmental changes.⁵⁵⁴ Larger emergency management agencies will typically establish staff or departments to focus on planning to mitigate the impacts of major environmental shifts.⁵⁵⁵ Robust planning can be a valuable technique to handle uncertain environments in addition to other structural design techniques that foster additional horizontal coordination and integration.⁵⁵⁶

Daft recommends structural orientations for each quadrant of the uncertainty framework that are most appropriate based on the level of environmental uncertainty.⁵⁵⁷ Each environment is associated with the various techniques that create the best organizational fit.⁵⁵⁸ For the low uncertainty environments where dynamism and complexity are both low (simple, static), a mechanistic design is most appropriate with few

⁵⁵¹ Lawrence and Lorsch, “Differentiation and Integration in Complex Organizations,” 46–47.

⁵⁵² Thomas C. Powell, “Organizational Alignment as Competitive Advantage,” *Strategic Management Journal* 13, no. 2 (February 1992): 122, 129–30, <https://doi.org/10.1002/smj.4250130204>; Mansour Javidan, “The Impact of Environmental Uncertainty on Long-Range Planning Practices of the U.S. Savings and Loan Industry,” *Strategic Management Journal* 5, no. 4 (1984): 391–392, <https://doi.org/10.1002/smj.4250050407>; Tung, “Dimensions of Organizational Environments,” 691; and Thompson, *Organizations in Action*, 72–75.

⁵⁵³ Daft, *Organization Theory & Design*, 165.

⁵⁵⁴ Daft, 165.

⁵⁵⁵ Daft, 165; and “National Planning Branch,” Federal Emergency Management Agency, February 3, 2023, <https://www.fema.gov/about/offices/response/national-planning>.

⁵⁵⁶ Daft, *Organization Theory & Design*, 165.

⁵⁵⁷ Daft, 166.

⁵⁵⁸ Daft, 166.

departments and integrating roles.⁵⁵⁹ A low-moderate uncertainty environment where dynamism remains low but complexity is high (complex, static) would be suited for a mechanistic design with many departments and some boundary-spanning and integrating roles.⁵⁶⁰ When dynamism is high, but complexity remains low (simple, dynamic) within a high-moderate uncertainty environment, the design shifts to organic with few departments and integrating roles but significant boundary spanning.⁵⁶¹ Finally, the highly uncertain environment with high dynamism and complexity (complex, dynamic) would benefit from an organic design with many differentiated departments and extensive boundary-spanning and integrating roles.⁵⁶² Like many of the structural techniques outlined in this thesis, it would not be likely that a government risk mitigation and consequence management organization will implement an entirely mechanistic or organic design. Instead, it would likely mix and match the design mechanisms as needed.

In addition to dynamism and complexity, resource abundance impacts the environment contingency factor.⁵⁶³ This relationship is assessed as part of the resource dependence theory.⁵⁶⁴ The premise of resource dependence theory is that organizations work to gain as much control over the material, staff, and financial resources needed for their operations to minimize their reliance on other organizations.⁵⁶⁵ For government risk mitigation and consequence management organizations, this desire to control necessary resources is not unique to an emergency response where resources may be limited due to disaster impacts. The concept applies to all emergency management phases as resource dependence theory asserts that all environmental resources are limited.⁵⁶⁶

⁵⁵⁹ Daft, 166.

⁵⁶⁰ Daft, 166.

⁵⁶¹ Daft, 166.

⁵⁶² Daft, 167.

⁵⁶³ Daft, 167.

⁵⁶⁴ Daft, 167.

⁵⁶⁵ Daft, 167.

⁵⁶⁶ Daft, 167; and Joseph P. McGeary, “Applying Goldwater-Nichols Reforms to Foster Interagency Cooperation between Public Safety Agencies in New York City” (master’s thesis, Naval Postgraduate School, 2007), 38–39, <https://hdl.handle.net/10945/3630>.

The theory also supports the concept of embedded risk mitigation and consequence management departments and staff within non-risk mitigation and consequence management organizations.⁵⁶⁷ Many public health agencies across the country at all levels of government have hired emergency managers and planners to support their role in risk mitigation and consequence management. Resource dependence theory proposes this is at least partially due to the public health agency's desire to control all aspects of their mission without having to rely on the performance of an emergency management agency. With this type of organizational arrangement occurring in other agencies, including transportation and education, the control of resources appears to be quite influential in organization design.

Two primary strategies can be used to gain more control over financial and other resources to influence the environment contingency factor.⁵⁶⁸ First, the organization may try to establish formal relationships with other organizations.⁵⁶⁹ Although many relationship arrangements are found in the private sector, joint ventures and partnerships are frequently used in government agencies.⁵⁷⁰ Government risk mitigation and consequence management organizations sometimes implement these partnerships, like the private sector or non-profits, by entering into formal contractual relationships with other entities like universities or businesses to provide services.⁵⁷¹ However, their connection to federalism and the "shared governance" approach to emergency management sets these

⁵⁶⁷ D. Lochlin Sturrock, "Emergency Response and Preparedness at the Centers for Disease Control and Prevention: The Effects of 9/11 and the Creation of Public Health Preparedness" (master's thesis, Long Island University, 2010), 98.

⁵⁶⁸ Daft, *Organization Theory & Design*, 168.

⁵⁶⁹ Peter Smith Ring and Andrew H. van de Ven, "Developmental Processes of Cooperative Interorganizational Relationships," *Academy of Management Review* 19, no. 1 (January 1994): 112–13, <https://doi.org/10.2307/258836>; Jeffrey Pfeffer, "Beyond Management and the Worker: The Institutional Function of Management," *Academy of Management Review* 1, no. 2 (April 1976): 36–45, <https://doi.org/10.2307/257485>; and John P. Kotter, "Managing External Dependence," *Academy of Management Review* 4, no. 1 (January 1979): 87–91, <https://doi.org/10.2307/257406>.

⁵⁷⁰ Daft, *Organization Theory & Design*, 169; and Drabek, *Professional Emergency Manager*, 188–89. The private sector can implement a broader range of formal relationships including mergers and acquisitions, joint ventures and partnerships, board member interlocks, and executive recruitment from other industries where relationships are desired.

⁵⁷¹ Naomi Klein, *The Shock Doctrine: The Rise of Disaster Capitalism* (New York: Metropolitan Books, 2007), 410–11; and Stevenson and Hayman, *Local Government Disaster Protection*, 50.

partnerships apart in the public sector.⁵⁷² These partnerships allow local and state governments to access the federal government's resources to fully deliver all aspects of each risk mitigation and consequence management function.

The second approach to gain more control over financial and other resources is to try and influence the environmental sectors the organization interacts with.⁵⁷³ Unlike the “establishing formal relationships” approach, many of the techniques used in the private sector are highly applicable to government agencies. Government risk mitigation and consequence management organizations are frequently part of professional associations like the International Association of Emergency Managers (IAEM), the National Emergency Management Association (NEMA), the National Homeland Security Association (NHSA), the American Society of Adaptation Professionals (ASAP), and others, all created with a vital function to advocate for changes in funding, policy, legislation, and regulations that impact their work.⁵⁷⁴ These groups are also utilized by risk mitigation and consequence management organizations to pool knowledge resources to create industry standards, guidance, and other essential projects furthering their missions.

Many organizations within the private sector will also attempt to change their environment by adjusting the location or markets they do business in.⁵⁷⁵ Government risk mitigation and consequence management organizations can also take this strategy to some extent.⁵⁷⁶ The capacity and expertise of the external environment organizations may shape the scope and activities of an organization, especially in cases where certain risk mitigation and consequence management functions are not being performed. For example, the city of Nashua, New Hampshire's, Office of Emergency Management started performing various

⁵⁷² May and Williams, *Disaster Policy Implementation*, 6; Cigler, “Fighting COVID-19,” 5; Waugh, *Living with Hazards, Dealing with Disasters*, 258–59; Drabek, *Professional Emergency Manager*, 26–27; and Stevenson and Hayman, *Local Government Disaster Protection*, 54.

⁵⁷³ Daft, *Organization Theory & Design*, 171.

⁵⁷⁴ Daft, 172.

⁵⁷⁵ Kotter, “Managing External Dependence,” 88–89.

⁵⁷⁶ Drabek, *Professional Emergency Manager*, 203–4.

school preparedness, safety, and security functions, including risk assessments, training, exercises, and planning technical assistance in 2011.⁵⁷⁷ After the Sandy Hook Elementary School shooting in December of 2012, upon direction from the New Hampshire governor, the State of New Hampshire Homeland Security & Emergency Management also started to conduct school preparedness activities within municipalities across the state using dedicated staff assigned to school safety and security.⁵⁷⁸ Because of the limited resources and staff within the City's Office of Emergency Management responsible for many other duties, it was decided to discontinue school-related activities to prevent duplication of effort.⁵⁷⁹ The availability of resources will play a role in the organization's external environment, as this will influence the availability of vendors, suppliers, and relations with other organizations competing for the same resources.

Many drivers can manipulate the environment contingency factor, including complexity, dynamism, and resource abundance.⁵⁸⁰ Burns and Stalker's research on organic and mechanistic structural designs identified connections between internal management processes and the external environment.⁵⁸¹ Highly stable external environments frequently encountered mechanistic structural dimensions, including formalized rules and procedures and a centralized and clear hierarchy of authority.⁵⁸² If information uncertainty is low, mechanistic characteristics are more effective with fewer departments and boundary roles.⁵⁸³ With those environments that were highly dynamic, an organic design was frequently implemented.⁵⁸⁴ These structures were horizontally oriented, decentralized, and did not exhibit a clear hierarchy found in stable

⁵⁷⁷ Nashua Office of Emergency Management, *Nashua OEM Program Info and SWOT* (Nashua, NH: Nashua Office of Emergency Management, 2015), 19.

⁵⁷⁸ Kathleen Ronayne, "One Year After Sandy Hook, Area Schools See Tighter Security, Stricter Policies," *Concord Monitor*, December 14, 2013, sec. Education, <https://www.concordmonitor.com/Archive/2013/12/SchoolSecurity-CM-121413>.

⁵⁷⁹ Nashua Office of Emergency Management, *Nashua OEM Program Info and SWOT*, 23–24.

⁵⁸⁰ Daft, *Organization Theory & Design*, 174.

⁵⁸¹ Burns and Stalker, *The Management of Innovation*, 5–6, 99.

⁵⁸² Daft, *Organization Theory & Design*, 163.

⁵⁸³ Daft, 174.

⁵⁸⁴ Daft, 163.

environments.⁵⁸⁵ When information uncertainty is high, an organization can likely achieve better organizational fit using an organic design with additional departments and boundary roles.⁵⁸⁶ Resource abundance also helps describe the relationship between the environment and organization design. When an organization heavily relies on others for resources, it must create relationships or influence the environment to maintain viability.⁵⁸⁷ More autonomous organizations do not need to make those same linkages with other organizations.⁵⁸⁸

When using this analytical framework at the jurisdiction level or when assessing a consolidated risk mitigation and consequence management agency, the environment contingency factor will likely be oriented towards organic designs due to the uncertainty in the external environment. Due to the many more stable environmental sectors encountered, assessing distributed emergency management functions may support a mechanistic design within the mitigation, preparedness, and recovery phases. The response phase would still likely benefit from an organic design due to rapidly changing events and a diverse set of external organizations involved.⁵⁸⁹ This design would enable employees to deal with problems in smaller teams and quickly adapt to changes.⁵⁹⁰ Local and state agencies are more likely to be reliant on resources from the external environment. They must establish partnerships with the federal government or other organizations and sometimes try to influence the environment to their benefit. Table 6 displays the optimal risk mitigation and consequence management design orientations and characteristics for the environment contingency factor.

⁵⁸⁵ Daft, 163.

⁵⁸⁶ Daft, 174.

⁵⁸⁷ Daft, 174.

⁵⁸⁸ Daft, 174.

⁵⁸⁹ Donahue and Joyce, “Framework for Analyzing Emergency Management,” 729.

⁵⁹⁰ John A. Courtright, Gail T. Fairhurst, and L. Edna Rogers, “Interaction Patterns in Organic and Mechanistic Systems,” *Academy of Management Journal* 32, no. 4 (December 1989): 775, 797–99, <https://doi.org/10.2307/256568>.

Table 6. Environment Contingency Factor Orientations and Characteristics

Emergency Management Phase	Level of Analysis	Optimal Orientation	Design Characteristics
Mitigation	Group or Agency	Mechanistic	Stable Environment
Preparedness	Group or Agency	Mechanistic	Stable Environment
Response	Group or Agency	Organic	Changing Environment
Recovery	Group or Agency	Mechanistic	Stable Environment
Multiple (Consolidated)	Group, Agency, or Jurisdiction	Organic	Changing Environment

4. Goals and Strategy

One area where risk mitigation and consequence management organizations can differ and conflict significantly is with their goals and strategy. Daft notes that “the choices top managers make about goals, strategies, and organization design have a tremendous impact on organizational effectiveness.”⁵⁹¹ Without clear and nonconflicting goals, an organization will struggle to rally employees and stakeholders around a common purpose.⁵⁹² In 1962, Chandler highlighted the critical relevance of strategy in organizational design, noting “structure follows strategy.”⁵⁹³

Despite the importance of mission, goals, and strategies in the orientation and design of an organization, many government organizations lack them.⁵⁹⁴ In cases where emergency management agencies completed strategic plans, they were constructed without

⁵⁹¹ Daft, *Organization Theory & Design*, 54.

⁵⁹² National Academy of Public Administration, *Coping with Catastrophe*, 45–48.

⁵⁹³ Chandler, *Strategy and Structure*, 314.

⁵⁹⁴ Sang Ok Choi, “Emergency Management: Implications from a Strategic Management Perspective,” *Journal of Homeland Security and Emergency Management* 5, no. 1 (2008): 5–6, <https://doi.org/10.2202/1547-7355.1372>.

much engagement from external stakeholders.⁵⁹⁵ The absence of established formal strategic plans to clearly outline the scope of operations and relationship with the external environment is likely a contributor to conflicting and duplicative strategies between risk mitigation and consequence management organizations.⁵⁹⁶ Emergency management programs accredited under EMAP are required to develop and maintain a strategic plan which includes a mission, goals, objectives, and milestones.⁵⁹⁷ However, while it is unknown how many emergency management programs exist across the United States, only 108 government organizations are EMAP accredited as of 2023.⁵⁹⁸ In some cases, government departments may be required to include a mission statement in annual budget requests, along with goals and objectives.⁵⁹⁹ But, this is not consistently applied across all levels of government and all jurisdictions in the United States.⁶⁰⁰

Although strategy and goal development are much broader than organization theory and design, they play a significant role in the “agency level” of evaluation. At that level, mission, goals, and strategy can lead to the consolidation or distribution of risk mitigation and consequence management functions across the jurisdiction. Daft notes that an “organization’s goals and strategy define the purpose and competitive techniques that set it apart from other organizations.”⁶⁰¹ Numerous entities may perform risk mitigation and

⁵⁹⁵ Scott Robert Manning, “Exploring the Process of Strategic Planning in Emergency Management,” *International Journal of Emergency Management* 16, no. 2 (2020): 171–72, <https://doi.org/10.1504/IJEM.2020.112300>.

⁵⁹⁶ Sang Ok Choi and Ralph S. Brower, “When Practice Matters More Than Government Plans: A Network Analysis of Local Emergency Management,” *Administration & Society* 37, no. 6 (January 2006): 673–75, <https://doi.org/10.1177/0095399705282879>; Canton, *Emergency Management*, 106–7; National Academy of Public Administration, *Coping with Catastrophe*, 41; and Daft, *Organization Theory & Design*, 22.

⁵⁹⁷ Emergency Management Accreditation Program, *Emergency Management Standard*, 8.

⁵⁹⁸ Emergency Management Accreditation Program, “Who Is Accredited?”; Jensen and Kirkpatrick, “Local Emergency Management and Comprehensive Emergency Management (CEM),” 10; and Jensen and Ferreira, “An Exploration of Local Emergency Management Program Accreditation Pursuit,” 2.

⁵⁹⁹ National Advisory Council on State and Local Budgeting, *Recommended Budget Practices: A Framework for Improved State and Local Government Budgeting* (Chicago: Government Finance Officers Association, 1998), 54, https://gfoaorg.cdn.prismic.io/gfoaorg/e4534548-fa06-47ad-9cc8-5f37e6e2f21e_RecommendedBudgetPractices.pdf; and Canton, *Emergency Management*, 108.

⁶⁰⁰ Choi, “Emergency Management,” 5–6.

⁶⁰¹ Daft, *Organization Theory & Design*, 22.

consequence management functions at some jurisdiction levels, including emergency management, homeland security, and resilience agencies. The jurisdiction's mission, goals, and strategy will likely shape the emphasis and branding of any consolidated risk mitigation and consequence management entities. For example, a resilience or environmental-oriented office may outline its strategy or plan of action focusing on hazard mitigation and climate adaptation activities, emphasizing traditional risk reduction efforts more.⁶⁰² A homeland security department may emphasize terrorism prevention, preparedness, and response in its strategy and allocate resources and activities accordingly.⁶⁰³ The emergency management agency within the same jurisdiction may incorporate those areas and others within its strategy. Despite the different areas of emphasis, these entities may have similar common goals to reduce risk within their jurisdiction and prepare constituents for emergencies. Furthermore, efforts to differentiate an organization's mission are useless unless there is domain consensus across agency leadership, the jurisdictional chief executive, and key stakeholders.⁶⁰⁴

The background, experience, and formal education of leaders of these organizations may also drive the strategy and goals towards a particular emphasis. For example, an emergency management director with a background as a fire chief may emphasize emergency response within the organization's strategy and goals.⁶⁰⁵ This emphasis could lead to the organization's other mitigation, preparedness, and recovery functions being minimized or implemented poorly.⁶⁰⁶

⁶⁰² Greater Miami & the Beaches, *Resilient305 Strategy* (Miami, FL: Greater Miami & the Beaches, 2019), <https://resilient305.com/wp-content/uploads/2019/05/Full-Strategy-2.pdf>.

⁶⁰³ Arizona Department of Homeland Security, *2021–2024 Arizona State Homeland Security Strategy* (Phoenix, AZ: Arizona Department of Homeland Security, 2021), https://azdohs.gov/sites/default/files/az_state_homeland_security_strategy_2021-2024_063023_0.pdf; and Daft, *Organization Theory & Design*, 22.

⁶⁰⁴ Drabek, *Professional Emergency Manager*, 132–33; and Stevenson and Hayman, *Local Government Disaster Protection*, 38.

⁶⁰⁵ Ray H. Chang and Dave Neal, "Promotion or Transition: From Fire Officer to Emergency Manager," *Journal of Emergency Management* 17, no. 2 (2019): 103, 108, <https://doi.org/10.5055/jem.2019.0402>; and Savitt, "Role of the County Emergency Manager," 92.

⁶⁰⁶ Savitt, "Role of the County Emergency Manager," 92.

The elected leadership of a jurisdiction may also play a key role in driving the risk mitigation and consequence management strategy and goals. Elected leaders typically focus on specific campaign promises aligned with their political interests.⁶⁰⁷ One elected leader may prioritize efforts to adapt to climate change, focusing activities and priorities towards natural hazard mitigation, whereas another official could emphasize work around terrorism preparedness. These areas of emphasis may be derived from recent disasters in their jurisdiction or a growing concern about threats and hazards observed in other jurisdictions elsewhere.⁶⁰⁸

The challenge of identity and purpose relates closely to the constantly changing brand and purpose of consolidated government risk mitigation and consequence management functions.⁶⁰⁹ Over many decades, the purpose of these organizations has shifted dramatically from protecting the population from an attack from the former Soviet Union to adapting community infrastructure and systems to the slowly emerging threat of climate change. Through each successive modification, there were rarely deliberate efforts to reevaluate the mission, goals, and strategies of the existing consolidated agencies that performed risk mitigation and consequence management and emergency management functions within the jurisdiction.⁶¹⁰ These changes led to many gaps and overlaps as additional agencies were created to manage emerging threats and hazards.⁶¹¹

Instead of creating new entities or reorganizing for the sake of reorganizing, jurisdictional chief executives can leverage the expansive body of knowledge in

⁶⁰⁷ Jensen and Kirkpatrick, “Local Emergency Management and Comprehensive Emergency Management (CEM),” 9; and Howard, “Organization and Reorganization as Manifestation of Public Policy,” 61.

⁶⁰⁸ Birkland, *After Disaster*, 3; Drabek, *Professional Emergency Manager*, 167–78; and Stevenson and Hayman, *Local Government Disaster Protection*, 35.

⁶⁰⁹ Howard, “Organization and Reorganization as Manifestation of Public Policy,” 200.

⁶¹⁰ Bea, *Organization and Mission of the Emergency Preparedness and Response Directorate*, 42–47, 50–51; Bea, *Transfer of FEMA to the Department of Homeland Security*, 4; Keith Bea, *Proposed Transfer of FEMA to the Department of Homeland Security*, CRS Report No. RL31510 (Washington, DC: Congressional Research Service, 2002), 5, 15, 20, <https://www.hsdl.org/c/abstract?docid=15073>; and Fastiggi, Meerow, and Miller, “Governing Urban Resilience,” 1266, 1274.

⁶¹¹ Roberts, “Shifting Priorities,” 443; and Garrett M. Graff, “Biden’s Cybersecurity Team Gets Crowded at the Top,” *Wired*, July 17, 2021, <https://www.wired.com/story/biden-cybersecurity-inglis-easterly-cisa-nsa/>.

organizational direction-setting and strategy development. Typically, organizations first set organizational goals to help represent the desired state of affairs they will attempt to reach.⁶¹² Leaders within the organization have the critical responsibility to craft these goals within the context of the changing environment.⁶¹³ In the case of risk mitigation and consequence management organizations, emerging threats and hazards may warrant adjusting organizational goals rather than creating a new and duplicative organization. Similarly, middle managers will craft goals for their departments to help maintain a steady direction.⁶¹⁴ This delegation of goal-setting might mean the manager overseeing the mitigation department within an emergency management agency may consider different departmental goals than their counterparts within the response or preparedness departments, even while striving for the overall organizational goals within the agency. Chief executives may also utilize tools like the strengths, weaknesses, opportunities, and threats (SWOT) analysis or scenario planning to help understand the external environment and better determine what the goals the organization should strive for.⁶¹⁵

Establishing organizational goals and direction-setting enables the jurisdictional chief executive to define the organization's strategic intent.⁶¹⁶ Strategic intent provides focus, includes the organization's mission, and establishes the framework for operating goals and strategies that may be created and revised more frequently.⁶¹⁷ A critical aspect

⁶¹² Etzioni, *Modern Organizations*, 6.

⁶¹³ John P. Kotter, "What Effective General Managers Really Do," *Harvard Business Review*, 1999, 148–49, <https://hbr.org/1999/03/what-effective-general-managers-really-do>; Henry Mintzberg, *The Nature of Managerial Work* (New Yor: Harper & Row, 1973), 94–95, 99, 166, <http://archive.org/details/natureofmanageri00055>; and Henry Mintzberg, *Managing* (San Francisco: Berrett-Koehler Publishers, 2009), 189–91, http://archive.org/details/Managing_9781576758953.

⁶¹⁴ Daft, *Organization Theory & Design*, 50.

⁶¹⁵ Rafael Ramirez et al., "Using Scenario Planning to Reshape Strategy," *MIT Sloan Management Review* 58, no. 4 (Summer 2017): 31, <https://sloanreview.mit.edu/article/using-scenario-planning-to-reshape-strategy/>; Steven Schnaars and Paschalina (Lilia) Ziamou, "The Essentials of Scenario Writing," *Business Horizons* 44, no. 4 (2001): 15, [https://doi.org/10.1016/S0007-6813\(01\)80044-6](https://doi.org/10.1016/S0007-6813(01)80044-6); Peter Cornelius, Alexander Van de Putte, and Mattia Romani, "Three Decades of Scenario Planning in Shell," *California Management Review* 48, no. 1 (October 2005): 92–95, <https://doi.org/10.2307/41166329>; and Stephen M. Millett, "Four Decades of Business Scenarios: What Can Experience Teach?," *Strategy & Leadership* 41, no. 1 (2013): 29–33, <https://doi.org/10.1108/10878571311290052>.

⁶¹⁶ Daft, *Organization Theory & Design*, 52.

⁶¹⁷ Daft, 52.

of strategic intent is the organization's mission and reason for being.⁶¹⁸ This mission is typically artfully crafted into a mission statement which serves as an essential communication tool to promote the organization's legitimacy to internal and external stakeholders.⁶¹⁹ For example, FEMA's mission is "helping people before, during, and after disasters."⁶²⁰ This broad mission statement describes the wide variety of activities that FEMA is responsible for. The West Virginia Department of Homeland Security's mission is "to provide a safe and secure state by ensuring the proper response to all levels, manners and phases of emergencies, disasters and crimes."⁶²¹ This mission emphasizes human-caused threats; one would expect their activities to fit within that realm. The Miami-Dade County Office of Resilience has a mission to "lead Miami-Dade County to a resilient and environmentally sustainable future by identifying vulnerabilities, coordinating stakeholders and facilitating innovative solutions."⁶²² This mission statement seems so broad that it could almost include environmental management and sustainability functions. Despite the significant differences across these mission statements, each agency incorporates similar risk mitigation and consequence management functions. Like organizational mission, the organization's core competence helps describe what it does better than its competitors. Government agencies are not traditionally considered competitors; however, this can be useful in promoting why a local emergency management department may be better suited to providing disaster assistance than the library.

Unlike organizational goals, which are broad, stable, and set the direction for the entire organization, operating goals are more specific and describe the specific, measurable

⁶¹⁸ Daft, 55.

⁶¹⁹ Daft, 55.

⁶²⁰ Federal Emergency Management Agency, *2022–2026 FEMA Strategic Plan: Building the FEMA Our Nation Needs and Deserves* (Washington, DC: Federal Emergency Management Agency, 2022), 5, https://www.fema.gov/sites/default/files/documents/fema_2022-2026-strategic-plan.pdf.

⁶²¹ "West Virginia Department of Homeland Security," West Virginia Department of Homeland Security, accessed July 3, 2022, <https://dhs.wv.gov/Pages/default.aspx>.

⁶²² "Office of Resilience," Miami-Dade County, accessed July 3, 2022, <https://www.miamidade.gov/global/economy/resilience/home.page>.

outcomes the organization is trying to achieve.⁶²³ These are crafted with shorter-term timelines and closely align with the tasks that the organization will perform.⁶²⁴ Operating goals can help establish a standard of assessment for the organization.⁶²⁵ This standard will likely include performance measurements used to determine how effective the organization has been at achieving its goals.⁶²⁶ Government risk mitigation and consequence management organizations are not concerned with profitability but may establish performance measures related to the delivery of services to constituents.⁶²⁷ For an emergency management agency, examples could include the number of attendees participating in a community preparedness training event or the number of buildings removed from the floodplain. These performance targets, typically established in strategic plans or annual budgets, are likely to drive the strategy and goals contingency factor, focusing attention on projects and activities likely to be measured throughout the year.⁶²⁸ The cyclical process of crafting operating goals, executing, and measuring performance enables managers to adjust goals and strategies based on the external environment and provide new focus to the organization's resources.⁶²⁹

Like many of the other contingency factors, the availability of resources plays a part. Government risk mitigation and consequence management organizations perform a broad spectrum of activities, from elevating flood-prone structures to conducting active shooter drills. This diverse set of activities creates challenges when aligning an

⁶²³ Charles Perrow, "The Analysis of Goals in Complex Organizations," *American Sociological Review* 26, no. 6 (December 1961): 855, <https://doi.org/10.2307/2090570>; and Daft, *Organization Theory & Design*, 60.

⁶²⁴ Johannes U. Stoelwinder and Martin P. Charns, "The Task Field Model Of Organization Analysis and Design," *Human Relations* 34, no. 9 (September 1981): 748, <https://doi.org/10.1177/001872678103400902>; and Anthony P. Raia, *Managing by Objectives* (Glenview, IL: Scott, Foresman & Co., 1974), 37–40, <http://archive.org/details/managingbyobject0000raia>.

⁶²⁵ Daft, *Organization Theory & Design*, 62.

⁶²⁶ Daft, 53.

⁶²⁷ Daft, 58.

⁶²⁸ Sirney, "Does Theory Matter?," 34; and Manning, "Exploring the Process of Strategic Planning," 170.

⁶²⁹ Daft, *Organization Theory & Design*, 53–54.

organization to a specific mission and preventing conflicting goals.⁶³⁰ With limited resources and staff, leadership may defer or narrow some goals to effectively support the organization's mission.⁶³¹ Time-sensitive disasters may shift goals and strategies to specific deliverables aligned with the crisis. For instance, all preparedness activities may be suspended to enable all risk mitigation and consequence management resources to focus on response and recovery. Employees of these organizations are frequently repurposed to assist in response roles as needed.⁶³²

The broad activities contained within consolidated risk mitigation and consequence management organization portfolios can also result in disagreements about priorities across managers, especially if the organization's leader has more experience in one facet of the operations.⁶³³ For example, a former law enforcement officer now leading an emergency management agency may place more organizational attention and resources towards terrorism prevention goals versus natural hazard mitigation goals.⁶³⁴ The manager of a consolidated risk mitigation and consequence management agency must be able to orient all goals toward the organization's mission to prevent manipulation, avoidance, or defiance from one part of the organization over another.⁶³⁵ Clear, unified, and cohesive goals can motivate the organization's workforce toward specific outcomes and improve performance.⁶³⁶

⁶³⁰ Anne-Claire Pache and Felipe Santos, "Inside the Hybrid Organization: Selective Coupling as a Response to Competing Institutional Logics," *Academy of Management Journal* 56, no. 4 (August 2013): 974, <https://www.jstor.org/stable/43589202>.

⁶³¹ Daft, *Organization Theory & Design*, 60.

⁶³² National Governors' Association, *State Comprehensive Emergency Management*, 214; and Currie, *FEMA Disaster Workforce*, 8.

⁶³³ Gaim et al., "Analyzing Competing Demands in Organizations," 1–2.

⁶³⁴ Savitt, "Role of the County Emergency Manager," 92; and Walter S. Topp, "Making the Transition from Law Enforcement to Emergency Management: Organizational, Occupational, and Cultural Issues," *Journal of Emergency Management* 17, no. 1 (2019): 46, <https://doi.org/10.5055/jem.2019.0396>.

⁶³⁵ Daft, *Organization Theory & Design*, 60.

⁶³⁶ Gary P. Latham and Edwin A. Locke, "Enhancing the Benefits and Overcoming the Pitfalls of Goal Setting," *Organizational Dynamics* 35, no. 4 (2006): 332–338, <https://doi.org/10.1016/j.orgdyn.2006.08.008>; and Robert L. Porter and Gary P. Latham, "The Effect of Employee Learning Goals and Goal Commitment on Departmental Performance," *Journal of Leadership & Organizational Studies* 20, no. 1 (February 2013): 62–63, <https://doi.org/10.1177/1548051812467208>.

Most risk mitigation and consequence management entities have goals that align with trying to reduce risk from threats and hazards; however, the strategies that define how they will meet those goals can vary.⁶³⁷ A resilience office may implement strategies that provide essential social safety net services to disadvantaged populations to mitigate disaster impacts. On the other hand, a homeland security office may craft strategies to develop intelligence networks to interdict and prevent an incident from being created by an adversary. Strategies are where most of the differentiation exists between consolidated risk mitigation and consequence management organizations.

Much of the literature on strategy is from a lens of making an organization more competitive to other firms, which is typically not applicable to government entities. But, just like private sector organizations, government departments within a jurisdiction are vying for many of the same resources. Porter's competitive strategies may help explain some of the consolidation and distribution of risk mitigation and consequence management functions across the government.⁶³⁸ For example, Porter's differentiation strategy frames competitive advantage from the perspective that an organization can distinguish its services from others in the industry.⁶³⁹ This scenario has been a common challenge for emergency management agencies as they have worked to better define their unique role compared to the police or fire department within the jurisdiction.⁶⁴⁰ This dilemma may be extended further when emergency management entities must also compete with homeland security and resilience offices for prominence and resources. In addition, Porter's low-cost leadership strategy describes how a firm might work to reduce its costs compared to its competitors to attract a larger market share.⁶⁴¹ Although this is even more detached from the monopolistic realities of government service delivery, the "marble cake" style of federalism has created many new situations where various levels of government perform

⁶³⁷ Daft, *Organization Theory & Design*, 63.

⁶³⁸ Michael E. Porter, *Competitive Strategy: Techniques for Analyzing Industries and Competitors* (New York: Free Press, 1980), 35.

⁶³⁹ Porter, 37–38.

⁶⁴⁰ Drabek, *Professional Emergency Manager*, 203–4; and Howard, "Organization and Reorganization as Manifestation of Public Policy," 59–60.

⁶⁴¹ Porter, *Competitive Strategy*, 35–37.

the same services side by side. Suppose a local and state emergency management agency provided identical emergency planning services for school districts. In that case, the one with the most cost-efficient operation might likely prevail in the long run.

As a contingency factor, strategy plays a vital role in organization design.⁶⁴² The organization's structure should enable energy and resources to consistently focus on achieving the mission and goals.⁶⁴³ Executives can use the strategic intent to craft the organization using a mechanistic design that is more efficiency-focused or using an organic structure that is more suited for innovation and learning.⁶⁴⁴ When considering Porter's strategy types, the differentiation strategy would lean towards an organic, flexible approach compared to the low-cost leadership strategy, which would benefit significantly from the efficiency-driven mechanistic design.⁶⁴⁵

Like many other contingency factors, the diverse nature of risk mitigation and consequence management functions and associated strategies does not lead to an entirely mechanistic or organic configuration. The strategy and goals for risk mitigation and consequence management at the jurisdiction level would typically benefit from an organic design to support learning and innovation during the wide variety of goals that may be in place. However, when considering the mitigation, preparedness, and recovery functions at the agency level, an efficiency-focused strategy and mechanistic design may produce the best organizational fit. While these functions could also benefit from innovation and learning, efficiency may take priority as jurisdictions seek to maximize their restricted financial, personnel, and material resources outside of a crisis. There is generally more flexibility in less efficient resource deployment if lives, property, and the environment are

⁶⁴² Daft, *Organization Theory & Design*, 69.

⁶⁴³ Daft, 52.

⁶⁴⁴ Daft, 52.

⁶⁴⁵ Daft, 68.

at stake in the response phase of emergency management.⁶⁴⁶ The uncertainty of disasters also drives a greater need for innovation and adaptation focus in response. The strategy and goals contingency factor will vary in orientation across levels of government and in interaction with other contingency factors. Table 7 displays the optimal risk mitigation and consequence management design orientations and characteristics for the goals and strategy contingency factor.

Table 7. Goals and Strategy Contingency Factor Orientations and Characteristics

Emergency Management Phase	Level of Analysis	Optimal Orientation	Design Characteristics
Mitigation	Group or Agency	Mechanistic	Efficiency Strategy
Preparedness	Group or Agency	Mechanistic	Efficiency Strategy
Response	Group or Agency	Organic	Innovation Strategy
Recovery	Group or Agency	Mechanistic	Efficiency Strategy
Multiple (Consolidated)	Group, Agency, or Jurisdiction	Organic	Innovation Strategy

5. Culture

The final contingency factor affecting organizations is culture, known to Daft as “the underlying set of key values, beliefs, understandings, and norms shared by

⁶⁴⁶ Federal Emergency Management Agency, *2012 The State of FEMA: Leaning Forward: Go Big, Go Early, Go Fast, Be Smart*. (Washington, DC: Federal Emergency Management Agency, 2012), 2, https://www.fema.gov/pdf/about/state_of_fema/state_of_fema.pdf; and Eric Holdeman, “Fugate’s Philosophy,” *Government Technology*, December 18, 2018, <https://www.govtech.com/em/emergency-blogs/disaster-zone/fugates-philosophy.html>.

employees.”⁶⁴⁷ He continues noting that, unlike the other formal contingency factors, culture “is the unwritten, feeling part of the organization.”⁶⁴⁸ This “informal structure” can be as important as the formal structure, and everyone in the organization participates. When new policies, structures, and strategies are proposed by managers that go against the values and norms of the organization, it will likely create cultural conflict.⁶⁴⁹ Most importantly, culture helps to support internal integration by crafting a framework for staff to work together under a common identity.⁶⁵⁰ Culture also promotes external adaptation by assisting the organization in crafting methods of achieving goals and working with outside entities.⁶⁵¹

Organizational culture can be seen from two perspectives, one being the visible artifacts and the other being the deeper values instilled in the minds of staff members.⁶⁵² The observable aspects of culture include control systems, power structures, behaviors, symbols, ceremonies, dress codes, and office layouts.⁶⁵³ These characteristics are frequently found in government risk mitigation and consequence management organizations. For example, some emergency management and homeland security agencies require uniforms for staff members, with some examples having badges similar to what might be found by first responders. Other jurisdictions have placed their emergency management director or chief resilience officer as a direct report to the chief executive to

⁶⁴⁷ Daft, *Organization Theory & Design*, 22; W. Jack Duncan, “Organizational Culture: ‘Getting A Fix’ On An Elusive Conce,” *Academy of Management Executive* 3, no. 3 (August 1989): 229, <https://doi.org/10.5465/ame.1989.4274741>; Linda Smircich, “Concepts of Culture and Organizational Analysis,” *Administrative Science Quarterly* 28, no. 3 (September 1983): 353–55, <https://doi.org/10.2307/2392246>; and Andrew D. Brown and Ken Starkey, “The Effect of Organizational Culture on Communication and Information,” *Journal of Management Studies* 31, no. 6 (November 1994): 807–8, 823–24, <https://doi.org/10.1111/j.1467-6486.1994.tb00640.x>.

⁶⁴⁸ Daft, *Organization Theory & Design*, 445.

⁶⁴⁹ Daft, 445.

⁶⁵⁰ Daft, 446.

⁶⁵¹ Daft, 446.

⁶⁵² Daft, 445.

⁶⁵³ Daft, 445; and Micah R. Kee, “Corporate Culture Makes a Fiscal Difference,” *Industrial Management* 45, no. 6 (2003): 19, ProQuest.

craft prominent power structures and control systems.⁶⁵⁴ These artifacts help to create a sense of organizational identity and drive employees to adopt beliefs and values that benefit the organization's vision and strategy.⁶⁵⁵ These visible aspects of culture are what management uses frequently to shape the culture contingency factor.⁶⁵⁶ The second perspective of culture considers the underlying values, beliefs, and assumptions that are not clearly visible.⁶⁵⁷ Many emergency management organizations have adopted the Principles of Emergency Management attributes as underlying values, including being collaborative, progressive, flexible, and integrated.⁶⁵⁸ These underlying aspects of an organization's culture are typically grown through the widespread adoption and institutionalization of its vision and strategy.⁶⁵⁹

Although culture can be assessed in numerous ways, Daft, building on previous work, developed a two-dimensional model to evaluate the culture contingency factor.⁶⁶⁰ The X-axis considers the extent of flexibility or stability in the organization's environment.⁶⁶¹ The Y-axis measures the organization's orientation towards internal or

⁶⁵⁴ Jensen and Kirkpatrick, "Local Emergency Management and Comprehensive Emergency Management (CEM)," 5–6, 9; Durbin, "Organizational Structuring for Homeland Security," 98; Sirney, "Does Theory Matter?," 64; Drabek, *Professional Emergency Manager*, 177–78; and Howard, "Organization and Reorganization as Manifestation of Public Policy," 60–61.

⁶⁵⁵ Edgar H. Schein, *Organizational Culture and Leadership*, 5th ed. (Hoboken, New Jersey: Wiley, 2017), 22; and John P. Kotter and James L. Heskett, *Corporate Culture and Performance* (New York: Free Press, 1992), 4, <http://archive.org/details/corporateculture00kott>.

⁶⁵⁶ Daft, *Organization Theory & Design*, 447; and Gerry Johnson, "Managing Strategic Change—Strategy, Culture and Action," *Long Range Planning* 25, no. 1 (February 1992): 34–36, [https://doi.org/10.1016/0024-6301\(92\)90307-N](https://doi.org/10.1016/0024-6301(92)90307-N).

⁶⁵⁷ Edgar H. Schein, "Organizational Culture," *American Psychologist* 45, no. 2 (February 1990): 111–12, <https://doi.org/10.1037/0003-066X.45.2.109>.

⁶⁵⁸ Federal Emergency Management Agency, *Principles of Emergency Management Supplement* (Washington, DC: Federal Emergency Management Agency, 2007), 4, <https://training.fema.gov/hiedu/docs/emprinciples/Principles%20of%20Emergency%20Management%20Brochure.doc>.

⁶⁵⁹ Daft, *Organization Theory & Design*, 446.

⁶⁶⁰ Daft, 452; James R. Detert, Roger G. Schroeder, and John J. Mauriel, "A Framework for Linking Culture and Improvement Initiatives in Organizations," *Academy of Management Review* 25, no. 4 (October 2000): 854, <https://doi.org/10.2307/259210>; and Daniel R. Denison, *Corporate Culture and Organizational Effectiveness* (New York: Wiley, 1990), 11–15, <http://archive.org/details/corporateculture00deni>.

⁶⁶¹ Daft, *Organization Theory & Design*, 452.

external strategic focus and strength.⁶⁶² This model creates four cultural archetypes, including adaptability culture, achievement culture, clan culture, and bureaucratic culture.⁶⁶³ Each model can help an organization achieve better fit with other contingency factors and structural dimensions.⁶⁶⁴ Like the other contingency factors, the appropriate culture configuration to improve organizational fit can improve performance.⁶⁶⁵ Government risk mitigation and consequence management organizations can attempt to shape the culture towards one of the four models to best match the needs of the external environment and strategic focus.⁶⁶⁶ The four types of culture are shown in Figure 15.

⁶⁶² Daft, 452.

⁶⁶³ Denison, *Corporate Culture and Organizational Effectiveness*, 11–15; Daniel R. Denison and Aneil K. Mishra, “Toward a Theory of Organizational Culture and Effectiveness,” *Organization Science* 6, no. 2 (April 1995): 216–17, <https://doi.org/10.1287/orsc.6.2.204>; Robert Hooijberg and Frank Petrock, “On Cultural Change: Using the Competing Values Framework to Help Leaders Execute a Transformational Strategy,” *Human Resource Management* 32, no. 1 (Spring 1993): 30–31, <https://doi.org/10.1002/hrm.3930320103>; and Robert E. Quinn, *Beyond Rational Management: Mastering the Paradoxes and Competing Demands of High Performance* (San Francisco: Jossey-Bass, 1988), 146–47, <http://archive.org/details/beyondrationalma00quin>.

⁶⁶⁴ Daft, *Organization Theory & Design*, 452.

⁶⁶⁵ Jennifer A. Chatman and Sandra Eunyong Cha, “Leading by Leveraging Culture,” *California Management Review* 45, no. 4 (July 2003): 20–21, <https://doi.org/10.2307/41166186>; and Abby Ghobadian and Nicholas O’regan, “The Link between Culture, Strategy and Performance in Manufacturing SMEs,” *Journal of General Management* 28, no. 1 (September 2002): 16–18, <https://doi.org/10.1177/030630700202800102>.

⁶⁶⁶ Daft, *Organization Theory & Design*, 452.

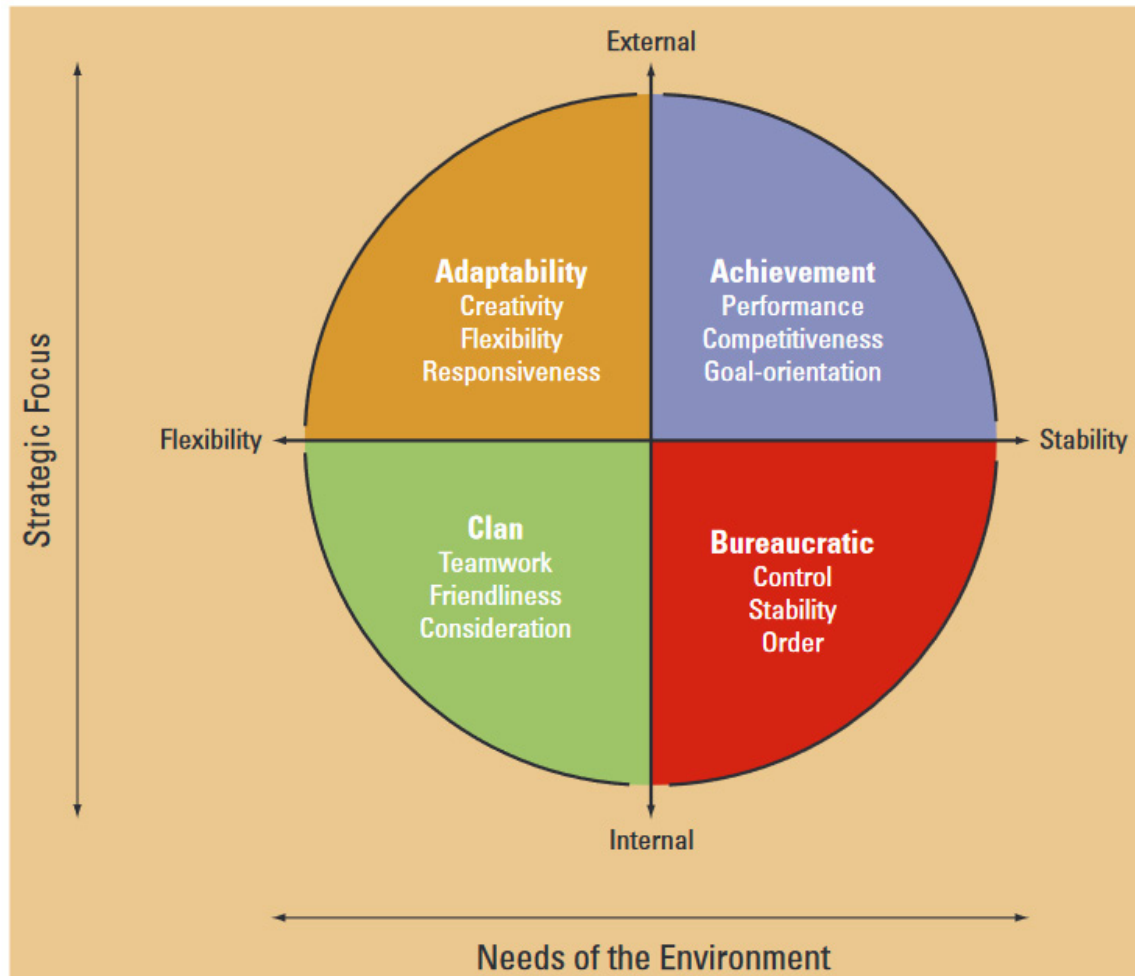


Figure 15. Cultural Archetypes Framework⁶⁶⁷

An adaptability culture is present when the strategic focus is centered on the external environment and is combined with flexibility.⁶⁶⁸ This culture focuses on rapid change to meet customer needs and proactive innovation.⁶⁶⁹ A local emergency management office may fit this category, as they must adapt to rapid environmental changes but think outside the box to establish new risk mitigation and consequence management initiatives. Achievement culture can be found in organizations strategically

⁶⁶⁷ Source: Daft, 452.

⁶⁶⁸ Daft, 453.

⁶⁶⁹ Daft, 453.

focused on the external environment but with general stability.⁶⁷⁰ Goals are essential to this culture, as performance levels are established, and employees are expected to meet them to be rewarded.⁶⁷¹ Mitigation, preparedness, and recovery departments could be oriented towards this category as they work to accomplish organizational goals in a reasonably stable environment.

In a rapidly changing environment, the clan culture shifts the strategic focus internally.⁶⁷² In this culture, employees are placed front and center, with significant effort to keep them happy and productive.⁶⁷³ Although there have been greater efforts to improve opportunities for employee professional development and flexibility, being a government agency restricts many of the techniques used by the private sector to achieve this type of culture. The final culture type is bureaucratic, focused internally on consistency and stability.⁶⁷⁴ Much of this type of culture can be found in larger organizations like FEMA, where greater emphasis is placed on integration and conformity with other government agencies.

Daft believes culture is commonly seen as the “glue that holds the organization members together,” but it can differ across risk mitigation and consequence management organization types and even within organizations.⁶⁷⁵ The degree of agreement among the organization’s members about the importance of values can be seen as the measure of culture strength.⁶⁷⁶ For example, emergency management and homeland security organizations housed within a law enforcement agency or containing former law

⁶⁷⁰ Daft, 453.

⁶⁷¹ Daft, 453.

⁶⁷² Daft, 454.

⁶⁷³ Daft, 454.

⁶⁷⁴ Daft, 454.

⁶⁷⁵ Daft, 22; D.D. Warrick, “What Leaders Need to Know About Organizational Culture,” *Business Horizons* 60, no. 3 (May 2017): 397–400, <https://doi.org/10.1016/j.bushor.2017.01.011>; and William L. Waugh, “The Fiscal Risk of All-Hazards Emergency Management or the Political Hazards in Rational Policy,” *International Journal of Public Administration* 22, no. 5 (January 1999): 628–30, <https://doi.org/10.1080/01900699908525398>.

⁶⁷⁶ Bernard Arogyaswamy and Charles M. Byles, “Organizational Culture: Internal and External Fits,” *Journal of Management* 13, no. 4 (Winter 1987): 649–51, <https://doi.org/10.1177/014920638701300406>.

enforcement personnel may drive a culture different than what might be found in a resilience office within a community development organization and primarily employs individuals with a community planning background.⁶⁷⁷ Traditional comprehensive emergency management agencies with functions ranging from emergency response to hazard mitigation may recruit employees from various backgrounds, potentially leading to a weak and clashing culture.⁶⁷⁸ Because emergency management still employs many as a second career from the fire service, law enforcement, and the military, values and norms learned in those careers may transfer to their service within the emergency management organization.⁶⁷⁹ The style of leadership exhibited by management can also affect the organization's culture. If the leadership style employed is not in sync with the needs of employees, it can create a challenging relationship between management and staff.

⁶⁷⁷ Rebecca M. Rice, "Collaborative Organizing for All Hazards: Translation of Security in Local Emergency Management" (PhD diss., University of Colorado at Boulder, 2019), 18–19, 31, 77–78, 82, 86, 93, 124–29, 145, https://scholar.colorado.edu/concern/graduate_thesis_or_dissertations/bn999778q; Jensen and Kirkpatrick, "Local Emergency Management and Comprehensive Emergency Management (CEM)," 8; Topp, "Making the Transition from Law Enforcement to Emergency Management," 48–49; and Waugh, "The Fiscal Risk of All-Hazards Emergency Management or the Political Hazards in Rational Policy," 628–30.

⁶⁷⁸ Tierney, "Recent Developments in U.S. Homeland Security Policies," 5–7; Susan E. Clarke and Erica Chenoweth, "The Politics of Vulnerability: Constructing Local Performance Regimes for Homeland Security," *Review of Policy Research* 23, no. 1 (January 2006): 110, <https://doi.org/10.1111/j.1541-1338.2006.00187.x>; Choi, "Emergency Management," 8; Ismail Soujaa, Julius A. Nukpezah, and Abraham David Benavides, "Coordination Effectiveness During Public Health Emergencies: An Institutional Collective Action Framework," *Administration & Society* 53, no. 7 (August 2021): 1015, <https://doi.org/10.1177/0095399720985440>; Susan Wolf-Fordham, "Integrating Government Silos: Local Emergency Management and Public Health Department Collaboration for Emergency Planning and Response," *American Review of Public Administration* 50, no. 6–7 (2020): 562–63, <https://doi.org/10.1177/0275074020943706>; Kahan, "Emergency Management and Homeland Security," 484; Bea, *Proposed Transfer of FEMA*, 17; National Academy of Public Administration, *Coping with Catastrophe*, 43; Waugh, "The Fiscal Risk of All-Hazards Emergency Management or the Political Hazards in Rational Policy," 628–30; and Howard, "Organization and Reorganization as Manifestation of Public Policy," 137, 201.

⁶⁷⁹ Chang and Neal, "Promotion or Transition," 107–8; Jensen and Kirkpatrick, "Local Emergency Management and Comprehensive Emergency Management (CEM)," 9–10; Tierney, "Recent Developments in U.S. Homeland Security Policies," 5–7; Clarke and Chenoweth, "The Politics of Vulnerability," 110; Rice, "Collaborative Organizing for All Hazards," 82, 145; and Mike Gutierrez and Edward Valla, "Law Enforcement and Emergency Management: The Role of Policing During Disasters," in *The Distributed Functions of Emergency Management and Homeland Security: An Assessment of Professions Involved in Response to Disasters and Terrorist Attacks*, ed. David A. McEntire (Boca Raton, FL: CRC Press, 2023), 67, <https://doi.org/10.4324/9781003350729>.

These cultural differences may result in subcultures focused around specific organizational departments or teams.⁶⁸⁰ These subcultures are much more likely in larger organizations where it is difficult to build a uniform culture throughout.⁶⁸¹ Consider the various subcultures that might exist within the Department of Homeland Security or at FEMA due to their functional and geographic diversity.⁶⁸² Subcultures align closely with Lawrence and Lorsch's research on differentiation, where organizing teams with different values within separate departments may maximize organizational effectiveness and minimize intragroup conflict.⁶⁸³

Organizations that do not have the needed resources to fulfill their mission can experience negative impacts on culture.⁶⁸⁴ Employees may feel neglected by leadership and perceive their work as unimportant. The frequency and type of threats and hazards impacting the jurisdiction may also affect culture. If staff are overworked due to successive disasters, the culture may be tense if employees do not feel supported.⁶⁸⁵ However,

⁶⁸⁰ Daft, *Organization Theory & Design*, 456.

⁶⁸¹ Daft, 456.

⁶⁸² Howard, "Organization and Reorganization as Manifestation of Public Policy," 198.

⁶⁸³ Lawrence and Lorsch, "Differentiation and Integration in Complex Organizations," 10; Lorsch and Lawrence, "Environmental Factors and Organizational Integration," 20; Lorsch, "Introduction to the Structural Design of Organizations," 5; and Hyon Namgung, "How Do Specialized Units Affect the Outputs of Police Organizations?: Investigating the Effect of Community Policing Units on Community Policing Activities in Local Police Departments" (PhD diss., University of Missouri-St. Louis, 2013), 20, <https://irl.umsl.edu/dissertation/268>.

⁶⁸⁴ Kreps, "Organizing for Emergency Management," 46, 48; Robert O. Schneider, "A Strategic Overview of the 'New' Emergency Management" (FEMA Higher Education Conference, Emmitsburg, MD, June 9, 2005), 5–6, <https://training.fema.gov/HiEdu/downloads/SchneiderStrategicOverview.doc>; David A. McEntire, "A Critique of Emergency Management Policy: Recommendations to Reduce Disaster Vulnerability," *International Journal of Public Policy* 3, no. 5/6 (February 1, 2008): 306, <https://doi.org/10.1504/IJPP.2008.020984>; Choi, "Emergency Management," 3; Stevenson and Hayman, *Local Government Disaster Protection*, 36–37; and National Academy of Public Administration, *Coping with Catastrophe*, 62–63.

⁶⁸⁵ Kelsey L. Merlo et al., "Burnout in the Disaster Response Workforce: The Impact of Work Roles and the COVID-19 Pandemic," *Journal of Emergency Management* 19, no. 9 (2021): 87–88, <https://doi.org/10.5055/jem.0593>; Kelsey L. Merlo et al., "Engaged, Overextended, or Burned Out: What Is the State of the Disaster Response Workforce?," *Journal of Emergency Management* 19, no. 9 (2021): 165–66, <https://doi.org/10.5055/jem.0638>; and Currie, *FEMA Disaster Workforce*, 21.

frequent disasters may also create an environment where staff feel empowered due to their contribution to society and the organization's growing expertise.⁶⁸⁶

Kotter and Heskett's research demonstrated that organizations that worked to shape their culture saw increased performance compared to their peers.⁶⁸⁷ Strong and well-fitting cultures have been connected to improved organizational performance in the private sector realm.⁶⁸⁸ The optimal configuration is senior management that considers the importance of organizational goals while cultivating a robust and high-performance culture.⁶⁸⁹ High-performance culture includes a solid organizational purpose, shared values that guide decisions, and employee ownership of results and culture.⁶⁹⁰ Organizations like FEMA have emphasized the importance of high-performance culture as an essential aspect of their mission.⁶⁹¹

Within the analytical framework used in this thesis, the culture contingency factor may be oriented towards an organic design at the jurisdiction level and when assessing a consolidated risk mitigation and consequence management agency. An organic adaptability culture would provide enough flexibility and external focus to improve organizational fit. When considering an agency or department that only performs mitigation, preparedness, or recovery activities, the mechanistic-oriented achievement

⁶⁸⁶ Sandra K. Schneider, "Reinventing Public Administration: A Case Study of the Federal Emergency Management Agency," *Public Administration Quarterly* 22, no. 1 (1998): 43, <https://www.jstor.org/stable/40861734>.

⁶⁸⁷ Kotter and Heskett, *Corporate Culture and Performance*, 141–52.

⁶⁸⁸ Kotter and Heskett, 28–43; Charles A. O'Reilly et al., "The Promise and Problems of Organizational Culture: CEO Personality, Culture, and Firm Performance," *Group & Organization Management* 39, no. 6 (December 2014): 616–18, <https://doi.org/10.1177/1059601114550713>; Eric Flamholtz and Rangapriya Kannan-Narasimhan, "Differential Impact of Cultural Elements on Financial Performance," *European Management Journal* 23, no. 1 (February 2005): 63, <https://doi.org/10.1016/j.emj.2004.12.009>; and James M. Kouzes and Barry Z. Posner, *The Leadership Challenge: How to Make Extraordinary Things Happen in Organizations*, 7th ed. (Hoboken, NJ: Wiley, 2023), 101–10.

⁶⁸⁹ Daft, *Organization Theory & Design*, 460.

⁶⁹⁰ Jeff Rosenthal and Mary Ann Masarech, "High-Performance Cultures: How Values Can Drive Business Results," *Journal of Organizational Excellence* 22, no. 2 (Spring 2003): 4, <https://doi.org/10.1002/npr.10062>.

⁶⁹¹ Federal Emergency Management Agency, *We Are FEMA: Helping People Before, During, and After Disasters* (Washington, DC: Federal Emergency Management Agency, 2019), 3, https://www.fema.gov/sites/default/files/2020-03/publication-one_english_2019.pdf.

culture may be appropriate due to the stability of the environment. Organizations with an emergency response mission would still likely benefit from an adaptability culture. It is unlikely that any organization will have a wholly organic or mechanistic culture but may encounter numerous subcultures. Table 8 displays the optimal risk mitigation and consequence management design orientations and characteristics for the culture contingency factor.

Table 8. Culture Contingency Factor Orientations and Characteristics

Emergency Management Phase	Level of Analysis	Optimal Orientation	Design Characteristics
Mitigation	Group or Agency	Mechanistic	Rigid Culture
Preparedness	Group or Agency	Mechanistic	Rigid Culture
Response	Group or Agency	Organic	Adaptive Culture
Recovery	Group or Agency	Mechanistic	Rigid Culture
Multiple (Consolidated)	Group, Agency, or Jurisdiction	Organic	Adaptive Culture

D. STRUCTURAL DIMENSIONS

1. Formalization

Formalization is associated with the quantity of written documentation within an organization.⁶⁹² With any government agency, there's a significant level of formalization through standard operating procedures, regulations, policies, and rules.⁶⁹³ In the context of organization design, high formalization would be mechanistic.⁶⁹⁴ The goal of

⁶⁹² Daft, *Organization Theory & Design*, 19.

⁶⁹³ Daft, 31; Drabek, *Professional Emergency Manager*, 29; and Donald P. Moynihan, "From Intercrisis to Intracrisis Learning," *Journal of Contingencies and Crisis Management* 17, no. 3 (September 2009): 195, <https://doi.org/10.1111/j.1468-5973.2009.00579.x>.

⁶⁹⁴ Daft, *Organization Theory & Design*, 31.

formalization is to align activities to standards and goals.⁶⁹⁵ Organizations with few formal control systems or rules would likely be considered more like an organic design.⁶⁹⁶ The smaller the agency and jurisdiction, the more likely the organization will encounter organic elements that enable informal communication and information sharing across stakeholders.⁶⁹⁷

When looking at risk mitigation and consequence management organizations, entities at the federal and state level have significantly more formalized organizations. Agencies like the U.S. Department of Homeland Security (DHS) and the FEMA have considerable volumes of procedures, job descriptions, regulations, and policy manuals describing the behavior and activities of the organization.⁶⁹⁸ Like the other elements that help categorize organizations across the mechanistic/organic continuum, risk mitigation and consequence management agencies do not fall solely within the mechanistic style. On the opposite end of the spectrum, a local emergency management or resilience office may have a substantially less formal organization simply due to the lack of bandwidth from employees to create the documentation. Many behaviors and activities are seen as institutional knowledge within the few employees of those smaller risk mitigation and consequence management organizations.⁶⁹⁹

At the jurisdiction level and consolidated risk mitigation and consequence management agency level, fewer rules and an informal design would provide a more flexible and organic fit across all phases of emergency management. Additional rules and formalization may be applied to structures focused on mitigation, preparedness, and recovery activities or within larger organizations to improve standardization and efficiency.

⁶⁹⁵ Daft, 31.

⁶⁹⁶ Daft, 31.

⁶⁹⁷ Daft, 31.

⁶⁹⁸ Daft, 19; “Office of Policy & Program Analysis,” Federal Emergency Management Agency, May 24, 2023, <https://www.fema.gov/about/offices/policy-program>; “Doctrine Hierarchy,” IS-0822: Fundamentals of Management and Support Coordination of Federal Disaster Operations, November 27, 2013, https://emilms.fema.gov/is_0822/groups/435.html; and Roberts, “Dispersed Federalism,” 416.

⁶⁹⁹ Daft, *Organization Theory & Design*, 19; Ronald W. Perry and Michael K. Lindell, “Preparedness for Emergency Response: Guidelines for the Emergency Planning Process,” *Disasters* 27, no. 4 (2003): 340, <https://doi.org/10.1111/j.0361-3666.2003.00237.x>.

Response-oriented agencies or departments would still benefit from a less formalized design. Table 9 displays the optimal risk mitigation and consequence management design orientations and characteristics for the formalization structural dimension.

Table 9. Formalization Structural Dimension Orientations and Characteristics

Emergency Management Phase	Level of Analysis	Optimal Orientation	Design Characteristics
Mitigation	Group or Agency	Mechanistic	Many Rules, Formalized
Preparedness	Group or Agency	Mechanistic	Many Rules, Formalized
Response	Group or Agency	Organic	Few Rules, Informal
Recovery	Group or Agency	Mechanistic	Many Rules, Formalized
Multiple (Consolidated)	Group, Agency, or Jurisdiction	Organic	Few Rules, Informal

2. Specialization

Specialization, or the division of labor, encompasses dividing organizational tasks into separate jobs.⁷⁰⁰ A significant aspect of organizational design is dividing work amongst the organization and staff. In mechanistic organizations, narrowly defined and specialized pieces of work called tasks are assigned to employees.⁷⁰¹ The goal is to perform these individual tasks in an interconnected machine-like approach using defined job descriptions.⁷⁰² This approach differs from organic design, where employees are given flexible roles within the organization that enable more judgment to be used in determining how activities will be completed toward achieving goals.⁷⁰³

⁷⁰⁰ Daft, *Organization Theory & Design*, 19.

⁷⁰¹ Daft, 31.

⁷⁰² Daft, 31.

⁷⁰³ Daft, 31.

Similar to formalization, there are significant differences between larger federal and state risk mitigation and consequence management organizations compared to smaller jurisdictions, resulting in a mixture of mechanistic and organic approaches to dividing work. In larger organizations at the state or federal level, organizational tasks are divided into specialized roles.⁷⁰⁴ For example, the agency would have employees that cover specific tasks across the hazard mitigation process, including engineers, external affairs specialists, project managers, and senior leaders that provide oversight.⁷⁰⁵ The same would go for activities within the other phases of emergency management, including very specialized workforces in preparedness, response, and recovery. However, a small local emergency management entity with limited staff would be the opposite, with a much lower specialization, with one or two staff members serving as generalists covering tasks and activities across all phases of emergency management.⁷⁰⁶ These jurisdictions adopt an organic design where the organization's leader and available staff have roles that are redefined and shifted as needs change. Despite greater functional specialization in larger risk mitigation and consequence management organizations, the adoption of the "all hazards" construct since the 1990s has reduced the amount of hazard-specific specialization within emergency management agencies as personnel have responsibility for functions across a wide spectrum of hazards.⁷⁰⁷

Because the employees of those smaller agencies must perform a diverse selection of tasks, they are more likely to require technical assistance from higher levels of government or consultants for more specialized activities. Those smaller emergency management organizations may also leverage other specialized non-emergency management staff from other "enabling" entities like legal, financial, logistical, and human resources that provide services across numerous jurisdictional departments. It is

⁷⁰⁴ Daft, 19; and May, "FEMA's Role in Emergency Management," 46.

⁷⁰⁵ "Colorado Emergency Management Office Organization Chart," Colorado Division of Homeland Security & Emergency Management, July 12, 2022, <https://dhsem.colorado.gov/dhsem/dhsem-organization-chart/emergency-management-office-organization-chart>.

⁷⁰⁶ Daft, *Organization Theory & Design*, 19; Edwards and Goodrich, "Organizing for Emergency Management," 44; and "Organization Chart," Randolph County, accessed July 9, 2023, <https://www.randolphcountync.gov/232/Organization-Chart>.

⁷⁰⁷ DeLorenzo, "FEMA and the Merger with DHS," 61.

improbable that a local emergency management organization would have its own internal human resources specialist. However, an entity like FEMA contains entire departments for this function, including highly specialized human resources staff, recruiters, payroll analysts, benefits generalists, and other roles.⁷⁰⁸ Because of this, a small local emergency management agency is likely to rely on a shared human resources department that provides services within their municipal or county government.

At the jurisdiction level and consolidated risk mitigation and consequence management agency level, implementing empowered roles would provide a more flexible and organic fit across all phases of emergency management. Specialized tasks may be applied to designs focused on mitigation, preparedness, and recovery activities or within larger organizations to maximize the benefits of dividing labor. Response-oriented agencies or departments would still benefit from a less specialized design. Table 10 displays the optimal risk mitigation and consequence management design orientations and characteristics for the specialization structural dimension.

Table 10. Specialization Structural Dimension Orientations and Characteristics

Emergency Management Phase	Level of Analysis	Optimal Orientation	Design Characteristics
Mitigation	Group or Agency	Mechanistic	Specialized Tasks
Preparedness	Group or Agency	Mechanistic	Specialized Tasks
Response	Group or Agency	Organic	Empowered Roles
Recovery	Group or Agency	Mechanistic	Specialized Tasks
Multiple (Consolidated)	Group, Agency, or Jurisdiction	Organic	Empowered Roles

⁷⁰⁸ National Academy of Public Administration, *Coping with Catastrophe*, 56.

3. Hierarchy of Authority

The hierarchy of authority provides an overview of an organization's reporting structure, including who reports to whom and the size of the span of control for each manager.⁷⁰⁹ A strict vertical hierarchy of authority can be found within mechanistic organizations, greatly emphasizing the chain of command.⁷¹⁰ There is minimal collaboration across the departments within this style of organization.⁷¹¹ Organic organizations take a different approach, focusing heavily on collaborative teamwork that originates from horizontal workflows or processes rather than departmental boundaries.⁷¹²

Strict vertical hierarchy is pervasive in government risk mitigation and consequence management agencies where work is organized within common functional areas like mitigation, preparedness, response, and recovery. Unlike the previous structural dimensions, this category does not see significant differences in application across jurisdiction levels or types of risk mitigation and consequence management organizations. Large agencies like FEMA will create numerous levels of middle managers to prevent extensive spans of control.⁷¹³ If a local emergency management office has more than a few staff members, it is common to see mid-level supervisors implemented to maintain a manageable span of control.⁷¹⁴

An important related concept to the hierarchy of authority is who the most senior emergency management or risk mitigation and consequence management manager reports

⁷⁰⁹ Daft, *Organization Theory & Design*, 19.

⁷¹⁰ Daft, 31.

⁷¹¹ Daft, 31.

⁷¹² Daft, 31.

⁷¹³ "U.S. Department of Homeland Security / FEMA Org Chart," Federal Emergency Management Agency, February 1, 2023, https://www.fema.gov/sites/default/files/graphics/fema_org-chart_20230201.jpg.

⁷¹⁴ "Office of Emergency Management Staff," City of Philadelphia, July 8, 2023, <https://www.phila.gov/departments/oem/about/staff/>; and "Emergency Management Department Leadership & Organization," City of Los Angeles, accessed July 9, 2023, <https://emergency.lacity.gov/about/leadership-organization>.

to within the organization.⁷¹⁵ If the risk mitigation and consequence management function is embedded deeply into another department rather than reporting to the jurisdiction's chief executive, and vertical hierarchy is strictly enforced, critical decisions will be required to navigate a series of superordinate managers who may not have appropriate expertise. To provide more flexibility for response activities, many risk mitigation and consequence management organizations without day-to-day access to the jurisdiction's chief executive frequently have provisions to allow for temporary reporting linkages during an emergency.⁷¹⁶

Organic collaborative teamwork is not unfamiliar with emergency management and risk mitigation and consequence management functions, but it may not be used as frequently or as effectively as it could. For example, during emergency response, the Incident Command System (ICS) is utilized to bring together ad hoc interdepartmental and intergovernmental teams to manage resources and personnel.⁷¹⁷ However, ICS uses a very mechanistic style of hierarchy in its implementation.⁷¹⁸ Multidisciplinary self-directed teams are also established to work on projects within other risk mitigation and consequence management functions, including mitigation, preparedness, and recovery activities. In smaller agencies, the problem of collaboration between risk mitigation and consequence management functions naturally diminishes as only a few generalist employees are available to fill multiple roles on a project. Despite the more frequent use of collaborative, organic structures, most emergency management work can be found organized in

⁷¹⁵ Dennis E. Wenger and Thomas E. Drabek, "Emergency Preparedness and Response Planning: An Overview of Seismic Policy Related Issues" (working paper, Disaster Research Center, 1987), 59–65, <http://udspace.udel.edu/handle/19716/494>; Drabek, *Professional Emergency Manager*, 177–78, 194–96; Stevenson and Hayman, *Local Government Disaster Protection*, 35, 54; Jensen and Kirkpatrick, "Local Emergency Management and Comprehensive Emergency Management (CEM)," 5–6, 9; Durbin, "Organizational Structuring for Homeland Security," 98; Sirney, "Does Theory Matter?," 64; and National Academy of Public Administration, *Coping with Catastrophe*, 34–35, 51, 105.

⁷¹⁶ William O. Jenkins, Jr., *Actions to Implement the Post-Katrina Act*, GAO-09-59R (Washington, DC: Government Accountability Office, 2008), 10, <https://www.gao.gov/assets/gao-09-59r.pdf>; Office of Inspector General, *FEMA*, 8; and National Emergency Management Association, *NEMA Biennial Report 2022*, 9.

⁷¹⁷ Jensen and Thompson, "Incident Command System," 159; and Nowell and Steelman, "Beyond ICS," 1.

⁷¹⁸ Nowell and Steelman, "Beyond ICS," 1; and Chang and Trainor, "Balancing Mechanistic and Organic Design Elements," 263.

functional silos aligned to the phases of emergency management (i.e., mitigation, preparedness, response, and recovery).⁷¹⁹

At the jurisdiction level and consolidated risk mitigation and consequence management agency level, promoting collaborative teamwork rather than a strict hierarchy of authority would enable a more organic fit across all phases of emergency management. Mitigation, preparedness, and recovery activities, and larger organizations may benefit from a more mechanistic and strict hierarchy of authority to ensure consistency with the delivery of stable risk mitigation and consequence management services. Despite promoting mechanistic-oriented ad hoc hierarchies like ICS for emergency response, collaborative teamwork is necessary for response-oriented agencies or departments. Table 11 displays the optimal risk mitigation and consequence management design orientations and characteristics for the hierarchy of authority structural dimension.

Table 11. Hierarchy of Authority Structural Dimension Orientations and Characteristics

Emergency Management Phase	Level of Analysis	Optimal Orientation	Design Characteristics
Mitigation	Group or Agency	Mechanistic	Strict Hierarchy of Authority
Preparedness	Group or Agency	Mechanistic	Strict Hierarchy of Authority
Response	Group or Agency	Organic	Collaborative Teamwork
Recovery	Group or Agency	Mechanistic	Strict Hierarchy of Authority
Multiple (Consolidated)	Group, Agency, or Jurisdiction	Organic	Collaborative Teamwork

⁷¹⁹ Ralph G. Lewis, “Management Issues in Emergency Response,” in *Managing Disaster: Strategies and Policy Perspectives*, ed. Louise K. Comfort (Durham, NC: Duke University Press, 1988), 174–76, https://archive.org/details/managingdisaster0000unse_n4t3; Hollis, “A Tale of Two Federal Emergency Management Agencies,” 1–2; and Hogue and Bea, *Federal Emergency Management and Homeland Security Organization*, 18.

4. Complexity

Traditionally, complexity is measured across three dimensions, including vertical, horizontal, and spatial.⁷²⁰ Vertical complexity considers the number of levels in the hierarchy.⁷²¹ Vertical complexity leverages the economies of specialization, as roles in higher levels in the organizational structure are more generalist than those that are lower.⁷²² Horizontal complexity focuses on the number of departments or occupational specialties across the organization. Spatial complexity encompasses the geographic dispersion of departments and personnel.⁷²³

Complexity impacts communication within organizations, with mechanistic and organic organizations flowing in different directions.⁷²⁴ In mechanistic organizations, communication is much more formalized, with information flowing vertically between employees and supervisors and back down to other employees.⁷²⁵ This communication tends to result in goals, strategies, and directions being pushed down by managers and problems, status reporting, and additional information being pushed back up.⁷²⁶ Conversely, organic organizations promote more flexible communications, sharing information horizontally and vertically across departments and hierarchical levels.⁷²⁷ In addition to robust information sharing across the organization, organic organizations communicate frequently with external organizations to enhance their capabilities.⁷²⁸

Risk mitigation and consequence management organizations can vary in complexity due to the disparate nature of their activities and jurisdictional responsibilities.

⁷²⁰ Daft, *Organization Theory & Design*, 20.

⁷²¹ Drabek, *Professional Emergency Manager*, 29.

⁷²² Turkulainen and Ketokivi, “The Contingent Value of Organizational Integration,” 33.

⁷²³ Daft, *Organization Theory & Design*, 20.

⁷²⁴ Daft, 31.

⁷²⁵ Daft, 31.

⁷²⁶ Daft, 31.

⁷²⁷ Daft, 31.

⁷²⁸ Gresov, “Exploring Fit and Misfit,” 432, 436, 438; and Daft, *Organization Theory & Design*, 14, 31.

Frequently federal agencies have the most extensive vertical complexity with numerous levels of cascading departments, divisions, and units. The levels of knowledge and expertise become more generalized towards higher levels of hierarchy. For example, the FEMA headquarters Office of Response and Recovery contains the Response Directorate, the Recovery Directorate, the Field Operations Directorate, Field Leadership Directorate, and the Logistics Management Directorate.⁷²⁹ The staff and leadership at the Office of Response and Recovery are generally expected to contain general knowledge and expertise across the five Directorates that report to them.⁷³⁰ In consolidated emergency management and other risk mitigation and consequence management organizations, if leadership does not have experience or education across all functional areas they are responsible for, they may not communicate effective goals and strategies for those unfamiliar areas. Likewise, they may not know how to process information from employees in unfamiliar divisions effectively.

An agency like FEMA has a high level of horizontal complexity across numerous departments ranging from Resilience, Response & Recovery, Mission Support, the U.S. Fire Administration, and many other enabling offices.⁷³¹ Within each department, the horizontal complexity spreads with further specialization. FEMA is not as horizontally complex as the DHS, which contains numerous entities ranging from organizations with similar emergency management functions like the Cybersecurity and Infrastructure Security Agency (CISA) to groups that perform no risk mitigation and consequence management role like the U.S. Immigration & Customs Enforcement (ICE).⁷³² As the organization being evaluated becomes more local, the horizontal complexity will likely be reduced as disparate functions are organized into consolidated departments. A typical example found in state emergency management agencies is the consolidation of

⁷²⁹ Federal Emergency Management Agency, “U.S. Department of Homeland Security / FEMA Org Chart.”

⁷³⁰ Turkulainen and Ketokivi, “The Contingent Value of Organizational Integration,” 33.

⁷³¹ Federal Emergency Management Agency, “U.S. Department of Homeland Security / FEMA Org Chart.”

⁷³² Roberts, “Dispersed Federalism,” 422.

preparedness and response functions within one department and mitigation and recovery functions within another due to the similar nature of tasks and activities.

DHS, FEMA, and other federal risk mitigation and consequence management agencies are typically the most spatially complex. Because federal agencies are responsible for providing services across the United States, most have regional field offices associated with the common ten federal regions.⁷³³ FEMA is so spatially complex that they have established regional offices that mimic the vertical and horizontal complexity at the national headquarters level.⁷³⁴ Other agencies like the U.S. Health and Human Services Administration for Strategic Preparedness and Response and CISA have regional offices aligned with the ten federal regions, although with much smaller and more generalized staff. Spatial complexity is more uncommon at the state jurisdiction level and generally non-existent at the local jurisdiction level. Some larger state emergency management agencies have field offices or staff assigned to locations throughout the state to provide better access and support to local jurisdictions.⁷³⁵

Due to frequent communications with external stakeholders, organic structures can support the shared intergovernmental practice of risk mitigation and consequence management.⁷³⁶ If all risk mitigation and consequence management functions are closely interrelated, organic horizontal communications become essential within jurisdictions that have distributed these functions in multiple departments. For example, suppose the emergency management agency is working to acquire a grant-funded piece of response equipment with the support of the homeland security agency and must process all communications formally through both agencies' shared leadership in the higher-level public safety department. In that case, it dramatically reduces agility and efficiency. Still, many functions within consolidated emergency management agencies do not require

⁷³³ Office of Inspector General, *Inspection of FEMA's Regional Offices*, 2–5.

⁷³⁴ National Academy of Public Administration, *Coping with Catastrophe*, 58.

⁷³⁵ “TDEM Expands Presence in Texas with Launch of County Liaison Officer Program,” Texas Division of Emergency Management, April 4, 2022, <https://www.tdem.texas.gov/press-release/04-04-22>; and “Regions,” Texas Division of Emergency Management, accessed July 9, 2023, <https://www.tdem.texas.gov/regions>.

⁷³⁶ Daft, *Organization Theory & Design*, 31.

frequent communication with each other. Consider the infrequency of communications between a hazard mitigation officer and an exercise officer within a state emergency management agency. In this case, emphasis on additional vertical or horizontal communication would not provide any meaningful difference.

At the jurisdiction level and consolidated risk mitigation and consequence management agency level, organic-focused horizontal communication should be emphasized to enable better connections between disparate agencies working throughout all phases of emergency management. Although it sounds counterintuitive to modern information sharing, emphasizing vertical communication may be more appropriate to designs focused on mitigation, preparedness, and recovery activities or within larger organizations to improve standardization and efficiency. Horizontal communication will still be most effective for response-oriented agencies or departments and smaller consolidated agencies. Table 12 displays the optimal risk mitigation and consequence management design orientations and characteristics for the complexity structural dimension.

Table 12. Complexity Structural Dimension Orientations and Characteristics

Emergency Management Phase	Level of Analysis	Optimal Orientation	Design Characteristics
Mitigation	Group or Agency	Mechanistic	Vertical Communications
Preparedness	Group or Agency	Mechanistic	Vertical Communications
Response	Group or Agency	Organic	Horizontal Communications
Recovery	Group or Agency	Mechanistic	Vertical Communications
Multiple (Consolidated)	Group, Agency, or Jurisdiction	Organic	Horizontal Communications

5. Centralization

Centralization primarily refers to the hierarchical level with the authority to make decisions.⁷³⁷ These decisions can range from hiring employees, purchasing, developing goals and strategies, or making critical choices during emergency response.⁷³⁸ Mechanistic organizations tend to have highly centralized decision-making at the top of the organization versus organic, which decentralizes decision-making to lower organizational levels.⁷³⁹

The structure becomes challenging to assess when looking at risk mitigation and consequence management entities because of the multiple levels of decision-making. Because most government risk mitigation and consequence management organizations are part of a larger jurisdictional organizational structure, one could say that much of the risk mitigation and consequence management-related decisions have been decentralized to the senior executive managers of the agencies performing those functions at a minimum.⁷⁴⁰ However, the various structures become more decentralized when considering how many decisions have been delegated to lower levels. In some jurisdictions, risk mitigation and consequence management activities can be found across many different departments, resulting in emergency management decision-making that is highly decentralized.⁷⁴¹ When consolidated emergency management agencies are employed, they are typically organized by the comprehensive emergency management phases with teams in mitigation, preparedness, response, and recovery. If decision-making has been decentralized to an emergency management agency's departments and subunits, the organization would be more organic and flexible, with lower levels that can leverage their specialized knowledge and discretion to control activities.⁷⁴²

⁷³⁷ Daft, 20.

⁷³⁸ Daft, 20.

⁷³⁹ Daft, 31–32.

⁷⁴⁰ For example, an Emergency Management Director, Chief Resilience Officer, or Homeland Security Advisor.

⁷⁴¹ Drabek, *Professional Emergency Manager*, 11, 234; Wenger, Dynes, and Quarantelli, *Disaster Analysis*, 59–65; Tierney, “Recent Developments in U.S. Homeland Security Policies,” 7; Roberts, “Dispersed Federalism,” 423; and Norton, *Emergency Preparedness and Disaster Assistance*, 68–69.

⁷⁴² Daft, *Organization Theory & Design*, 32; and Roberts, “Dispersed Federalism,” 417.

The decentralization around emergency management phases may also influence the effectiveness of leadership in the organization due to many emergency managers coming from response-oriented backgrounds.⁷⁴³ Suppose a risk mitigation and consequence management organization is highly centralized. In that case, decisions may be made across the organization by leadership that does not have familiarity or expertise across the dissimilar functions, and the organization may not have a cogent strategy that links the goals and direction across all operating units. Due to the disparate activities that fall within risk mitigation and consequence management, a decentralized and organic organization may be more resilient to senior leaders who are ineffective or experienced in only one functional area.⁷⁴⁴ However, when these functions are decentralized across a jurisdiction, with activities embedded in numerous departments ranging from police, fire, public works, and public health, the risk mitigation and consequence management strategy may be weak and disconnected.⁷⁴⁵ With no clear literature demonstrating frequent and logical connections between all functional silos within the various risk mitigation and consequence management organizational models, jurisdictions may maximize effectiveness by decentralizing decision-making to levels where regular coordination is usually observed.⁷⁴⁶

At the jurisdiction level and consolidated risk mitigation and consequence management agency level, a decentralized design is essential to enable leaders with the most applicable experience to focus on decisions that must be made within the individual phase of emergency management under their purview. Centralization could benefit

⁷⁴³ Jensen and Kirkpatrick, “Local Emergency Management and Comprehensive Emergency Management (CEM),” 9; John Weaver et al., “An Overview of a Demographic Study of United States Emergency Managers,” *Bulletin of the American Meteorological Society* 95, no. 2 (February 2014): 200, <https://doi.org/10.1175/BAMS-D-12-00183.1>; Chang and Neal, “Promotion or Transition,” 101; Topp, “Making the Transition from Law Enforcement to Emergency Management,” 45; Rice, “Collaborative Organizing for All Hazards,” 82; and Savitt, “Role of the County Emergency Manager,” 92.

⁷⁴⁴ National Academy of Public Administration, *Coping with Catastrophe*, 43–44.

⁷⁴⁵ Wenger, Dynes, and Quarantelli, *Disaster Analysis*, 69; National Academy of Public Administration, *Coping with Catastrophe*, 43–44; and Roberts, “Dispersed Federalism,” 422.

⁷⁴⁶ The more frequently coordinating functional silos are mitigation with recovery and preparedness with response. This applies to emergency management, homeland security, resilience, and other styles of risk mitigation and consequence management models.

mitigation, preparedness, and recovery activities to create greater standardization across an organization. Response-oriented agencies or departments should be more decentralized to enable greater flexibility and minimize decision-making delays.⁷⁴⁷ Table 13 displays the optimal risk mitigation and consequence management design orientations and characteristics for the centralization structural dimension.

Table 13. Centralization Structural Dimension Orientations and Characteristics

Emergency Management Phase	Level of Analysis	Optimal Orientation	Design Characteristics
Mitigation	Group or Agency	Mechanistic	Centralized Structure
Preparedness	Group or Agency	Mechanistic	Centralized Structure
Response	Group or Agency	Organic	Decentralized Structure
Recovery	Group or Agency	Mechanistic	Centralized Structure
Multiple (Consolidated)	Group, Agency, or Jurisdiction	Organic	Decentralized Structure

E. DESIGNING FOR FIT

1. Organization Structure

Government risk mitigation and consequence management organizations are not unfamiliar with the structural elements of organization design. Many emergency managers, public safety, public health, and other officials are required at some point to take courses in ICS.⁷⁴⁸ ICS and the overarching National Incident Management System (NIMS) were established to enable ad hoc hierarchical incident management structures to be created

⁷⁴⁷ Drabek, “Alternative Patterns of Decision-Making,” 299.

⁷⁴⁸ Federal Emergency Management Agency, *National Incident Management System Training Program* (Washington, DC: Federal Emergency Management Agency, 2020), 12, https://www.fema.gov/sites/default/files/documents/fema_nims_training-program-may-2020_0.pdf; Jensen and Thompson, “Incident Command System,” 159; and Nowell and Steelman, “Beyond ICS,” 1.

utilizing many of Henri Fayol's proven management principles.⁷⁴⁹ However, this thesis is primarily concerned with the more stable day-to-day organizational structures of government risk mitigation and consequence management organizations and how they group the various functional activities and tasks. This section outlines the core elements of organization structure and how many government risk mitigation and consequence management organizations have utilized them to organize their staff and resources.

Daft simplifies Child's definition of organization structure, noting that it consists of three key elements:

1. Organization structure designates formal positions and reporting relationships, including the number of levels in the hierarchy and the span of control of managers and supervisors.
2. Organization structure identifies the grouping together of individuals into departments and of departments into the total organization.
3. Organization structure includes the design of systems to ensure effective communication, coordination, and integration of efforts across departments.⁷⁵⁰

The first two components comprise the structural framework and outline the vertical hierarchy of the organization.⁷⁵¹ The third component outlines organizational staff interactions, promoting horizontal communication and coordination.⁷⁵² All government risk mitigation and consequence management organizations have a structural framework outlining how the staff is organized and to who each employee reports. This structure is commonly reflected on the organization chart.⁷⁵³ But, the quality and presence of the systems to ensure collaboration and coordination across the agency will vary. The structure must strike a balance, as the vertical linkages within the organization are focused on

⁷⁴⁹ Fayol, *General and Industrial Management*, 19–42; Jensen and Thompson, "Incident Command System," 159; and Nowell and Steelman, "Beyond ICS," 1.

⁷⁵⁰ Daft, *Organization Theory & Design*, 94; and Child, *Organization*, 5.

⁷⁵¹ Stewart Ranson, Bob Hinings, and Royston Greenwood, "The Structuring of Organizational Structures," *Administrative Science Quarterly* 25, no. 1 (March 1980): 1–2, <https://doi.org/10.2307/2392223>; and Hugh Willmott, "The Structuring of Organizational Structure: A Note," *Administrative Science Quarterly* 26, no. 3 (September 1981): 472–73, <https://doi.org/10.2307/2392518>.

⁷⁵² Daft, *Organization Theory & Design*, 94.

⁷⁵³ Daft, 95.

control, whereas the horizontal linkages are meant for greater coordination.⁷⁵⁴ Greater horizontal coordination typically means reduced control, creating inherent tension within the organization.⁷⁵⁵

The model of a chief executive situated at the top of the organizational chart, with workers placed into specific functional units below them, has been pervasive across industries and organizations since the Industrial Revolution.⁷⁵⁶ This approach is common in government agencies, including risk mitigation and consequence management organizations. The mayor of a city may have numerous departments below them, each with a manager responsible for a specific function of activities like public works, public health, or emergency management. Within the emergency management department, subordinate staff may be divided further based on function. Although this model is prevalent, it is not always effective in rapidly changing environments, particularly in the type that risk mitigation and consequence management organizations operate.⁷⁵⁷ Since the 1980s, many sectors have shifted to enable more horizontal coordination despite having a vertical hierarchy.⁷⁵⁸

2. Information Sharing and Linkages

Improving communications and information sharing is a key reason for considering organizational structure changes. The organization structure of government risk mitigation and consequence management organizations is most effective when designed to enable employees to access the information related to their tasks to make the appropriate decisions with the least processing time.⁷⁵⁹ One critical structural dimension that impacts information sharing within an organization is centralization, as described earlier in this

⁷⁵⁴ Daft, 97.

⁷⁵⁵ Daft, 97.

⁷⁵⁶ Daft, 96.

⁷⁵⁷ Daft, 96.

⁷⁵⁸ Daft, 96.

⁷⁵⁹ David Nadler and Michael Tushman, *Strategic Organization Design: Concepts, Tools & Processes* (Glenview, IL: Scott, Foresman & Co., 1988), 55–60.

chapter. Centralization affects information sharing as decisions require information.⁷⁶⁰ Organizations with greater centralization limit lower-level managers' decision-making ability, requiring information to be frequently shared vertically through command and control pathways.⁷⁶¹ In addition, if managers do not have sufficient expertise on a topic, more frequent and detailed information sharing may be required to enable the manager to make an appropriate decision. For example, if a consolidated emergency management agency has highly centralized decision-making, and the agency's chief executive is unfamiliar with mitigation policy, decisions related to the mitigation programs may require additional vertical information sharing with the subordinate, potentially degrading performance within that function. Instead of centralizing all decision-making, organizations must balance the need to create efficient and consistent procedures on activities common across all agency functions and enable decentralization for unique functions requiring specialized knowledge and experience.⁷⁶²

Organizations can use a variety of techniques to improve communications and information sharing. Information linkages are a primary technique to connect various components across the organization to ensure coordination. Vertical linkages are more aligned with control and are used to make connections across the vertical hierarchy and can include a variety of tools, including hierarchical referral, rules and plans, and vertical information systems.⁷⁶³ For example, a chief resilience officer will provide their employees with operating goals related to climate adaptation and community recovery planning, and the applicable climate adaptation specialist and community planner will periodically report back with updates on activities and accomplishments.⁷⁶⁴

⁷⁶⁰ Daft, *Organization Theory & Design*, 97.

⁷⁶¹ Daft, 97.

⁷⁶² Andrew Campbell, Sven Kunisch, and Günter Müller-Stewens, "To Centralize or Not to Centralize?," *McKinsey Quarterly*, no. 3 (June 2011): 3, <https://www.mckinsey.com/~media/McKinsey/Business%20Functions/Organization/Our%20Insights/To%20centralize%20or%20not%20to%20centralize/To%20centralize%20or%20not%20to%20centralize.pdf>.

⁷⁶³ Galbraith, *Designing Complex Organizations*, 8–14, 17–18; and Galbraith, *Organization Design*, 81–127.

⁷⁶⁴ Daft, *Organization Theory & Design*, 99.

With hierarchical referral, a problem is passed up the chain of command when an employee cannot solve it. For example, suppose a local mitigation coordinator encounters an issue acquiring a parcel in the floodplain. In that case, they may refer the problem to their supervisor, the emergency management director. If the director cannot resolve the issue, it may be necessary to refer it again to the director of public safety for the jurisdiction. As the problem elevates through the hierarchy, decision-making authority increases, but knowledge of the topic may be less as more senior-level positions are required to take action.

Rules and plans are a popular vertical linkage within government risk mitigation and consequence management organizations. Rather than referring recurring issues throughout the hierarchy, employees may leverage formally documented procedures that outline direction from leadership and reduce the need for repeated communications.⁷⁶⁵ Emergency management agencies frequently craft plans and standard operating procedures to memorialize decisions and guidance for current and future employees.⁷⁶⁶ Procedures also ensure consistency in the application of decisions across an entire organization.⁷⁶⁷

Agencies also use vertical information systems, including emails, reports, and memos, to share information up and down the hierarchy.⁷⁶⁸ These systems' frequency and scope highly depend on the jurisdiction and organization. For example, a homeland security director may request a weekly report using a standard template from an employee on the status of preparedness grant projects within the jurisdiction. This process establishes a somewhat efficient routine to ensure the manager is familiar with the organization's current activities and can intervene on emerging issues.

⁷⁶⁵ Daft, 100.

⁷⁶⁶ Perry and Lindell, "Preparedness for Emergency Response," 336–40; Lindell and Perry, "Evaluation Criteria for Emergency Response Plans," 335–37; and Moynihan, "From Intercrisis to Intracrisis Learning," 195.

⁷⁶⁷ Daft, *Organization Theory & Design*, 100.

⁷⁶⁸ Daft, 100.

Like vertical linkages, horizontal linkages can assist organizations in improving communications and information sharing.⁷⁶⁹ However, horizontal linkages are even more critical, enabling knowledge sharing, unity of effort, and collaboration across the enterprise.⁷⁷⁰ Unlike control, Daft suggests that collaboration reflects the ability of two or more entities “to produce outcomes that meet a common goal or shared purpose.”⁷⁷¹ Within the context of this thesis, the vertical hierarchy and placement of risk mitigation and consequence management functions are of particular interest to identify design techniques that can improve efficiency and effectiveness. But, with strong horizontal linkages, the formal placement of risk mitigation and consequence management functions across a jurisdiction becomes less critical as separate operating units can collaborate on common goals.⁷⁷² Horizontal linkages become even more critical in larger-sized organizations like FEMA and other federal and state risk mitigation and consequence management agencies.⁷⁷³ Small organizations do not have many barriers to enabling interaction among staff, especially in cases where there are only one or two employees, a frequent occurrence for emergency management, homeland security, and resilience offices.⁷⁷⁴ Horizontal linkage tools like information systems, liaisons, task forces, full-time integrators, and cross-functional teams can assist all organizations, particularly those

⁷⁶⁹ Howard, “Organization and Reorganization as Manifestation of Public Policy,” 244–45.

⁷⁷⁰ Turkulainen and Ketokivi, “The Contingent Value of Organizational Integration,” 32, 37.

⁷⁷¹ Daft, *Organization Theory & Design*, 100; and Kayser, “Six Ingredients for Collaborative Partnerships,” 50.

⁷⁷² Drabek, *Professional Emergency Manager*, 107–8, 179; and Raymond L. Kay II, “Homeland Security Collaboration: Catch Phrase or Preeminent Organizational Construct?” (master’s thesis, Naval Postgraduate School, 2009), 22, <https://hdl.handle.net/10945/4559>.

⁷⁷³ Ronald J. Recardo and Kleigh Heather, “Ten Best Practices for Restructuring the Organization,” *Global Business & Organizational Excellence* 32, no. 2 (2013): 34–36, <https://doi.org/10.1002/joe.21470>; Kirsten Foss and Waymond Rodgers, “Enhancing Information Usefulness by Line Managers’ Involvement in Cross-Unit Activities,” *Organization Studies* 32, no. 5 (May 2011): 683–684, <https://doi.org/10.1177/0170840611407017>; Mark Casson, *Information and Organization: A New Perspective on the Theory of the Firm* (New York: Clarendon Press, 1997), 92, <http://archive.org/details/informationorgan0000cass>; Justin J. P. Jansen et al., “Structural Differentiation and Ambidexterity: The Mediating Role of Integration Mechanisms,” *Organization Science* 20, no. 4 (August 2009): 807–8, <https://doi.org/10.1287/orsc.1080.0415>; and Galbraith, *Designing Complex Organizations*, 9, 46–66.

⁷⁷⁴ Recardo and Heather, “Ten Best Practices for Restructuring the Organization,” 34–36; Foss and Rodgers, “Enhancing Information Usefulness by Line Managers’ Involvement in Cross-Unit Activities,” 683–684; Casson, *Information and Organization*, 92; Jansen et al., “Structural Differentiation and Ambidexterity,” 807–8; and Galbraith, *Designing Complex Organizations*, 9, 46–66.

that are larger, with efforts to improve collaboration.⁷⁷⁵ Each linkage device ranges in collaboration capacity, with cross-functional teams being the strongest for horizontal information sharing and information systems being the weakest.⁷⁷⁶ However, as the device selected increases in capacity, the cost to the organization in staffing and resources is more significant.⁷⁷⁷

Intranets are standard information systems used to improve horizontal information sharing and collaboration. These systems are a repository of information shared by leadership and other operating units and can include information about activities, projects, and smart practices.⁷⁷⁸ When considering the different levels of organizations, information systems may be implemented at the jurisdiction level or the risk mitigation and consequence management agency level. Implementing the system at the jurisdiction level promotes coordination with entities outside the risk mitigation and consequence management space. Larger risk mitigation and consequence management entities may also have other more internally focused information systems to share information across operating units, including grants management, incident management, or geographic information system platforms.⁷⁷⁹

Information systems provide 24/7 access to information across the organization but may not enable the level of horizontal coordination necessary. Establishing a liaison role is one technique to help establish direct contact between managers and employees working on a problem.⁷⁸⁰ The liaison is located within a specific department but is the prime point of contact for issues requiring coordination and collaboration with one another.⁷⁸¹ For

⁷⁷⁵ Galbraith, *Designing Complex Organizations*, 46–66; and Recardo and Heather, “Ten Best Practices for Restructuring the Organization,” 34–36.

⁷⁷⁶ Daft, *Organization Theory & Design*, 107; and Nicolay Worren, “Hitting the Sweet Spot Between Separation and Integration in Organization Design,” *People and Strategy* 34, no. 4 (2011): 26, ProQuest.

⁷⁷⁷ Daft, *Organization Theory & Design*, 105.

⁷⁷⁸ Daft, 101.

⁷⁷⁹ “Privacy Documents for the Federal Emergency Management Agency (FEMA),” Department of Homeland Security, April 28, 2023, <https://www.dhs.gov/privacy-documents-fema>.

⁷⁸⁰ Daft, *Organization Theory & Design*, 102.

⁷⁸¹ Daft, 102.

example, an emergency management agency's mitigation division may have an employee who serves as a liaison to the others within the agency. When someone from the recovery division is looking to integrate hazard mitigation practices within a disaster recovery project they are working on, they can reach out to the mitigation liaison. This liaison will be able to triage their needs best, connect them to other mitigation employees, and support them throughout the initiative. FEMA assigns dedicated liaisons to organizations within the National Oceanic and Atmospheric Administration (NOAA), including the National Hurricane Center and the National Water Center.⁷⁸²

Some activities require coordination across multiple departments rather than a direct connection between the two.⁷⁸³ A temporary task force can be helpful to connect the applicable representatives from all operating units affected by an issue and provide a conduit to provide information back to the other employees across the organization.⁷⁸⁴ Task forces are common in risk mitigation and consequence management. At the jurisdiction level, task forces are frequently established to develop emergency plans, conduct disaster exercises, or even coordinate the incident response using ICS. These task forces will include staff from risk mitigation and consequence management organizations, other departments, and external entities. At the agency level, task forces may enable cross-departmental communications on projects spanning mitigation, preparedness, response, and recovery functions. The primary trait of a task force is that it is discontinued when the project is complete or the problem is no longer present.⁷⁸⁵

Full-time integrators are a more advanced and less common horizontal linkage mechanism within government risk mitigation and consequence management

⁷⁸² "National Water Center," Office of Water Prediction, accessed July 17, 2023, <https://water.noaa.gov/about/nwc>; and "Hurricane Planning and Response," Federal Emergency Management Agency, September 30, 2021, <https://www.fema.gov/emergency-managers/risk-management/hurricanes>.

⁷⁸³ Daft, *Organization Theory & Design*, 102.

⁷⁸⁴ Walter Kiechel, "The Art of the Corporate Task Force," *Fortune*, January 28, 1991, 104–105; and William J. Altier, "Task Forces: An Effective Management Tool," *Management Review* 76, no. 2 (February 1987): 52, ProQuest.

⁷⁸⁵ Daft, *Organization Theory & Design*, 102.

organizations.⁷⁸⁶ Unlike liaisons, employees with the collateral duty of enabling collaboration between departments, the full-time integrator is a dedicated resource that does not report to one of the functional departments being coordinated.⁷⁸⁷ Integrator roles can vary depending on the level of analysis being considered. Larger agencies may have dedicated project managers to integrate functions on an initiative or project. For example, FEMA’s Office of the National Capital Region Coordination (ONCRC) serves as a full-time integrating department for emergency management and homeland security activities in the Washington, DC, metropolitan area, linking activities with their Region III office to dozens of federal executive, legislative, and judicial agencies, among other levels of government in the region.⁷⁸⁸ Some large local jurisdictions have public safety employees detailed full-time to risk mitigation and consequence management organizations to improve integration between agencies.⁷⁸⁹ Emergency managers and resilience officers may even be considered integrators at the jurisdiction level because they coordinate the risk mitigation and consequence management efforts and employees across an entire

⁷⁸⁶ Frances Stead Sellers, “New FEMA Initiative Puts Federal Response Teams in Place Before Disaster Strikes,” *Washington Post*, October 15, 2018, https://www.washingtonpost.com/politics/new-fema-initiative-puts-federal-response-teams-in-place-before-disaster-strikes/2018/10/14/7573fed0-bbab-11e8-bdc0-90f81cc58c5d_story.html; and Federal Emergency Management Agency, *Preparedness Grants and FEMA Integration Team Effectiveness Case Study: Connecticut* (Washington, DC: Federal Emergency Management Agency, 2021), 1, 4, https://www.fema.gov/sites/default/files/documents/fema_connecticut-covid-19-case-study_2020.pdf. Although FEMA Integration Team (FIT) members are a good example of a full-time integrator, they are primarily focused on vertical intergovernmental integration rather than horizontal intragovernmental integration.

⁷⁸⁷ Daft, *Organization Theory & Design*, 103.

⁷⁸⁸ “Office of the National Capital Region Coordination,” Federal Emergency Management Agency, May 25, 2023, <https://www.fema.gov/about/offices/national-capital-region>; and Mark Goldstein, *Emergency Communications: Actions Needed to Better Coordinate Federal Efforts in the National Capital Region*, GAO-16-249 (Washington, DC: Government Accountability Office, 2016), 7–11, <https://www.gao.gov/assets/gao-16-249.pdf>.

⁷⁸⁹ NYC Emergency Management, “NYC Emergency Management’s Citywide Interagency Coordinators,” video, 4:31, YouTube, July 11, 2016, <https://www.youtube.com/watch?v=VICjFuGt0cU>; and NYC Emergency Management, “Coordinating from the Frontline,” NYC Emergency Management, June 25, 2020, https://www.nyc.gov/site/em/about/press-releases/20200625_pr_nycem-coordinating-from-the-frontline.page.

jurisdiction.⁷⁹⁰ Although they are typically responsible for coordinating an entire project, integrators must lead through influence as they usually have little authority over the employees they are coordinating.⁷⁹¹

Cross-functional teams are closely related to full-time integrators and are powerful horizontal linkage devices.⁷⁹² Unlike temporary task forces, cross-functional teams are permanent and consist of staff members from the pertinent functional areas within an organization.⁷⁹³ These structures are typically non-existent in smaller local government risk mitigation and consequence management organizations, as they can not afford to have a staff member permanently dedicated to a specific team. However, fusion centers are good examples of risk mitigation and consequence management-oriented cross-functional teams in larger jurisdictions.⁷⁹⁴

The previous horizontal linkage tools can be implemented by managers depending on how much collaboration and coordination are necessary for specific projects or initiatives.⁷⁹⁵ Organizations that embed high levels of collaboration and communication across the workforce are considered to embody the traits of relational coordination. Daft explains relational coordination as “frequent, timely, problem-solving communication carried out through relationships of shared goals, shared knowledge, and mutual

⁷⁹⁰ Canton, *Emergency Management*, 95; Federal Emergency Management Agency, *Principles of Emergency Management Supplement*, 4, 6–7; Chang and Neal, “Promotion or Transition,” 103; Jensen et al., “The County Emergency Manager’s Role in Recovery,” 164; Kreps, “Organizing for Emergency Management,” 49; Drabek, *Professional Emergency Manager*, 92–93; Wise, “Organizing for Homeland Security,” 135; and William L. Waugh and Richard T. Sylves, “Organizing the War on Terrorism,” *Public Administration Review* 62, no. s1 (2002): 147, <https://doi.org/10.1111/1540-6210.62.s1.24>.

⁷⁹¹ Paul R. Lawrence and Jay W. Lorsch, “New Management Job: The Integrator,” *Harvard Business Review* 45, no. 6 (1967): 150, <https://hbr.org/1967/11/new-management-job-the-integrator>.

⁷⁹² Daft, *Organization Theory & Design*, 103.

⁷⁹³ Daft, 103.

⁷⁹⁴ Department of Justice and Department of Homeland Security, *Fusion Center Guidelines: Developing and Sharing Information and Intelligence in a New Era* (Washington, DC: Department of Justice, 2006), 51–52, https://bja.ojp.gov/sites/g/files/xyckuh186/files/media/document/fusion_center_guidelines_law_enforcement.pdf.

⁷⁹⁵ Daft, *Organization Theory & Design*, 105.

respect.”⁷⁹⁶ In the case of relational coordination, horizontal linkages aren’t turned on and off but instead are included in the fabric and culture of the organization. Strong relationships exist throughout the organization, and information and knowledge are shared freely between operating units.⁷⁹⁷ Most importantly, managers emphasize shared goals rather than the goals of separate departments.⁷⁹⁸ This mindset is challenging due to the disparate nature of risk mitigation and consequence management activities, which range from distributing recovery funding to other levels of government after disasters to teaching citizens how to protect themselves during active shooter incidents.⁷⁹⁹ Because this concept relates closely to organizational culture and the training and opportunities provided to employees, its presence is difficult to track across the nation’s government risk mitigation and consequence management organizations. Based on numerous performance audits and the after-action reports from incidents and exercises, it is likely that significant work remains in embedding horizontal communications and collaboration practices in government risk mitigation and consequence management organizations.⁸⁰⁰ Figure 16 shows the various horizontal linkage devices available depending on the amount of coordination required.

⁷⁹⁶ Daft, 106; and Jody Hoffer Gittel, *The Southwest Airlines Way: Using the Power of Relationships to Achieve High Performance* (New York: McGraw-Hill, 2003), 25–45.

⁷⁹⁷ Daft, *Organization Theory & Design*, 106.

⁷⁹⁸ Daft, 107; and National Academy of Public Administration, *Coping with Catastrophe*, 43–44.

⁷⁹⁹ Daft, *Organization Theory & Design*, 107; National Academy of Public Administration, *Coping with Catastrophe*, 43–44; and Howard, “Organization and Reorganization as Manifestation of Public Policy,” 198.

⁸⁰⁰ Westfall, *I-95 Snow Incident*, 10–11; Crist et al., *Performance Audit*, 2–3, 10; Portland City Auditor, *Emergency Management*, 6–7; New York City Comptroller, *Interim Findings and Recommendations*, 2–3, 11–13; Office of the Washington State Auditor, *Opportunities to Improve Washington’s Preparedness Efforts in Emergency Management* (Olympia, WA: State of Washington, 2019), 3–5, 13–16, https://sao.wa.gov/wp-content/uploads/Tabs/PerformanceAudit/PA_Improving_WA_Emergency_Management_Preparedness_Efforts_ar-1023742.pdf; City of Los Angeles Emergency Management Department, *Emergency Operations Activation After-Action Report (AAR)*, 51–60; and National Homeland Security Consortium, *COVID-19 Pandemic After-Action Report*, 18–20.

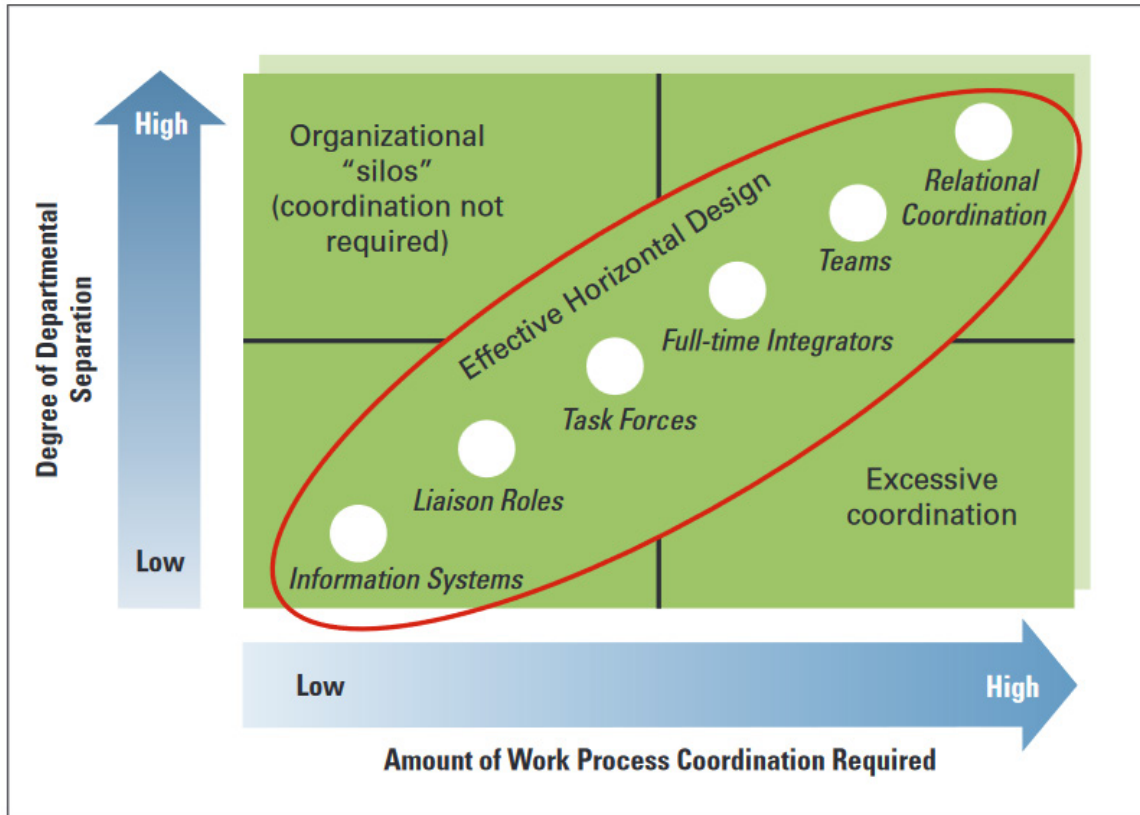


Figure 16. Horizontal Linkage Devices⁸⁰¹

Information linkages help to overcome challenges that may be encountered in vertical and horizontal communication within an organization. One could consider these linkages as a “fix” to the problems created by formal organizational structures. Matt Mullenweg, founder of the website blogging platform WordPress, notes, “All org structures are a series of tradeoffs.”⁸⁰² Similarly, Kettl agrees that in most cases, organizations trade artificial department boundaries for other artificial department boundaries resulting in trade-offs.⁸⁰³ When considering the consolidation of numerous government functions within one agency, Howard aptly states, “Interdepartmental

⁸⁰¹ Source: Daft, *Organization Theory & Design*, 107.

⁸⁰² Nilay Patel, “How WordPress and Tumblr Are Keeping the Internet Weird,” *The Verge*, March 15, 2022, <https://www.theverge.com/2022/3/15/22977857/wordpress-tumblr-simplenote-internet-automatic-matt-mullenweg-interview>.

⁸⁰³ Kettl, “Managing Boundaries in American Administration,” 12.

coordination problems just become intradepartmental problems.”⁸⁰⁴ Managers can use organization theory and design to clarify their agency’s structure by thinking deliberately about required work activities, reporting relationships, and departmental groupings.⁸⁰⁵ It is important to note that this type of planning is most important in larger organizations, either at the jurisdiction level when the chief executive decides how to implement risk mitigation and consequence management functions or at the agency level when determining how to divide those functions into smaller operating units. In a smaller office, staff will more than likely be generalists, and it is unlikely that activities could be further divided into departmental groups.

3. Connecting Goals and Organizational Activities

When considering the operating goals of a government risk mitigation and consequence management organization, required work activities will vary across the country. A state emergency management agency with broad goals to reduce the risk for all threats and hazards may have a large selection of work activities it is responsible for. In contrast, a public health emergency preparedness office embedded within a local health department may have a much narrower scope of responsibilities. These responsibilities can include activities across all phases of emergency management, including mitigation, preparedness, response, and recovery functions. In analyzing consolidated and distributed risk mitigation and consequence management functions across the government, the activities outlined in the EMAP Emergency Management Standard hold the most significant relevance within the scope of this thesis.⁸⁰⁶

Organizations may also house functions not considered traditional aspects of comprehensive emergency management, especially if their primary mission is not emergency management or if they reside in a non-emergency management entity.⁸⁰⁷ These might include disease epidemiology activities within a public health emergency

⁸⁰⁴ Howard, “Organization and Reorganization as Manifestation of Public Policy,” 197.

⁸⁰⁵ Daft, *Organization Theory & Design*, 109.

⁸⁰⁶ Emergency Management Accreditation Program, *Emergency Management Standard*.

⁸⁰⁷ Drabek, *Professional Emergency Manager*, 234.

preparedness office, immigration services within a homeland security department, or environmental sustainability programs within a resilience office.⁸⁰⁸ Even FEMA, an agency that led the national adoption of comprehensive emergency management, contains some functions with minimal connection to emergency management. The best example is the Emergency Food and Shelter Program, a program authorized by the McKinney-Vento Homeless Assistance Act of 1987 that “supplements and expands ongoing work of local nonprofit and governmental social service organizations to provide shelter, food, and supportive services to individuals and families who are experiencing, or at risk of experiencing, hunger and/or homelessness.”⁸⁰⁹ Finally, the agency may perform some “enabling” activities like legal, financial, logistical, and human resources functions that help support the primary mission of the organization.⁸¹⁰

As new goals are established, organizations may develop new positions or departments to support those functions.⁸¹¹ This exercise can be demonstrated at the jurisdiction or agency levels. Many jurisdictions have added emergency management, homeland security, and resilience offices to support new governmental functions.⁸¹² Within many of the mature examples of these agencies, organizations have added new staff or divisions to take on new goals. Consider the many staff added to agencies to support

⁸⁰⁸ Christopher Nelson et al., “Conceptualizing and Defining Public Health Emergency Preparedness,” *American Journal of Public Health* 97, no. S1 (April 2007): S10, <https://doi.org/10.2105/AJPH.2007.114496>; Soujaa, Nukpezah, and Benavides, “Coordination Effectiveness During Public Health Emergencies,” 1020; Jacob Elkin, “The Climate Justice Implications of Co-Locating FEMA and ICE within DHS,” *Environmental Claims Journal* 34, no. 4 (2022): 285–88, <https://doi.org/10.1080/10406026.2021.2010892>; Fastiggi, Meerow, and Miller, “Governing Urban Resilience,” 1263–64, 1274, 1279–80; and Haris Alibašić, “Assessing the Intersection of Resilience and Sustainability,” in *Strategic Resilience and Sustainability Planning: Management Strategies for Sustainable and Climate-Resilient Communities and Organizations*, ed. Haris Alibašić, 2nd ed. (Cham, Switzerland: Springer International Publishing, 2022), 91, 93–94, https://doi.org/10.1007/978-3-030-91159-1_6.

⁸⁰⁹ “Emergency Food and Shelter Program,” Federal Emergency Management Agency, June 26, 2023, <https://www.fema.gov/grants/emergency-food-and-shelter-program>.

⁸¹⁰ Kates, Kesler, and DiMartino, *Networked, Scaled, and Agile*, 31–32; and National Academy of Public Administration, *Coping with Catastrophe*, 56.

⁸¹¹ Daft, *Organization Theory & Design*, 109.

⁸¹² McEntire, “Local Emergency Management Organizations,” 170–71; Jensen and Kirkpatrick, “Local Emergency Management and Comprehensive Emergency Management (CEM),” 4; and Tierney, “Recent Developments in U.S. Homeland Security Policies,” 7.

preparedness and response to cybersecurity threats.⁸¹³ Overall, the agency's operating units will be engaged in tasks that are important to the agency and help accomplish its goals.⁸¹⁴

With work activities and the associated departments established, a chain of command can be formed.⁸¹⁵ These reporting relationships are the basis for organizational control and are typically related to vertical communications and authority.⁸¹⁶ Despite the advancements in and adoption of horizontal collaborating structures, most organizations still need some method to establish day-to-day reporting authority for the staff.⁸¹⁷ The location of the senior manager or staff responsible for risk mitigation and consequence management functions relative to the jurisdiction's chief executive is also essential when outlining the chain of command. In some cases, the manager leading the jurisdiction's consolidated risk mitigation and consequence management functions may be buried under numerous levels of hierarchy in a department with little to do with the activities in the EMAP Emergency Management Standard.⁸¹⁸ Scholars and practitioners recommend placing the senior manager responsible for these functions to have direct access to the jurisdiction's chief executive.⁸¹⁹

⁸¹³ "Cyber Preparedness Unit," Maryland Department of Emergency Management, accessed July 25, 2023, <https://mdem.maryland.gov/Pages/default.aspx>.

⁸¹⁴ Daft, *Organization Theory & Design*, 109.

⁸¹⁵ Daft, 109.

⁸¹⁶ Daft, 109.

⁸¹⁷ Daft, 109.

⁸¹⁸ Beth LeBlanc, "GOP Lawmaker Floats Bill to Seize Emergency Operations from Michigan State Police," *Detroit News*, September 1, 2020, <https://www.detroitnews.com/story/news/local/michigan/2020/09/01/republican-lawmaker-floats-bill-seize-emergency-operations-michigan-state-police/5684282002/>; "Division Organization," New Jersey State Police, accessed July 25, 2023, <https://nj.gov/njsp/division/index.shtml>; and Drabek, *Professional Emergency Manager*, 107, 177–78, 194–96.

⁸¹⁹ Canton, *Emergency Management*, 76, 95; Gutierrez and Valla, "Law Enforcement and Emergency Management," 59; Edwards and Goodrich, "Organizing for Emergency Management," 44; Drabek, *Professional Emergency Manager*, 194; John R. Labadie, "Problems in Local Emergency Management," *Environmental Management* 8, no. 6 (November 1984): 490, <https://doi.org/10.1007/BF01871574>; Eric E. Holdeman, "Should Emergency Management Report to Elected Official, CEO?," GovTech, August 3, 2010, <https://www.govtech.com/dc/articles/Should-Emergency-Management-Report-to-Elected.html>; Howard, "Organization and Reorganization as Manifestation of Public Policy," 171; and DeLorenzo, "FEMA and the Merger with DHS," 57.

4. Departmental Grouping

The final aspect of organization structure design is departmental grouping. Departmental grouping plays a vital role in organization structure as it defines the employees that share a common supervisor and resources, how they share responsibility for performance, and frequently creates a shared identity due to the collaboration encountered within the department.⁸²⁰ There are many approaches to departmental grouping, although government risk mitigation and consequence management organizations typically fall within a few common categories.

Functional grouping (Figure 17) is a popular departmental grouping model used by risk mitigation and consequence management agencies.⁸²¹ For example, an emergency management agency may have staff within a few functional departments, including grants management, logistics, operations, and planning.⁸²² In this example, the team within each department would have similar jobs, work processes, skills, and knowledge.⁸²³ Functional grouping is also common with enabling and mission support departments, regardless of the department grouping style of the rest of the agency.⁸²⁴ In many cases, legal, financial, human resources, and administrative functions will be grouped functionally at the jurisdiction level, or for large risk mitigation and consequence management organizations like FEMA, at the agency level.

⁸²⁰ Mintzberg, *The Structuring of Organizations*, 104–6.

⁸²¹ Raymond E. Miles et al., “Designing Organizations to Meet 21st-Century Opportunities and Challenges,” *Organizational Dynamics* 39, no. 2 (2010): 94–95, <https://doi.org/10.1016/j.orgdyn.2010.01.009>.

⁸²² “About Us,” Anne Arundel County, MD, accessed July 26, 2023, <https://www.aacounty.org/departments/office-of-emergency-management/about-us/>.

⁸²³ Daft, *Organization Theory & Design*, 109.

⁸²⁴ Daft, 131.

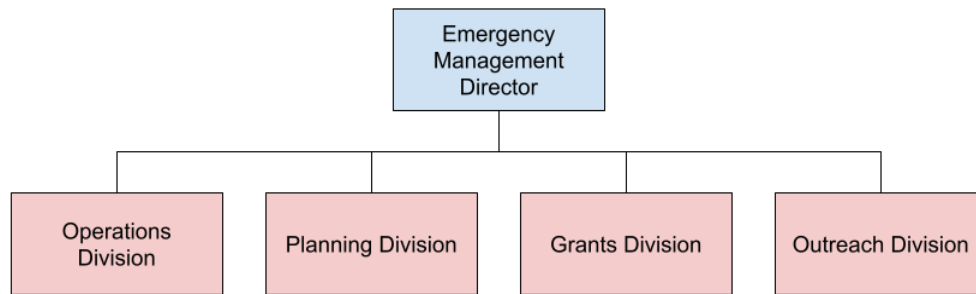


Figure 17. Functional Grouping

There are many benefits and weaknesses to the functional structure approach.⁸²⁵ This approach enables economies of scale within functions, allowing departmental employees to share resources and facilities.⁸²⁶ For example, having all public affairs staff within a homeland security department consolidated in one shared unit allows for better resource utilization across all departmental operating units. Employees within functions are highly specialized and exposed to many applicable department activities.⁸²⁷ The economies of scale factor is why many jurisdictions have worked to consolidate their enabling functions into enterprise-wide departments to reduce duplication and waste.⁸²⁸ This approach does encounter resistance due to the behaviors described by resource dependence theory.⁸²⁹

⁸²⁵ Robert Duncan, “What Is the Right Organization Structure? Decision Tree Analysis Provides the Answer,” *Organizational Dynamics* 7, no. 3 (1979): 64–65.

⁸²⁶ Daft, *Organization Theory & Design*, 112.

⁸²⁷ Duncan, “What Is the Right Organization Structure?,” 64–65; and W. Alan Randolph and Gregory G. Dess, “The Congruence Perspective of Organization Design: A Conceptual Model and Multivariate Research Approach,” *Academy of Management Review* 9, no. 1 (January 1984): 120–21, <https://doi.org/10.2307/258238>.

⁸²⁸ Arthur P. Tomasino, Jane Fedorowicz, and Christine B. Williams, “Public Sector Shared Services Move Out of the ‘Back-Office’: The Role of Public Policy and Mission Criticality,” *ACM SIGMIS Database: The DATABASE for Advances in Information Systems* 48, no. 3 (August 2017): 85, 87, <https://doi.org/10.1145/3130515.3130521>; and National Academy of Public Administration, *Coping with Catastrophe*, 56.

⁸²⁹ Pfeffer and Salancik, *The External Control of Organizations*, 85, 87.

Unfortunately, the functional model does not enable a quick shift to environmental changes encountered across departments.⁸³⁰ The many functions of an organization can result in a highly complex vertical hierarchy.⁸³¹ Depending on the centralization of decision-making within the agency, decisions can overload managers responsible for overseeing and coordinating multiple functions.⁸³² Employees narrowly focus on their position and may lack context for the larger organizational goals and mission. To combat that challenge, former FEMA Administrator Craig Fugate was known to say that everyone within the agency was an “emergency manager” despite the great diversity in functional activities being conducted.⁸³³ Because of the lack of natural departmental grouping based on teams that produce common services, strong horizontal linkages are necessary to enable coordination across agencies with this style of departmental grouping.⁸³⁴

When a jurisdiction uses divisional departmental grouping, it organizes staff based on what the organization produces, otherwise known as organizational outputs.⁸³⁵ Divisional grouping (Figure 18) is also popular within government risk mitigation and consequence management organizations.⁸³⁶ It can typically be seen in organizations that have organized their staff across the comprehensive emergency management “phases” or the homeland security “mission areas.”⁸³⁷ For example, the Florida Division of Emergency Management organizes its agency across independent Preparedness, Response, Recovery, and Mitigation Bureaus.⁸³⁸ At the regional level, FEMA also organizes its staff into a Mitigation Division,

⁸³⁰ Daft, *Organization Theory & Design*, 112.

⁸³¹ Daft, 112.

⁸³² Daft, 112.

⁸³³ Tom Shoop, “The ‘Things That Don’t Make a Lot of Noise:’ Craig Fugate on Managing FEMA,” *Government Executive*, December 9, 2016, <https://www.govexec.com/management/2016/12/things-dont-make-lot-noise-craig-fugate-managing-fema/133791/>.

⁸³⁴ Daft, *Organization Theory & Design*, 112.

⁸³⁵ Daft, 109; and Miles et al., “Designing Organizations to Meet 21st-Century Opportunities and Challenges,” 95.

⁸³⁶ Hogue and Bea, *Federal Emergency Management and Homeland Security Organization*, 18.

⁸³⁷ Hogue and Bea, 18.

⁸³⁸ “About the Division,” *FloridaDisaster*, accessed July 26, 2023, <https://www.floridadisaster.org/dem/>.

Preparedness Division, Response Division, and Recovery Division. Within each department, a mixture of grants specialists, planners, program coordinators, administrative assistants, and other staff cohesively implement activities within the applicable “phase” of emergency management. The larger the agency, the more likely these divisions will be divided further into more specific services produced by the subordinate teams.

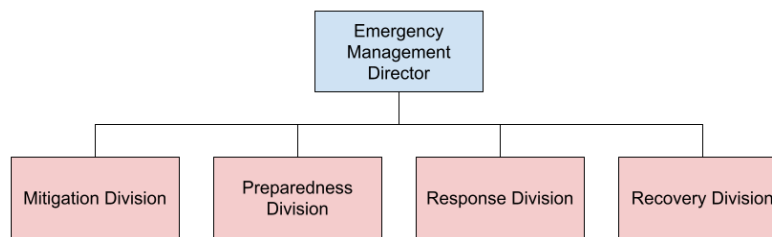


Figure 18. Divisional Grouping

Because the grouping is based on organizational outputs, the divisional grouping model can also enable organizations to organize departments based on geography.⁸³⁹ Government risk mitigation and consequence management organizations that perform services over a large area typically incorporate some aspect of a geographic divisional structure to enable better organization around the unique threats and hazards, populations, and resources found within their different locations within their jurisdiction. While not typical at the local level, many states and the federal government have regional offices or teams responsible for providing services within a sub-geography in the jurisdiction. Decentralized decision-making is possible using this model as regional managers have general familiarity and some control of all services the agency provides, across mitigation, preparedness, response, and recovery.⁸⁴⁰ Managers can adapt the services to the needs of their area and adjust much more quickly than the national or state headquarters.⁸⁴¹

⁸³⁹ Daft, *Organization Theory & Design*, 116.

⁸⁴⁰ Daft, 117; and Roberts, “Dispersed Federalism,” 425, 427–31.

⁸⁴¹ Daft, *Organization Theory & Design*, 117; and Roberts, “Dispersed Federalism,” 425, 427–31.

Like functional grouping, divisional grouping also has its strengths and weaknesses.⁸⁴² Daft suggests that when organizations aim to decentralize their decision-making, the divisional departmental grouping is helpful because “lines of authority converge at a lower level in the hierarchy.”⁸⁴³ Larger, more complex organizations like FEMA and state risk mitigation and consequence management organizations commonly use the divisional structure to enable coordination across functions.⁸⁴⁴ Organizations can quickly adapt to change due to the flexibility this model offers.⁸⁴⁵ Focus is around outputs, and employees can easily recognize their services’ contribution towards the department’s operating goals.⁸⁴⁶ Customer service may also be simplified in this model.⁸⁴⁷ This simplification is significant due to the intergovernmental nature of risk mitigation and consequence management, with higher levels of government providing services for lower levels. In the divisional model, a local government can coordinate directly with the state government department most applicable to the service they are concerned with. Most importantly, each service line can rapidly adapt to emerging issues and concerns.⁸⁴⁸ For example, suppose FEMA is releasing a new grant program targeted toward climate adaptation. In that case, the state emergency management agency’s mitigation department can have its internal planners and grants specialists work closely on implementation plans without having to disrupt and wait on staff from other functional units.

The challenge with this model is that it is heavily staff reliant, as key specialists must be duplicated across each department.⁸⁴⁹ The economies of scale in the functional

⁸⁴² Duncan, “What Is the Right Organization Structure?,” 65–68.

⁸⁴³ Daft, *Organization Theory & Design*, 113, 115.

⁸⁴⁴ Yue Maggie Zhou, “Designing for Complexity: Using Divisions and Hierarchy to Manage Complex Tasks,” *Organization Science* 24, no. 2 (April 2013): 340–42, 349–50, <https://doi.org/10.1287/orsc.1120.0744>; and Daft, *Organization Theory & Design*, 115.

⁸⁴⁵ Daft, *Organization Theory & Design*, 113.

⁸⁴⁶ Daft, 115.

⁸⁴⁷ Daft, 115.

⁸⁴⁸ Daft, 115.

⁸⁴⁹ Daft, 116.

grouping model are impossible within divisional grouping.⁸⁵⁰ For smaller agencies with limited staff, it becomes nearly impossible to leverage this approach.⁸⁵¹ The ability for skill specialization, robust knowledge building, research, and analysis is impossible as similar staff scattered throughout the agency must serve as generalists and perform the same redundant activities. The most interesting weakness of divisional grouping is encountered frequently within risk mitigation and consequence management organizations. The lack of connectivity between service lines degrades the cohesion of a unified mission across the entire agency.⁸⁵² Researchers have identified that connections between the services provided in the phases of emergency management are limited.⁸⁵³ Implementing liaisons, task forces, and other horizontal linkage devices within divisional grouping can help implement the comprehensive emergency management vision of cohesive and connected services for constituents.⁸⁵⁴

Matrix or multi-focused grouping (Figure 19) utilizes two or more structural grouping models simultaneously and is also popular among government risk mitigation and consequence management organizations.⁸⁵⁵ Typically, this model is best when there's a need for flexibility around the organization's services and a desire for specialization and economies of scale.⁸⁵⁶ This organization structure enables strong horizontal linkage and is

⁸⁵⁰ Daft, 116.

⁸⁵¹ Daft, 116.

⁸⁵² Daft, 116.

⁸⁵³ National Academy of Public Administration, *Coping with Catastrophe*, 43–44; and Gary L. Wamsley and Aaron D. Schroeder, “Escalating in a Quagmire: The Changing Dynamics of the Emergency Management Policy Subsystem,” *Public Administration Review* 56, no. 3 (1996): 239–40, <https://doi.org/10.2307/976446>.

⁸⁵⁴ Daft, *Organization Theory & Design*, 116; Drabek, *Professional Emergency Manager*, 179; and Barnosky et al., *Streamlining Emergency Management*, 1–3, 6, 9, 20–21.

⁸⁵⁵ Daft, *Organization Theory & Design*, 111; Jay R. Galbraith, “The Multi-Dimensional and Reconfigurable Organization,” *Organizational Dynamics*, Designing Organizations for the 21st-Century Global Economy Special Issue, 39, no. 2 (2010): 115, <https://doi.org/10.1016/j.orgdyn.2010.02.001>; Thomas Sy and Laura Sue D’Annunzio, “Challenges and Strategies of Matrix Organizations: Top-Level and Mid-Level Managers’ Perspectives,” *Human Resource Planning* 28, no. 1 (January 2005): 40–41, EBSCOhost; Stanley M. Davis and Paul R. Lawrence, *Matrix* (Reading, MA: Addison-Wesley, 1977), 11–24, <http://archive.org/details/matrix0000davi>; and Kevan Hall, *Making the Matrix Work: How Matrix Managers Engage People and Cut Through Complexity* (London: Nicholas Brealey Publishing, 2013), 1–2, <http://archive.org/details/makingmatrixwork0000hall>.

⁸⁵⁶ Daft, *Organization Theory & Design*, 118.

typically implemented when other linkage devices are ineffective.⁸⁵⁷ In this approach, the divisional (product or geographic) managers and functional managers have equal authority, and employees report to both depending on the activities they are involved in within the organization.⁸⁵⁸ This dual-authority structure must balance power between the divisional and functional aspects of the organization.⁸⁵⁹ Because of this challenge, many organizations have shifted to two matrix variations where one side of the authority has a more significant share of the overall control, the “functional matrix” or the “product matrix.”⁸⁶⁰

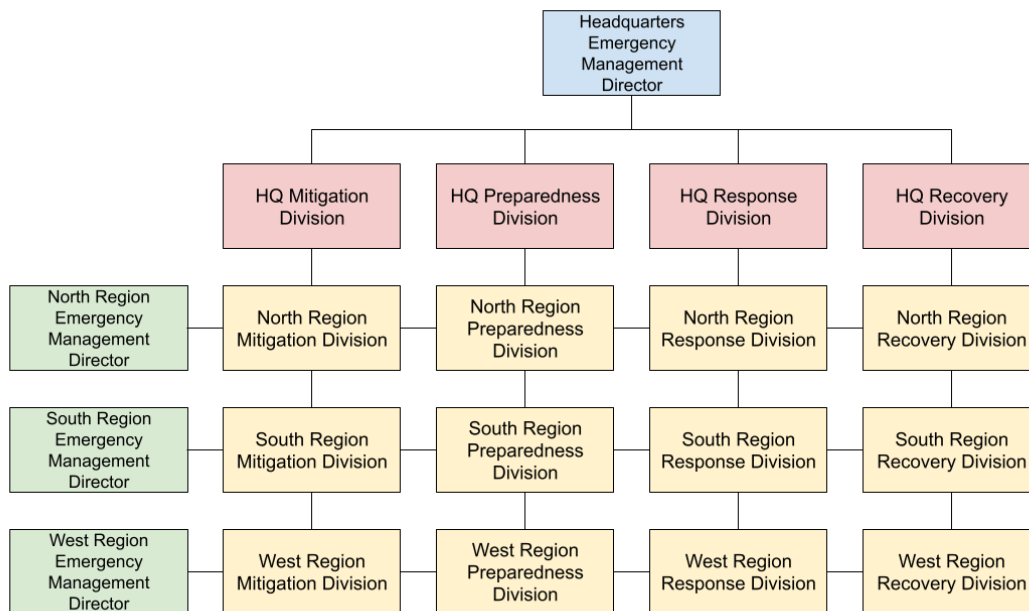


Figure 19. Matrix Grouping

Frequently agencies want to combine the benefits of multiple grouping approaches, with the Arkansas Division of Emergency Management being an excellent

⁸⁵⁷ Daft, 118.

⁸⁵⁸ Daft, 118–19.

⁸⁵⁹ Daft, 119.

⁸⁶⁰ Daft, 119.

example of this model.⁸⁶¹ Two of their departments are organized using divisional grouping using a Preparedness and Response Section and a Recovery and Mitigation Section. Each section houses a mixture of employee types that provide services across the phases of emergency management. Using functional grouping, they also have an Infrastructure and Support Section focused on maintaining the state's radio network and assessing critical infrastructure and a Finance and Grants Section, which houses the grants and financial specialists within the agency. The divisional sections must coordinate frequently with the specialists in the functional units to accomplish their mission.

Federal risk mitigation and consequence management agencies are also frequent users of the matrix model, with many federal agencies implementing ten regional offices across the country that mirror the organizational structure at the national level.⁸⁶² For example, FEMA has a National Preparedness Directorate at the national level and a similarly organized Preparedness Division at the regional level.⁸⁶³ The activities and services each perform align with the regional version of the structure, providing geographically focused services to states. FEMA's matrix structure replicates the four emergency management phases and the "enabling" functions at the national and regional levels.⁸⁶⁴ FEMA utilizes the "product matrix" variation as the Regional Administrator has more authority than the associated national division.⁸⁶⁵

⁸⁶¹ "ADEM Organization," Arkansas Division of Emergency Management, accessed July 27, 2023, <https://www.dps.arkansas.gov/emergency-management/adem/about-adem/adem-organization/>.

⁸⁶² Office of Inspector General, *Inspection of FEMA's Regional Offices*, 2–5.

⁸⁶³ Federal Emergency Management Agency, "U.S. Department of Homeland Security / FEMA Org Chart."

⁸⁶⁴ Federal Emergency Management Agency.

⁸⁶⁵ Steven H. Appelbaum, David Nadeau, and Michael Cyr, "Performance Evaluation in a Matrix Organization: A Case Study (Part One)," *Industrial and Commercial Training* 40, no. 5 (2008): 239–240, <https://doi.org/10.1108/00197850810886469>; Erik W. Larson and David H. Gobeli, "Matrix Management: Contradictions and Insights," *California Management Review* 29, no. 4 (Summer 1987): 132, <https://doi.org/10.2307/41162135>; and Sy and D'Annunzio, "Challenges and Strategies of Matrix Organizations," 40.

When an organization's goals reflect priorities in the services provided and efficient delivery of critical functions, the matrix structure may be most appropriate.⁸⁶⁶ This structure enables some nimble flexibility when the environment constantly changes.⁸⁶⁷ FEMA is responsible for providing support during and after disasters across the country. With the uncertainty of where disasters will impact the country the most, the matrix enables staff to adapt and quickly shift resources across geographic regions.⁸⁶⁸ The dual authority does make employee management problematic, especially when staff must balance competing demands.⁸⁶⁹ Managers in matrix organizations participate in nearly twice as many meetings due to their work's functional and divisional nature.⁸⁷⁰

One of the more modern approaches to departmental grouping is also present in risk mitigation and consequence management. Virtual network grouping enables an organization to operate geographically dispersed, fostering collaboration and

⁸⁶⁶ Robert C. Ford and W. Alan Randolph, "Cross-Functional Structures: A Review and Integration of Matrix Organization and Project Management," *Journal of Management* 18, no. 2 (June 1992): 273–75, <https://doi.org/10.1177/014920639201800204>; and Duncan, "What Is the Right Organization Structure?," 69–71.

⁸⁶⁷ Lawton R. Burns, "Matrix Management in Hospitals: Testing Theories of Matrix Structure and Development," *Administrative Science Quarterly* 34, no. 3 (1989): 350, 366, <https://doi.org/10.2307/2393148>; and Sy and D'Annunzio, "Challenges and Strategies of Matrix Organizations," 39–41.

⁸⁶⁸ Burns, "Matrix Management in Hospitals," 350, 365–66; and Sy and D'Annunzio, "Challenges and Strategies of Matrix Organizations," 39–41.

⁸⁶⁹ Carol Hymowitz, "Managers Suddenly Have to Answer to a Crowd of Bosses," *Wall Street Journal*, August 12, 2003, sec. Marketplace, B1, ProQuest; and Michael Goold and Andrew Campbell, "Making Matrix Structures Work: Creating Clarity on Unit Roles and Responsibility," *European Management Journal* 21, no. 3 (June 2003): 351–352, 354, [https://doi.org/10.1016/S0263-2373\(03\)00048-3](https://doi.org/10.1016/S0263-2373(03)00048-3).

⁸⁷⁰ Christopher A. Bartlett and Sumantra Ghoshal, "Matrix Management: Not a Structure, a Frame of Mind," *Harvard Business Review* 68, no. 4 (1990): 138–145, <https://hbr.org/1990/07/matrix-management-not-a-structure-a-frame-of-mind>; Kevan Hall, "Revisiting Matrix Management," *People and Strategy* 36, no. 1 (2013): 5, ProQuest; and Richard M. Burton, Børge Obel, and Dorthe Døjbak Håkonsen, "How to Get the Matrix Organization to Work," *Journal of Organization Design* 4, no. 3 (2015): 39, <https://doi.org/10.7146/jod.22549>.

communication through loosely connected components.⁸⁷¹ One could consider the “marble cake” style delivery of intergovernmental emergency management services to work using this method, where each level of government is essentially its own department and is connected through various electronic systems to share information and resources.⁸⁷² Constituents of government risk mitigation and consequence management organizations, particularly residents and businesses, may not recognize which agency is providing the service, despite companies and other organizations historically housing all operating units internally.⁸⁷³ Examples of this model are typically derived from increased outsourcing within the organization. Many government agencies have embraced the free-market technique by increasing the number of tasks and functions performed by other entities, whether it be the private sector, nonprofits, or even other governments.⁸⁷⁴ For example, FEMA has implemented increasing programs that have enabled states to perform formerly federal-led activities. These include the Program Administration by States (PAS) delegation for local hazard mitigation plan approval, State-led Public Assistance for local disaster cost recovery,

⁸⁷¹ Daft, *Organization Theory & Design*, 111; N. Anand and Richard L. Daft, “What Is the Right Organization Design?,” *Organizational Dynamics* 36, no. 4 (January 2007): 338–40, <https://doi.org/10.1016/j.orgdyn.2007.06.001>; Melissa A. Schilling and H. Kevin Steensma, “The Use of Modular Organizational Forms: An Industry-Level Analysis,” *Academy of Management Journal* 44, no. 6 (December 2001): 1149, <https://doi.org/10.2307/3069394>; Raymond E. Miles and Charles C. Snow, “The New Network Firm: A Spherical Structure Built on a Human Investment Philosophy,” *Organizational Dynamics* 23, no. 4 (Spring 1995): 5–7, [https://doi.org/10.1016/0090-2616\(95\)90013-6](https://doi.org/10.1016/0090-2616(95)90013-6); and Raymond E. Miles et al., “Organizing in the Knowledge Age: Anticipating the Cellular Form,” *Academy of Management Executive* 11, no. 4 (November 1997): 12–18, <https://doi.org/10.5465/ame.1997.9712024836>.

⁸⁷² Daft, *Organization Theory & Design*, 111; Chang, “Exploring the Dynamics of Local Emergency Management Collaboration in the United States,” 9–12; and May and Williams, *Disaster Policy Implementation*, 21–34.

⁸⁷³ David Nadler, “Partners in Wealth: The Ins and Outs of Collaboration,” *The Economist*, January 21, 2006, 16, <https://www.economist.com/special-report/2006/01/21/partners-in-wealth>; Birkland and DeYoung, “Emergency Response, Doctrinal Confusion, and Federalism in the Deepwater Horizon Oil Spill,” 486–88; and Paul E. Peterson, Barry G. Rabe, and Kenneth K. Wong, *When Federalism Works* (Washington, DC: Brookings Institution, 1986), 8–9, <http://archive.org/details/whenfederalismwo00pete>.

⁸⁷⁴ Anand and Daft, “What Is the Right Organization Design?,” 335–36, 338–39; Pete Engardio, “The Future of Outsourcing,” *BusinessWeek*, no. 3969 (January 30, 2006): 50–58, <https://www.bloomberg.com/news/articles/2006-01-29/the-future-of-outsourcing>; Jane C. Linder, “Transformational Outsourcing,” *MIT Sloan Management Review* 45, no. 2 (Winter 2004): 52, <https://sloanreview.mit.edu/article/transformational-outsourcing/>; and Denis Chamberland, “Is It Core or Strategic? Outsourcing as a Strategic Management Tool,” *Ivey Business Journal*, 2003, 1–5, <https://iveybusinessjournal.com/publication/is-it-core-or-strategic-outsourcing-as-a-strategic-management-tool/>.

and the Supplemental Response Team (SRT) program for federal deployment of state and local incident management teams.⁸⁷⁵

Emergency management agencies at all levels are also known to outsource various activities to the private sector across all phases, including implementing mitigation projects, executing emergency plans and exercises, and performing services during and after disasters.⁸⁷⁶ Most agencies have not taken outsourcing to the most extreme extent, where outside organizations perform all functions with only a small headquarters operation providing direction and coordinating activities.⁸⁷⁷ But, as organizations have recognized the opportunities provided by distributed work environments during the COVID-19 pandemic and information technology has enabled more seamless communications systems across enterprises, government risk mitigation and consequence management organizations may promote greater use of the virtual network structure in the future.⁸⁷⁸

⁸⁷⁵ Tina Weingartner, “Ohio-Based Response Team Could Soon Be One of a Select Few Helping FEMA,” WOSU News, May 18, 2022, <https://news.wosu.org/news/2022-05-18/ohio-based-response-team-could-soon-be-one-of-a-select-few-helping-fema/>; “Program Administration by States (PAS) Pilot – Frequently Asked Questions (FAQs)” (Federal Emergency Management Agency, 2015), https://www.fema.gov/sites/default/files/2020-09/fema_program_administration_states_faqs_02-19-15.pdf; and Federal Emergency Management Agency, *State-Led Public Assistance Guide* (Washington, DC: Federal Emergency Management Agency, 2019), 5–7, https://www.fema.gov/sites/default/files/2020-07/fema_state-led-public-assistance_Guide_2-1-2019.pdf.

⁸⁷⁶ Kevin Fox Gotham, “Disaster, Inc.: Privatization and Post-Katrina Rebuilding in New Orleans,” *Perspectives on Politics* 10, no. 3 (September 2012): 633–46, <https://doi.org/10.1017/S153759271200165X>.

⁸⁷⁷ Anand and Daft, “What Is the Right Organization Design?,” 338–40; Schilling and Steensma, “The Use of Modular Organizational Forms,” 1149; Miles and Snow, “The New Network Firm,” 5–7; and Miles et al., “Organizing in the Knowledge Age,” 12–18.

⁸⁷⁸ Rainey, Fernandez, and Malatesta, *Understanding and Managing Public Organizations*, 243; Shalini Misra, Patrick Roberts, and Matthew Rhodes, “The Ecology of Emergency Management Work in the Digital Age,” *Perspectives on Public Management and Governance* 3, no. 4 (December 2020): 309–10, 312, 314–16, <https://doi.org/10.1093/ppmgov/gvaa007>; and Mike Byrne, Bridget Bean, and Laura Bernstein, “The Future of the Emergency Management Workforce: How to Maintain Compassion, Equity, and Efficiency in a Hybrid Environment,” 13.

One key benefit of this model is the ability to expand and contract services based on changing needs.⁸⁷⁹ The consequence management side of government risk mitigation and consequence management organizations can be highly dynamic depending on the number and severity of disasters.⁸⁸⁰ Outsourcing and the virtual network model can enable flexibility that cannot be compared to housing departments internally.⁸⁸¹ In addition, with many government risk mitigation and consequence management organizations encountering difficulties in demonstrating expertise in any one area, this model enables them to focus on the functions that it does best and contract out functions that can be performed by firms with expertise and competence in those specific areas.⁸⁸² Administrative overhead can be significantly reduced using this structure by outsourcing some enabling functions to firms that can perform these services more efficiently.⁸⁸³

With enhanced flexibility comes less control. Unless precise specifications or requirements are included in the agreements governing these outsourced relationships, the organization with the authority or responsibility to provide the function may lose significant control over how the activities are performed.⁸⁸⁴ This loss of control is particularly concerning in the government's provision of emergency management functions due to frequent opposition to outsourcing public services and the high reliability necessary for these critical activities.⁸⁸⁵ Employees may also have less

⁸⁷⁹ Daft, *Organization Theory & Design*, 123; Miles and Snow, "The New Network Firm," 7, 11–12; Gregory G. Dess et al., "The New Corporate Architecture," *Academy of Management Perspectives* 9, no. 3 (August 1995): 11, <https://doi.org/10.5465/ame.1995.9509210261>; Anand and Daft, "What Is the Right Organization Design?," 339–340; and Henry W. Chesbrough and David J. Teece, "Organizing for Innovation: When Is Virtual Virtuous?," *Harvard Business Review* 80, no. 8 (August 2002): 128, <https://hbr.org/2002/08/when-is-virtual-virtuous>.

⁸⁸⁰ Labadie, "Problems in Local Emergency Management," 489–93; Drabek, *Professional Emergency Manager*, 7; Anderson, *Local Civil Defense in Natural Disaster*, 1, 5–6; and Quarantelli and Dynes, "Different Types of Organizations in Disaster Responses," 17–19.

⁸⁸¹ Daft, *Organization Theory & Design*, 125.

⁸⁸² Don Tapscott, "Rethinking Strategy in a Networked World (or Why Michael Porter Is Wrong About the Internet)," *Strategy+Business*, 2001, 34–41, <https://www.strategy-business.com/article/19911>; and Gotham, "Disaster, Inc.," 633–34, 637.

⁸⁸³ Daft, *Organization Theory & Design*, 125.

⁸⁸⁴ Daft, 125.

⁸⁸⁵ Daft, 126; and Klein, *The Shock Doctrine*, 410–11.

connection or commitment to the organization's mission as they aren't technically affiliated.⁸⁸⁶

Managers may consider revising their agency's organizational structure when it encounters issues with control, communications, and information sharing or does not meet the needs of its constituents.⁸⁸⁷ Daft outlined four symptoms of structural deficiency that help managers understand when adjustments to the organization structure may be necessary.⁸⁸⁸ The first is poor collaboration among operating units. When the response division of an emergency management agency does not weigh in on plans, training, and equipment that may be necessary for the preparedness division to implement, the organization is not sharing information effectively. The second is slow or ineffective decision-making.⁸⁸⁹ Suppose a response-oriented emergency management director must participate in every hazard mitigation project decision. In that case, the organization may be delegating enough, overloading managers, or directing information to the incorrect people. The third is an organization that cannot adapt quickly to environmental changes.⁸⁹⁰ The response to disasters requires significant shifts in resources across jurisdictions.⁸⁹¹ If the agency cannot respond effectively, the structure may not enable enough horizontal collaboration to mobilize. The fourth is the inability to meet goals and poor employee performance.⁸⁹² When the emergency management agency outlines robust goals for preparedness and response efforts but fails to incorporate mitigation and recovery goals that fall under its authority, all employees may not be driven to perform consistently across the organization.

⁸⁸⁶ Daft, *Organization Theory & Design*, 126.

⁸⁸⁷ Daft, 132.

⁸⁸⁸ Child, *Organization*, 3–19; and Jonathan Day, Keith Leslie, and Emily Lawson, “When Reorganization Works,” *McKinsey Quarterly*, no. 4 (December 2003): 21–29.

⁸⁸⁹ Daft, *Organization Theory & Design*, 132.

⁸⁹⁰ Daft, 132.

⁸⁹¹ Labadie, “Problems in Local Emergency Management,” 489–93; Drabek, *Professional Emergency Manager*, 7; Anderson, *Local Civil Defense in Natural Disaster*, 1, 5–6; and Quarantelli and Dynes, “Different Types of Organizations in Disaster Responses,” 17–19.

⁸⁹² Daft, *Organization Theory & Design*, 133.

Managers may revise the organization structure or implement additional vertical or horizontal linkages to resolve these issues.⁸⁹³

The standard organizational structures outlined in this thesis are not typically implemented in the exact specifications outlined in organization theory and design literature.⁸⁹⁴ These structures are adapted and sometimes executed concurrently based on the organization's needs.⁸⁹⁵ Chief executives of jurisdictions and managers of government risk mitigation and consequence management organizations can balance vertical control and horizontal coordination using the various information linkages and structures.⁸⁹⁶ Those organizations that desire greater stability and efficiency should lean towards mechanistic functional structures and can incrementally implement divisional structures, matrix structures and other linkage mechanisms, and finally, a virtual network if they desire an organic organization focused on greater adaptation, learning, and flexibility.⁸⁹⁷ This continuum of design techniques is shown in Figure 20.

⁸⁹³ Daft, 132.

⁸⁹⁴ Galbraith, "The Evolution of Enterprise Organization Designs," 3–4.

⁸⁹⁵ Daft, *Organization Theory & Design*, 131.

⁸⁹⁶ Daft, 131.

⁸⁹⁷ Daft, 131.

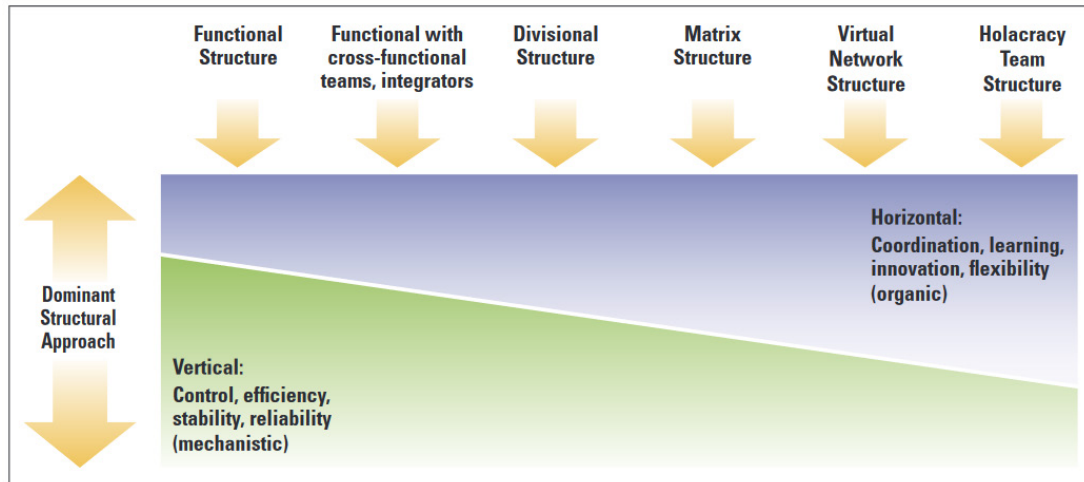


Figure 20. Design Technique Continuum⁸⁹⁸

F. SUMMARY

In summary, Daft's structural contingency fit framework is a valuable tool in this thesis to analyze the design of government risk mitigation and consequence management functions at the jurisdiction and agency levels, both when functions are consolidated or distributed across a jurisdiction. The nature of risk mitigation and consequence management functions within various levels of government and emergency management phases orient the contingency factors of size, strategy and goals, environment, technology, and culture towards efficiency-oriented mechanistic structural designs or adaptation-oriented organic structural designs. These contingency factors are generally oriented towards organic structures when considering the broad set of activities a jurisdiction or consolidated risk mitigation and consequence management agency may be conducting. When functions are divided among individual agencies and departments, mitigation, preparedness, and recovery activities support mechanistic designs. Response functions benefit from the flexible traits of organic structures. Larger organizations tend to be more effective with mechanistic design elements, while smaller organizations can benefit from organic design elements.

⁸⁹⁸ Source: Daft, 132.

These contingency factor orientations affect the five structural dimensions of centralization, formalization, hierarchy of authority, complexity, and specialization toward mechanistic and organic designs. No single structural configuration is entirely mechanistic or organic but instead will adopt traits from both depending on the needs and contingencies of the organization. Finally, various structural techniques, including information linkages and departmental grouping, are used to fit the structural dimensions to contingency factors to improve organizational effectiveness. Table 14 displays a summary of the optimal organization design orientations for each phase of emergency management and a consolidated organization performing more than one phase.

Table 14. Summary of Optimal Design Orientations

Emergency Management Phase	Level of Analysis	Optimal Orientation
Mitigation	Group or Agency	Mechanistic
Preparedness	Group or Agency	Mechanistic
Response	Group or Agency	Organic
Recovery	Group or Agency	Mechanistic
Multiple (Consolidated)	Group, Agency, or Jurisdiction	Organic

V. CASE STUDY ANALYSIS

A. OVERVIEW

To test the ability of the analytical framework to identify ways to improve organizational efficiency and effectiveness, it is applied to the organizational structure of the case study city of Somerville, Massachusetts. The analysis found that Somerville exhibited good organizational fit through its implementation of numerous organizational design strategies that align with its contingency factors. Although Somerville had a good fit between contingency factors and structural dimensions, additional opportunities to improve organizational efficiency and effectiveness were identified and are highlighted throughout this chapter. Data used for this case study analysis included the municipal budget, reports created by departments, and personal observations of the thesis author who served as the city's inaugural director of emergency management.

Somerville has a relatively small population size for a city at 81,045 as of the 2020 U.S. Census.⁸⁹⁹ However, it is one of the most densely populated municipalities on the east coast, occupying only four square miles.⁹⁰⁰ A diverse population lives within the City, home to residential, commercial, and industrial activities.⁹⁰¹ The city has a “strong mayor” form of government and city council.⁹⁰² Located just outside Boston, it has a hazard profile with diverse natural, technological, and human-caused hazards requiring risk mitigation and consequence management efforts.⁹⁰³

⁸⁹⁹ “QuickFacts: Somerville City, Massachusetts,” United States Census Bureau, April 1, 2020, <https://www.census.gov/quickfacts/fact/table/somervillecitymassachusetts/PST045222>.

⁹⁰⁰ Census Bureau.

⁹⁰¹ “About Somerville,” City of Somerville, accessed July 28, 2023, <https://www.somervillema.gov/about>.

⁹⁰² City of Somerville, *Somerville Charter Review Final Report* (Somerville, MA: City of Somerville, 2022), 14, <https://s3.amazonaws.com/somervillema.gov.if-us-east-1/s3fs-public/Somerville%20Charter%20Review%20Final%20Report.pdf>.

⁹⁰³ City of Somerville, *City of Somerville Hazard Mitigation Plan 2022 Update* (Somerville, MA: City of Somerville, MA, 2022), 31, <https://s3.amazonaws.com/somervillema.gov.if-us-east-1/s3fs-public/hazard-mitigation-plan-2022-update.pdf>; and City of Boston, *Threat and Hazard Identification and Risk Assessment (THIRA) and Stakeholder Preparedness Review (SPR): 2021 Report Boston* (Boston, MA: City of Boston, 2021), 3–4.

The city's organization utilizes a mixture of divisional and functional grouping, dividing departments based on various core municipal activities ranging from law enforcement to sewer maintenance.⁹⁰⁴ Non-core activities are consolidated into enabling departments like finance, human resources, and information technology to maximize economies of scale. Many horizontal and vertical linkages exist across the organization. Vertical referral is used within the city for significant decisions requiring additional authority levels, such as policy and budget approvals. Citywide policies and procedures exist in addition to local ordinances that guide municipal operations and standardize control mechanisms. While somewhat outdated, the city does maintain specific ordinances related to emergency response authorities.⁹⁰⁵ Numerous vertical information systems exist, including frequent project management status updates for the Mayor's Office. The Emergency Management Department does serve in an integrating role to coordinate municipal risk mitigation and consequence management activities across the entire organization. Many departments have identified liaisons to support these initiatives. But, with the city's generally small staff size, no integrators exist within departments, and no cross-functional teams are utilized. Instead, task forces are frequently used to support multi-departmental projects across preparedness, response, recovery, and mitigation functions. Tools like Microsoft 365 are used enterprise-wide to share knowledge and information across many risk mitigation and consequence management activities.

In 2021, the city established a full-time emergency management office with a professional emergency manager after previously including emergency management as a collateral function of the fire department.⁹⁰⁶ Incorporating emergency management functions within a fire department is not uncommon at the municipal level of government in New England, as most municipalities cannot justify a stand-alone department to perform

⁹⁰⁴ "City of Somerville Departmental Organization," City of Somerville FY24 Budget, July 18, 2023, <https://city-somerville-ma-budget-book.cleargov.com/8848/introduction/organizational-chart>.

⁹⁰⁵ "Chapter 4 – Emergency Management," Somerville, Massachusetts Code of Ordinances, September 11, 1986, https://library.municode.com/ma/somerville/codes/code_of_ordinances?nodeId=PTIICOR_CH4EMMA.

⁹⁰⁶ City of Somerville, *Emergency Management & Communications Department City of Somerville, MA: Emergency Management Program Roadmap* (Somerville, MA: City of Somerville, MA, 2022), 4.

these functions. The general lack of support for New England counties (except Maine) results in no county emergency management agencies.⁹⁰⁷ With no county emergency management agency, the city coordinates all emergency management efforts directly with the Commonwealth of Massachusetts.⁹⁰⁸ However, like Somerville, many jurisdictions have initiated efforts in the last decade to hire professional emergency management staff due to the increasing frequency and complexity of incidents and the need to focus more on preparedness activities.⁹⁰⁹

Somerville has taken a different approach to establishing their emergency management program. Rather than incorporate all activities within the Emergency Management Accreditation Program (EMAP) Emergency Management Standard and the related “comprehensive emergency management” construct within the new department, the jurisdiction maintained hazard mitigation and long-term recovery activities in separate departments.⁹¹⁰ For example, Somerville’s Office of Sustainability & Environment integrated hazard mitigation activities into its robust climate adaptation program.⁹¹¹ In addition, the City established a new temporary American Recovery Plan Act (ARPA) Office to manage the long-term recovery from COVID-19.⁹¹² It designated the Grants Development Division of the Finance Department as the lead for coordinating disaster cost recovery programs like Federal Emergency Management Agency (FEMA) Public

⁹⁰⁷ Ludwig J. Schumacher, “Emergency Management Span of Control: Optimizing Organizational Structures to Better Prepare Vermont for the Next Major or Catastrophic Disaster” (master’s thesis, Naval Postgraduate School, 2008), 2, <https://hdl.handle.net/10945/3763>.

⁹⁰⁸ Schumacher, 29–30.

⁹⁰⁹ “Emergency Management Directors,” Occupational Outlook Handbook, May 18, 2023, <https://www.bls.gov/ooh/management/emergency-management-directors.htm#tab-6>; and McEntire, “Local Emergency Management Organizations,” 178.

⁹¹⁰ Emergency Management Accreditation Program, *Emergency Management Standard*; and National Governors’ Association, *Comprehensive Emergency Management*, 9, 11–14.

⁹¹¹ “Office of Sustainability and Environment,” City of Somerville, accessed July 28, 2023, <https://www.somervillema.gov/departments/office-sustainability-and-environment>; and “SustainaVille,” City of Somerville, accessed July 28, 2023, <https://www.somervillema.gov/departments/programs/sustainaville>.

⁹¹² Ferris, “Somerville to Receive Nearly \$78 Million in ARPA Funds”; and Somerville GovTV, “American Rescue Plan Act (ARPA) Presentation,” video, 21:35, YouTube, September 23, 2021, <https://www.youtube.com/watch?v=c1l0rYr-QeQ>.

Assistance.⁹¹³ Although the Grants Development Division performs an enabling function within the jurisdiction, they are considered a primary risk mitigation and consequence management department for this analysis, as many emergency management organizations are heavily involved in disaster cost recovery. As of 2023, some preparedness activities remained within other departments, including management of the city’s participation in the Boston Urban Area Security Initiative (UASI) (within the Police Department), public health emergency preparedness (within the Health & Human Services Department), and school preparedness (within the School Department). Long-term plans are to identify which of these activities should be transitioned to the new Emergency Management Department.⁹¹⁴

This case study applies the analytical framework at the jurisdiction level. Conducting the assessment at the agency level for an organization as small as Somerville’s Emergency Management Department would not lead to useful results. As discussed in Chapter III, jurisdiction level analysis can introduce numerous government functions unrelated to risk mitigation and consequence management.⁹¹⁵ Because of this, the study only focuses on the organization and performance of risk mitigation and consequence management activities that fall within the EMAP Emergency Management Standard. Based on the analytical framework, the optimal design of government risk mitigation and consequence management functions at the jurisdiction level is organic due to the need to enable flexibility across all phases of emergency management and decision-making at the lowest level possible (Table 14). Each contingency factor and structural dimension for Somerville’s structure is described and assessed for organic or mechanistic traits. Finally, the orientation of Somerville’s structural design is compared to the optimal orientation of an organic structural design.

⁹¹³ “Grants Development & External Funds,” City of Somerville FY24 Budget, July 18, 2023, <https://city-somerville-ma-budget-book.cleargov.com/8848/departments/grants-development>.

⁹¹⁴ City of Somerville, *Emergency Management & Communications Department City of Somerville, MA*, 14–15, 34.

⁹¹⁵ These functions could include schools, public works, community planning, and others.

B. ORGANIZATIONAL ANALYSIS

1. Contingency Factors

a. Size

While the City of Somerville employs approximately 1,958 full-time equivalent employees, the number dedicated to risk mitigation and consequence management functions is minimal.⁹¹⁶ Risk mitigation and consequence management staff scattered across a few key departments, none of which are substantial. In 2023, the Emergency Management Department employed two permanent staff focused on preparedness and response functions.⁹¹⁷ The Office of Sustainability & Environment has eight staff members. However, other than the climate change program manager and sustainability and resiliency planner, the other employees do not focus solely on hazard mitigation.⁹¹⁸ The ARPA Office houses two employees focused on the COVID-19 recovery.⁹¹⁹ The Grants Development Division employs five employees, with the director performing disaster cost recovery as a collateral duty and two focused on ARPA recovery funding.⁹²⁰ The Police Department Homeland Security Unit has two employees managing numerous preparedness activities, including the city's participation in the Boston UASI program.⁹²¹ Two Health & Human Services Department employees are responsible for public health emergency preparedness as a collateral duty.⁹²² Finally, the School Department employs a part-time

⁹¹⁶ City of Somerville, *City of Somerville Massachusetts: Annual Comprehensive Financial Report* (Somerville, MA: City of Somerville, MA, 2021), 136, <https://drive.google.com/file/d/1997E2oUr5-o2-acjDd9zYgTOiIcj3oJI/view>.

⁹¹⁷ "Emergency Management," City of Somerville FY24 Budget: Proposed Version 5/26/2023, July 18, 2023, <https://city-somerville-ma-budget-book.cleargov.com/8848/departments/emergency-management>.

⁹¹⁸ "Office of Sustainability & Environment," City of Somerville FY24 Budget, July 18, 2023, <https://city-somerville-ma-budget-book.cleargov.com/8848/departments/office-of-sustainability-environment>.

⁹¹⁹ "ARPA Overview," City of Somerville FY24 Budget, July 18, 2023, <https://city-somerville-ma-budget-book.cleargov.com/8848/arpa/type-1>.

⁹²⁰ City of Somerville, "Grants Development & External Funds."

⁹²¹ "Police," City of Somerville FY24 Budget, July 18, 2023, <https://city-somerville-ma-budget-book.cleargov.com/8848/departments/police>.

⁹²² "Health & Human Services," City of Somerville FY24 Budget, July 18, 2023, <https://city-somerville-ma-budget-book.cleargov.com/8848/departments/hhs>.

employee to manage school preparedness activities. Approximately twelve employees are responsible for risk mitigation and consequence management activities. There is no discernable difference in the distribution of these risk mitigation and consequence management staff across the phases of emergency management. Beyond these employees that have significant roles within the jurisdiction's risk mitigation and consequence management functions, many others have some participation ranging from representing their department during emergency responses to managing mitigation construction projects.

Each department housing risk mitigation and consequence management functions contains an organic flat structure with minimal clerical, professional, or administrative support staff. With the small staff size of the City's risk mitigation and consequence management functions, activities benefiting from economies of scale of core emergency management activities are impossible. The larger size of the jurisdictional organization has enabled departments to consolidate services like legal, human resources, finance, external affairs, and procurement. Because risk mitigation and consequence management staff members work within a larger government organization, they frequently encounter the bureaucratic traits found in larger enterprises. Despite these characteristics, Somerville's size contingency factor for risk mitigation and consequence management is much more organic-oriented than mechanistic.

b. Technology

Local governments are responsible for an expansive set of core technologies ranging from designing roadways to educating children. Although these broad municipal technologies are not within the scope of this thesis, the technologies encountered within risk mitigation and consequence management are also fairly comprehensive. For example, Somerville conducts risk mitigation and consequence management activities, from enforcing building codes to performing active shooter exercises. The technologies included within the EMAP Emergency Management Standard serve as the scope of activities used in this analysis. While not accredited as of 2023, the city was working towards meeting all EMAP Emergency Management Standard elements.

The Emergency Management Department is responsible for most technologies in emergency management's response phase. The exceptions to this include some response activities that the Police and Health & Human Services Departments have historically been responsible for. The response phase of emergency management requires a fair number of highly customized service-oriented tools, techniques, and actions. Between the Department's establishment in 2021 and 2023, the Emergency Management Department has managed the Omicron wave of the COVID-19 response, a historic heat wave, a large-scale month-long mass transit shutdown, and the relocation of operations at a school with a ceiling collapse leveraging a mixture of engineering, craft, and nonroutine technologies as categorized using Perrow's framework.⁹²³ These include implementing emergency response plans, sharing information in the emergency operations center, and requesting resources. Similarly, the other departments responsible for response phase activities use similar categories of technologies. Most technologies encountered during this phase are nonroutine, with high task variety and low analyzability. Many of these activities require reciprocal interdependence, where multiple departments work through issues collaboratively during the incident. These characteristics lead to a more organic design for response phase activities.

Like response, preparedness technologies are primarily found within the Emergency Management Department. Some preparedness activities are also housed within the Police and Human & Human Services Departments for hazards where they lead emergency response. In addition, the School Department is responsible for preparedness technology within the scope of their facilities and operations. Because preparedness activities frequently end in some deliverable, many of the technologies implemented within these departments could be seen as organic "small-batch" manufacturing technology.⁹²⁴ Some of these technologies include developing emergency plans, training responders, and conducting disaster exercises. When using Perrow's framework, most of these departments' activities in the preparedness phase are more routine, with engineering and

⁹²³ Perrow, "A Framework for the Comparative Analysis of Organizations," 194–97; and Perrow, *Organizational Analysis*, 75–91.

⁹²⁴ Woodward, *Industrial Organization*, 40–44; and Woodward, *Management and Technology*.

craft technologies also encountered. These technologies have sequential and reciprocal interdependence because of the number of stakeholders contributing to the final deliverable. The routine nature of most preparedness technology could orient this phase toward mechanistic design.

Despite the technology differences between response and preparedness phase activities, there is precedence for including them in the same agency. The National Governors Association (NGA) 1978 study introducing comprehensive emergency management noted the similar skills required between both phases.⁹²⁵ In addition, the reorganization of the U.S. Department of Homeland Security (DHS) and FEMA spurred by the Post-Katrina Emergency Management Reform Act (PKEMRA) was primarily focused on integrating preparedness and response technology after many years of stakeholder complaints.⁹²⁶ The relationship between these phases is likely due to the technology interdependence required.

Mitigation technology tends to have the most distant characteristics compared to the other emergency management phases. The Office of Sustainability & Environment leads mitigation planning and project development within Somerville. Some mitigation activities, particularly those related to the execution of projects and enforcement of policy, can be found within other agencies, including the Office of Strategic Planning and Community Development, the Fire Department's Fire Prevention Bureau, and the Inspectional Services Department. Activities conducted within this phase include developing hazard mitigation plans, implementing risk reduction projects like flood protection measures, and enforcing building codes. Compared to the other phases, these technologies are generally routine, with engineering technology also playing a prominent role. Sequential and reciprocal interdependence are found frequently in these activities, and typically, code enforcement and infrastructure departments are core contributors to

⁹²⁵ National Governors' Association, *State Comprehensive Emergency Management*, 112–13.

⁹²⁶ Bea, *Organization and Mission of the Emergency Preparedness and Response Directorate*, 37; Comfort, Waugh, and Cigler, "Emergency Management Research and Practice in Public Administration," 542; and David Heyman and James Jay Carafano, *DHS 2.0: Rethinking the Department of Homeland Security* (Washington, DC: Center for Strategic and International Studies, 2004), 17, <https://www.csis.org/analysis/dhs-20-rethinking-department-homeland-security>.

mitigation processes. Mitigation contains much more mechanistic-oriented technology than the other phases of emergency management.

Finally, recovery phase technology is led jointly by the ARPA Office and the Finance Department's Grants Development Division. The ARPA Office focuses on recovery program management, including developing recovery projects and long-term planning for COVID-19. Although the Office will only have a lifespan encompassing the performance period of federal ARPA funding, the city would plan to establish a similar office reporting to the mayor for future disasters requiring long-term recovery program management. The Grants Development Division serves as the lead for managing the FEMA Public Assistance post-disaster grant program, among other disaster cost recovery grants that municipalities are eligible for. Like mitigation technology, these recovery technologies are generally routine, with some engineering, craft, and nonroutine technologies included. Recovery does have more organic-oriented nonroutine characteristics than mitigation due to the variety and analyzability of some of the long-term strategic planning involved. But, like preparedness, mitigation, and recovery, the mitigation phase is more oriented toward mechanistic design based on the types of activities frequently encountered.

Somerville's organizational structure heavily considers technology and interdependence in grouping departments. The city has also documented the interdepartmental process relationships, including physical adjacencies, as part of its Building Master Plan.⁹²⁷ Although mitigation, preparedness, and recovery phases generally have more mechanistic-oriented technology, the possibility of nonroutine task variety and potential for tasks that are not analyzable during emergency response orients this contingency factor towards an organic design at the jurisdiction level for Somerville.

c. Environment

The departments responsible for risk mitigation and consequence management functions within Somerville must frequently interact with numerous organizations at other

⁹²⁷ Beyer Blinder Belle Architects & Planners, *City of Somerville Building Renovation & Department Relocation Master Plan: Preliminary Design Program Report* (Somerville, MA: City of Somerville, 2021), 25, <https://s3.amazonaws.com/somervillema.gov.if-us-east-1/s3fs-public/cos-bmp-preliminary-design-program-report-volume-i-bbb-2021-06-21.pdf>.

levels of government, the private sector, and non-government organizations. In addition, each emergency management phase results in different levels of dynamism, complexity, and resource abundance.

Within the response phase, the Emergency Management Department, Health & Human Services Department, and Police Department's Homeland Security Unit experience high levels of dynamism, complexity, and challenges with resource availability. Because there is significant uncertainty on the types of hazards that might occur, Somerville agencies cannot plan for all environmental conditions. During these conditions, the jurisdiction must work with a diverse complement of organizations both in and outside the municipal organizational structure, increasing complexity. Many of these stakeholders are not unfamiliar with Somerville government agencies as they are located within the city and frequently collaborate on projects. This familiarity helps to reduce the complexity compared to what might be encountered at the state or federal levels. Resources are likely to be limited during a crisis making each department more apt to try and control its own necessary finances, supplies, equipment, and staffing. The resource dependence theory may help to explain the historical desire for the Health & Human Services and Police Department's desire to maintain their own emergency management capabilities.⁹²⁸ This highly uncertain environment drives Somerville's response phase activities towards an organic design.

Preparedness brings a higher level of stability to the environment that is not found in response. The Emergency Management Department, Health & Human Services Department, School Department, and Police Department's Homeland Security Unit still must work with a complex environment of stakeholders to develop emergency plans, training, and exercises. However, the list of stakeholders is much more predictable and typically consists of organizations and representatives that are much more similar to each other. The environment is also less dynamic as advanced planning can identify the types of stakeholders that will be involved with preparedness projects. For instance, the city could quickly identify the necessary stakeholders far in advance for developing its

⁹²⁸ Pfeffer and Salancik, *The External Control of Organizations*, 2–5.

emergency operations plan. While resources are not unlimited, they are likely less scarce than during an emergency response. While not entirely mechanistic, the preparedness phase environment is more likely to fall into this category.

Mitigation has the least uncertain environment of all the emergency management phases. The Office of Sustainability & Environment has a core group of stable stakeholders that it works with regularly, and minimal unexpected events occur. They do work with a large number of stakeholders, although many of them are within the environmental, sustainability, and resilience fields. Other Somerville departments engaged in mitigation code enforcement and project management also encounter many highly stable stakeholders. Resources to implement mitigation projects are not plentiful, although there is no increased urgency to implement projects as found during response and recovery. Mitigation activities in Somerville result in the most mechanistic environment.

The ARPA Office has a somewhat uncertain environment that it operates to conduct COVID-19 recovery operations. While the events are not highly dynamic, the number of stakeholders it must work with fluctuates and is not easy to plan for. In addition, the organizations it works with create a reasonably complex environment due to the diverse set of local non-profits and municipal departments it must interface with. While the ARPA Office operates in a fairly uncertain environment, the Grants Development Division operates in a very stable environment. During a disaster recovery operation, it only works with the affected municipal departments and any state or federal grantors providing disaster relief funding. Even with disasters being impossible to predict, the activation of recovery activities by this division is straightforward due to the level of policies and procedures in place. As a disaster stabilizes and moves into long-term recovery, many resources become available to implement recovery programs. This resource abundance creates additional stability for Somerville's recovery activities. Generally, the stable recovery environment is more mechanistic than organic.

Somerville has exposed the technical core directly to the environment, with direct access to constituents and no buffering roles. The small size of government risk mitigation and consequence management functions in Somerville makes the lack of buffering roles effective, but it could likely present additional challenges for a larger municipality.

Somerville's small size makes access to financial and other resources more challenging than a larger jurisdiction. Because of this constraint, Somerville has been careful not to implement new programs and initiatives where other levels of government provide similar services. Similarly, with mitigation and recovery activities being conducted by independent departments, the Emergency Management Department did not make an effort to establish a duplicative role for these phases.

Considering Somerville's role in emergency response, the jurisdiction's external risk mitigation and consequence management environment is uncertain, with countless organizations and agencies involved. In addition, the organizational structure aligns with Lawrence and Lorsch's research on differentiation, which notes subunits will create their own structures, goals, and orientations to support the interface with the external environment better.⁹²⁹ Differentiation is exceptionally high, with comprehensive emergency management functions split across three primary departments. However, the Emergency Management Department's relatively limited number of years in existence makes it challenging to judge the level of integration between these functions or if it is even necessary. At the jurisdiction level, Somerville's organic design is critical to enable the flexibility to work with a dynamic and unexpected set of stakeholders and to ensure integration with extremely heterogeneous organizations.

d. Goals and Strategy

Like many emergency management agencies, the City of Somerville does not have a formal strategic plan for the emergency management program. However, as of 2023, the city was working towards this EMAP Emergency Management Standard requirement. The Emergency Management Department has made progress toward this requirement by establishing annual goals and performance measures as part of the annual budget request for fiscal year 2024.⁹³⁰ While all Somerville departments are required to include goals in their annual budget, this does not guarantee any of them are related to risk mitigation and consequence management.

⁹²⁹ Lorsch, "Introduction to the Structural Design of Organizations," 5.

⁹³⁰ City of Somerville, "Emergency Management."

The Emergency Management Department’s goals for the fiscal year 2024 were focused on preparedness-related activities, including establishing physical and virtual emergency operations centers, developing an alert and warning plan, and developing a sheltering plan.⁹³¹ With these goals in mind, the department requested the addition of a deputy director role to assist with completing these projects. When the city announced the adopted budget, specific mention was made of expanding the Emergency Management Department.⁹³² This department’s focus on preparedness and response activities supports an organic strategy focused on innovation and learning.

The Office of Sustainability & Environment has actively established and monitored climate adaptation and hazard mitigation goals as part of its Somerville Climate Forward initiative.⁹³³ The Office’s dedication and attention to hazard mitigation have enabled the implementation of many of the prioritized projects, with many flood mitigation endeavors underway by the Engineering Department.⁹³⁴ In addition, the SomerVision2040 comprehensive plan highlights numerous climate adaptation, hazard mitigation, and preparedness-related goals and priorities that influence much of the city’s policy development.⁹³⁵ Although there may be benefits in adopting a more mechanistic-oriented strategy to maximize the efficient use of limited financial resources for mitigation projects, Somerville’s work in this space has generally been focused on a more flexible organic strategy.

The ARPA Office has established numerous goals as part of its requirements to implement the ARPA grant requirements equitably across the City. This program’s

⁹³¹ City of Somerville.

⁹³² “Somerville Passes FY24 Budget with Major Investments in Affordability, Youth, & Infrastructure,” City of Somerville, June 29, 2023, <https://www.somervillema.gov/news/somerville-passes-fy24-budget-major-investments-affordability-youth-infrastructure>.

⁹³³ “Somerville Climate Forward,” City of Somerville, accessed July 29, 2023, <https://www.somervillema.gov/departments/programs/somerville-climate-forward>; and “Somerville Passes FY24 Budget with Major Investments in Affordability, Youth, & Infrastructure.”

⁹³⁴ “Flood Ready,” City of Somerville, accessed July 29, 2023, <https://www.somervillema.gov/departments/programs/flood-ready>.

⁹³⁵ City of Somerville, *SomerVision 2040: Comprehensive Plan Update 2010–2040* (Somerville, MA: City of Somerville, 2021), 18–27, <https://www.somervision2040.com/wp-content/uploads/sites/3/2021/10/SomerVision-2040-Adopted.pdf>.

extensive federal funding has led to high executive oversight and additional support to progress goals. Deadlines imposed by the grant requirements will help push the completion of these goals over the next few years. Like mitigation activities, recovery can be an excellent area to adopt a mechanistic efficiency-focused strategy to maximize the use of limited resources. But, with the massive surge of recovery funding issued after COVID-19, the city has taken a different approach to implementing the post-disaster recovery program as flexibly as possible.

The separation of the recovery, mitigation, preparedness, and response functions within Somerville help to reduce the possibility of conflicting priorities at the agency level. At the jurisdiction level, it is still up to the mayor and city council to think comprehensively about risk mitigation and consequence management and ensure the development of realistic goals and allocation of necessary resources to ensure the overall emergency management program will be successful. Most importantly, Somerville's focus for risk mitigation and consequence management has primarily focused on providing unique services that meet the needs of the city's diverse population and municipal stakeholders. The City's services fill the gaps the state or federal government does not meet. Because of this loose implementation of Porter's differentiation strategy, Somerville leans more towards an organic strategy contingency factor.⁹³⁶

e. Culture

Somerville's culture contingency factor was somewhat challenging to assess when this thesis was written. First, as of 2023, the emergency management program had only been in place for about two years and predominantly focused on dealing with the numerous back-to-back emergencies plaguing the city. Second, after 18 years, Mayor Joseph Curtatone closed out his final term in 2021, resulting in a significant turnover of senior staff members and a new executive direction for Somerville. Finally, staff turnover was significant throughout all ranks in the City, which may have been part of the larger "Great

⁹³⁶ Porter, *Competitive Strategy*, 37–38.

Resignation” taking place in the United States after COVID-19.⁹³⁷ Organizational culture needs time to develop, and with the sizable number of new employees, the culture assessed in this thesis may not be the culture that is in place in subsequent years.⁹³⁸ But, despite this massive cultural transition, this analysis can point to some indicators uncovering the design orientation of the jurisdiction.

The establishment of Somerville’s inaugural Emergency Management Department during COVID-19 limited the implementation of the traditional municipal office environment. Work was still predominantly being conducted remotely with no uniforms, corner offices, or other power structures that could lead to the visible articles driving culture. Instead, the uncertainty led to a highly flexible and externally focused culture. Using the model described by Daft, these characteristics have resulted in an adaptability culture within municipal operations, including the Emergency Management Department, the Office of Sustainability & Environment, and the ARPA Office.⁹³⁹ In addition, the leaders of each of these departments come from a professional background and have an education aligned with the goals and strategy of their applicable phase of emergency management. Each director took their new role within twelve months between 2021 and 2022, so it is uncertain if hiring professionals within these agencies helped prevent clashing cultures with employees.

However, reducing COVID-19 response activities has led to most departments shifting to other projects associated with preparedness and mitigation. For instance, in 2022, the Emergency Management Department initiated work on the new emergency operations plan while the Office of Sustainability & Environment began an update of the Somerville Climate Forward climate plan. These activities are generally stable but externally focused, with an achievement culture. Similarly, the ARPA Office fostered an

⁹³⁷ Maury Gittleman, “The ‘Great Resignation’ in Perspective,” *Monthly Labor Review*, July 2022, <https://doi.org/10.21916/mlr.2022.20>.

⁹³⁸ M. M. Petty et al., “Relationships between Organizational Culture and Organizational Performance,” *Psychological Reports* 76, no. 2 (April 1995): 486, <https://doi.org/10.2466/pr0.1995.76.2.483>.

⁹³⁹ Detert, Schroeder, and Mauriel, “A Framework for Linking Culture and Improvement,” 854; and Denison, *Corporate Culture and Organizational Effectiveness*, 11–15.

achievement culture as they continued work on developing the COVID-19 recovery program.⁹⁴⁰ The only significant difference across Somerville’s primary risk mitigation and consequence management departments was the bureaucratic culture-oriented Grants Development Division, predominantly focused internally on supporting disaster cost recovery for municipal departments, a reasonably stable environment.

Somerville has worked to instill an organic-oriented adaptability culture across the jurisdiction to support the external environment and the need for organization-wide innovation. Of all the contingency factors, culture is likely the most dynamic as shifting administration priorities, staff, and other factors must adapt to maintain a high-performance culture. A similar jurisdiction level assessment of organizational culture in another year may present significantly different results.

2. Structural Dimensions

a. Formalization

Compared to larger jurisdictions like state and federal governments, the City of Somerville has substantially less formalization. As a government entity, some formalization is encountered within enabling services like procurement, finance, human resources, and other internal processes. However, they are not specific to risk mitigation and consequence management. These processes are formalized through rules and policies implemented by the mayor, city council, and other bodies. These rules and procedures ensure standardization across all municipal departments and functions.

Somerville’s core risk mitigation and consequence management functions have far less documentation than other aspects of the jurisdiction. For example, the city’s emergency operations plan is the only document the Emergency Management Department maintains as of 2023. The Office of Sustainability and Environment maintains the city’s hazard mitigation and climate adaptation plans. The level of formalization is likely to change as the city works towards meeting the requirements of the EMAP Emergency

⁹⁴⁰ Namu Sampath, “Somerville and the MAPC Are Collaborating to Allocate ARPA Funds,” *Somerville Journal*, April 5, 2022, <https://www.wickedlocal.com/story/somerville-journal/2022/04/05/somerville-and-mapc-collaborating-allocate-arpa-funds/7243449001/>.

Management Standard. The Standard requires the development of many formal plans and procedures across all phases of emergency management. The City's role in the "shared governance" approach of risk mitigation and consequence management means that state and federal agencies may create rules that must be implemented locally, commonly focused on grant requirements. This example can be demonstrated by the ARPA Office and Grants Development Division's compliance with regulations and policies related to federal recovery funding programs. Somerville's formalization structural dimension at the jurisdiction level is oriented towards an informal, organic design with few rules.

b. Specialization

Somerville has embraced a more mechanistic structural dimension than other local jurisdictions with comprehensive emergency management agencies to some extent. Dividing comprehensive emergency management activities into phases and distributing them across a few departments increases specialization at the agency level. However, even with this division of labor, Somerville's small size still results in many generalists compared to a larger jurisdiction. For example, Somerville's Emergency Management Department contains a director and a deputy director, both generalist positions completing various tasks related to emergency management's preparedness and response phases. This example can also be seen within the Office of Sustainability & Environment, ARPA Office, and Grants Development Division, which each have less than eight employees. Conversely, the Massachusetts Emergency Management Agency (MEMA) and FEMA employ a wide variety of positions, many highly specialized.

Since Somerville's risk mitigation and consequence management functions are part of a larger jurisdictional organizational structure, many enabling functions have been specialized in other non-core departments, including lawyers, accountants, communications specialists, and other roles. The few empowered generalist roles within the primary risk mitigation and consequence management departments do orient Somerville's specialization structural dimension towards organic, despite its higher level of specialization than other similar jurisdictions.

c. Hierarchy of Authority

Somerville's risk mitigation and consequence management functions rely heavily on collaborative teamwork rather than a strict hierarchy of authority. The core risk mitigation and consequence management departments like Emergency Management, Sustainability & Environment, ARPA, and Grants Development frequently collaborate on initiatives. Additionally, each department coordinates regularly with other municipal agencies that perform collateral risk mitigation and consequence management activities. The great majority of this work is self-directed. These horizontal workflows enable quick coordination across agencies without relying on formal approvals from the chain of command. Like the other structural dimensions, Somerville's role as a municipality does bring some level of mechanistic traits, including requirements for hierarchical approvals of some functions like procurement, policy development, budgeting, and human resources. But, these vertical processes do not consume the majority of work on risk mitigation and consequence management within the city.

The collaborative nature of risk mitigation and consequence management skews any organizational assessment of an emergency management agency towards horizontal collaboration rather than vertical hierarchy. However, Somerville's small size makes horizontal coordination much more essential than a larger agency at the state or federal level. The Emergency Management Department regularly convenes multi-departmental teams to work on preparedness projects and uses the Incident Command System (ICS) to create ad hoc organizations to manage emergency response. The Office of Sustainability & Environment manages numerous coalitions with departments working on climate adaptation activities. In general, the hierarchy of authority structural dimension leans heavily towards an organic design at the jurisdiction level in Somerville.

d. Complexity

Although Somerville's organizational structure is a bit more complex than similar jurisdictions of its size, it is still much more organic than other risk mitigation and consequence management organizations. With the city splitting risk mitigation and consequence management functions across four primary departments, the horizontal

complexity is much higher than a jurisdiction that has consolidated these functions within a comprehensive emergency management agency. However, the differentiation across departments limits the need for frequent horizontal coordination. As a municipality, Somerville also has many other non-risk mitigation and consequence management departments that are interfaced with when necessary.

In the case of the Emergency Management Department, Office of Sustainability & Environment, and the ARPA Office, the directors report to the mayor, resulting in an extremely flat hierarchy. In the Grants Development Division, the director reports to the finance director, who reports to the mayor. Despite this additional step for the Grants Development Division, the City's primary risk mitigation and consequence management departments do not have high vertical complexity. Spatial complexity is also low, with all functions located within the four square miles of Somerville.

The somewhat higher horizontal complexity does not create issues within the city thanks to strong horizontal linkages. In addition, the management of these independent functions by educated and experienced professionals within their specific functional area limits the need to elevate issues to higher levels and improves organizational performance. In Somerville, the only leaders that must have some generalized knowledge across individual departments are the mayor, the chief of staff, and the chief administrative officer. With low levels of complexity vertically, horizontally, and spatially, this structural dimension is oriented toward an organic design.

e. Centralization

The final structural dimension assessed in Somerville is centralization. With the diverse and loosely coupled nature of municipal functions, it is unlikely that any organization at the jurisdiction level is highly centralized. High centralization would require a municipal chief executive to know intimately about topics ranging from tax collection to managing youth recreation programs. Because of this, Somerville's structure is highly decentralized, allowing directors to make the majority of critical decisions necessary to operate each function. Because the risk mitigation and consequence

management departments under review in this thesis have such a small staff, the structure does not have many opportunities to decentralize further.

From a risk mitigation and consequence management context, the mayor of Somerville is only involved in a few key decisions, including budgeting, emergency declarations, and approving emergency procurement. Although they are kept informed on many activities performed within the Emergency Management Department, Office of Sustainability & Environment, ARPA Office, and Grants Development Division, the mayor typically only provides strategic direction and feedback rather than micromanaging all activities. Because of the temporary and highly prominent nature of the ARPA COVID-19 recovery program, the mayor is more involved in decision-making for this office.

Somerville's decentralized structure also enables decision-making by staff who are most familiar with their specific responsibilities within the overall risk mitigation and consequence management program. In this design, the director of emergency management does not make mitigation and recovery decisions but provides guidance and feedback to professionals working in these spaces. Of all the structural dimensions in this analysis, the decentralized structure in Somerville could be considered very close to an optimal organic design.

C. OPTIMAL ORGANIZATIONAL FIT COMPARISON

As discussed in the analytical framework chapter, the contingencies encountered within local jurisdictions promote using an organic design for risk mitigation and consequence management functions. These contingencies in their most extreme orientation include small size, nonroutine technology, uncertain environment, innovation strategy, and adaptability culture. Those jurisdictions striving to create an optimal fit for these contingency factors will likely implement organic structural dimensions, including few rules, empowered roles, collaborative teamwork, horizontal communication, and a decentralized informal structure. However, no jurisdiction is likely to contain an entirely organic design.

Somerville has customized the design of their organizational structure to create additional specialization and complexity by separating preparedness/response, mitigation,

and recovery activities into separate departments. Even with the addition of these mechanistic traits, Somerville’s organizational structure at the jurisdiction level is extremely organic-oriented (Table 15). Somerville does not present any symptoms of structural deficiency. Collaboration is strong between units, decision-making is quick and efficient, the organization can adapt to environmental changes, and it can meet annual goals through solid employee performance. When considering the internal process approach of organizational effectiveness, Somerville’s efforts to improve internal structures, coordination, and activities by aligning structural dimensions to contingency factors have likely led to a high-performing organization.

Table 15. Comparison of Somerville Jurisdiction Level Optimal Fit and Somerville Actual Fit Structural Orientations⁹⁴¹

	Somerville Optimal Fit (Organic)	Somerville Actual Fit (Organic)
Contingency Factors		
Size	Small Size	Small Size
Technology	“Service” Technology	“Service” Technology
Environment	Changing Environment	Changing Environment
Goals and Strategy	Innovation Strategy	Innovation Strategy
Culture	Adaptive Culture	Adaptive Culture
Structural Dimensions		
Formalization	Few Rules, Informal	Few Rules, Informal
Specialization	Empowered Roles	Empowered Roles
Hierarchy of Authority	Collaborative Teamwork	Collaborative Teamwork
Complexity	Horizontal Communications	Horizontal Communications
Centralization	Decentralized Structure	Decentralized Structure

D. SUMMARY

The case study proved helpful in researching how risk mitigation and consequence management functions can be organized in a governmental jurisdiction to improve efficiency and effectiveness. The analytical framework helped determine if a local jurisdiction exhibited organizational fit. When applied to Somerville, Massachusetts, the

⁹⁴¹ Adapted from Daft, *Organization Theory & Design*, 30.

framework confirmed that the structural design techniques implemented were in alignment with the contingency factors the city faced. Beyond identifying if the jurisdiction had a strong organizational fit, the framework uncovered areas within Somerville's organizational structure where fit was not as strong as it could have been. Implementing structural design techniques recommended by Daft within those structural dimensions would likely lead to improved performance. The case study also confirmed that organizations will not be designed in a wholly mechanistic or organic structural orientation. As demonstrated by the case study, Somerville added mechanistic traits to its specialization and complexity structural dimensions to operate more effectively. The case study also highlighted limitations with the analytical framework, particularly in its application to local jurisdictions and the influence of the jurisdiction's non-risk mitigation and consequence management functions on organizational fit. These limitations are explained further in Chapter VI. Overall, the case study served as a helpful plausibility probe of the analytical framework, warranting more research in the future.

VI. CONCLUSION

A. FINDINGS

Despite creation of many new government organizations focused on risk mitigation and consequence management and the numerous reorganizations of these entities at all levels of government, the nexus of organization design and risk mitigation and consequence management has generally been an underexplored topic. More importantly, it was unclear how organization theory had influenced the structural design of these emergency management, homeland security, resilience, and other associated agencies. While the study did not confirm if organization theory and design principles were considered deliberately throughout the development and redevelopment of government risk mitigation and consequence management organizations, it did identify many of the most common structural design techniques in place across all levels of government. These techniques included horizontal and vertical information linkage mechanisms and examples of departmental grouping models. Mimetic and coercive isomorphism likely led to state and local organizations implementing these techniques to gain legitimacy by driving towards homogeneity with peer organizations.⁹⁴² Regardless of “why” or “when” these design techniques were implemented, their presence in many government risk mitigation and consequence management agencies warranted additional research to determine if they influence organizational effectiveness.

To assess how risk mitigation and consequence management functions can be organized in a governmental jurisdiction to improve effectiveness and efficiency, the thesis first evaluated the literature to determine applicable theories and analytical frameworks that could be used to assess the effectiveness of an organization. After reviewing numerous models, structural contingency theory provided the most promise for a flexible model that could be used in all sizes and types of agencies at every level of government. In addition, the thesis found that Daft’s contingency fit framework incorporated a comprehensive

⁹⁴² Suchman, “Managing Legitimacy,” 589; Pugh and Hickson, “Paul J. DiMaggio and Walter W. Powell,” 257–60; and DiMaggio and Powell, “The Iron Cage Revisited,” 150.

portion of previously studied relationships between contingency factors and structural dimensions. With this in mind, applying Daft's model to risk mitigation and consequence management was seen as the next appropriate step to understand the framework's limitations better and if it could help assess organizational effectiveness.

Applying Daft's analytical framework to government risk mitigation and consequence management organizations led to many findings. A literature review identified key drivers of contingency factor orientation for risk mitigation and consequence management organizations. These drivers ranged from how the size contingency factor is influenced by a risk mitigation and consequence management organization's served population size, hazard landscape, and available resources to how the organization's employees and leadership affect the culture contingency factor. Understanding these drivers led to determining the characteristics that could lead to an organic or mechanistic leaning contingency factor.

In addition, it was discovered that the phases of emergency management also led to different orientations of contingency factors, with the response phase typically leading to organic contingency factors. In contrast, preparedness, mitigation, and recovery led to more mechanistic orientations. When applied to a consolidated risk mitigation and consequence management organization, contingency factors were oriented towards an organic design due to the diverse functions performed and the need for flexibility and adaptation. Most importantly, applying the framework to risk mitigation and consequence management confirmed that organizations at different levels of government or organizational missions are likely to encounter different contingencies.⁹⁴³ Simply put, a local resilience office likely has different contingency factor orientations than a state homeland security agency.

Similarly, the thesis reviewed the analytical framework's application to structural dimensions and design techniques for risk mitigation and consequence management organizations. With consolidated risk mitigation and consequence management organizations having an organic design orientation, structural dimensions should also be

⁹⁴³ Drabek, *Professional Emergency Manager*, 7, 9, 48, 64, 107, 233.

organic-oriented to enable the best organizational “fit.” In cases where recovery, mitigation, or preparedness functions are separated in independent organizations, mechanistic structural dimensions may be more appropriate. The review of organization theory and design literature also identified the key structural design techniques that can be utilized to improve effectiveness within government risk mitigation and consequence management organizations, including strong horizontal information linkages and departmental grouping that promotes collaboration and integration.

A plausibility probe was conducted using the case study municipality of Somerville, Massachusetts, to test the analytical framework. Somerville’s contingency factors were assessed for organic or mechanistic traits at the jurisdiction level. It was found that all five contingency factors were organic-oriented at the jurisdiction level. This finding meant Somerville’s structural dimensions and design techniques should be organic to enable the best organizational “fit.” After reviewing the structural dimension orientations and design techniques used in Somerville, it was determined that the structure was generally organic. While all structural dimensions were organic, the specialization and complexity categories did incorporate some mechanistic traits due to the separation of response, preparedness, mitigation, and recovery functions across four key departments. In sum, using an organic design, Somerville’s strong organizational “fit” between contingency factors and structural dimensions has likely contributed to organizational effectiveness.

The case study provided great insight into the usefulness of Daft’s analytical framework. First, the case study demonstrated where the framework can be applied to local jurisdictions looking to improve their organizational performance. In a smaller city like Somerville, the analytical framework worked well at the jurisdiction level of analysis and was not helpful to the agency or group levels. Second, its application to Somerville confirmed that the city’s efforts to implement structural design techniques that better align with its contingency factors can sustain an effective and efficient organization. Finally, and most importantly to the thesis research question, the case study proved that the analytical framework could identify areas of structural deficiency and recommend targeted structural

design strategies and reorganizations that promote greater alignment between contingency factors and structural dimensions where needed.

B. LIMITATIONS

1. Limited Data

Despite the optimistic findings of this study, numerous limitations were encountered. Although the study relied solely on secondary research, there was limited empirical data on risk mitigation and consequence management organization performance and interagency coordination specific to the Somerville, Massachusetts, case study jurisdiction. This limitation may be a result of the lack of policies to document problems and successes, a lack of dedicated staffing to document and assess areas for improvement, no examples of performance issues, or limited instances of risk mitigation and consequence management activities that would provide opportunities for smart practices or lessons learned.⁹⁴⁴ It is also possible that Somerville’s hiring of a professional emergency manager may have contributed to a reduced number of performance issues across each emergency management phase from 2021 to the publishing of this thesis in 2023. Professional emergency managers should be adequately trained and educated to integrate and conduct activities in all four emergency management phases.⁹⁴⁵ Future analysis may consider assessing jurisdictions that have emergency managers serving in a collateral duty.

Even beyond the lack of organizational performance data identified in the case study jurisdiction, organizational performance related to specific risk mitigation and consequence management organizations or interdepartmental coordination within a

⁹⁴⁴ Amy K. Donahue and Robert V. Tuohy, “Lessons We Don’t Learn: A Study of the Lessons of Disasters, Why We Repeat Them, and How We Can Learn Them,” *Homeland Security Affairs* 2, no. 2 (July 2006): 13, <https://www.hsaj.org/articles/167>; and Chris Currie, *National Preparedness: Additional Actions Needed to Address Gaps in the Nation’s Emergency Management Capabilities*, GAO-20-297 (Washington, DC: Government Accountability Office, 2020), 34–39, <https://www.gao.gov/assets/gao-20-297.pdf>.

⁹⁴⁵ National Governors’ Association, *Comprehensive Emergency Management*, 7, 36; National Governors’ Association, *State Comprehensive Emergency Management*, 112–14, p132-133; Jensen and Kirkpatrick, “Local Emergency Management and Comprehensive Emergency Management (CEM),” 2–3, 10; Cwiak, “Framing Higher Education and Disciplinary Efforts Through a Professionalization Lens,” 64–65; National Research Council, *Disaster Resilience*, 29; and Jensen et al., “The County Emergency Manager’s Role in Recovery,” 159.

jurisdiction is infrequently documented.⁹⁴⁶ The lack of formally documented gaps may be because of the general concern by jurisdiction and agency leadership about publishing information that may be embarrassing or could lead to additional vulnerabilities due to adversarial threats.⁹⁴⁷ The common exception to this lack of documented gaps is vertical intergovernmental coordination issues, particularly during the response or recovery phases.⁹⁴⁸ In some cases, after-action reports documenting these intergovernmental issues are shared broadly for political purposes to demonstrate poor performance from other subordinate or superordinate jurisdictions.⁹⁴⁹

To mitigate the impact of the lack of empirical data on the case study jurisdiction, the thesis applied the data collected from after-action reports, peer-reviewed studies, and other sources in all levels of government from across the United States to craft an “optimal fit” model of Daft’s analytical framework for risk mitigation and consequence management organizations. The goal of the model was to provide a benchmark of contingency factor and structural dimension orientations that Somerville could be compared to. Because of the relative infrequency and uncertainty of disaster incidents in any given area and the frequent recurrence of common “lessons learned” across jurisdictions, performance issues encountered during the response phase were leveraged as a plausible indicator of gaps in Somerville.

Similarly, the model captured organizational performance examples from functions in the mitigation, preparedness, and recovery phases that could be expected to be encountered within Somerville. Special attention was also made to collecting data from oversight organizations like the Government Accountability Office (GAO), Congressional

⁹⁴⁶ Donahue and Tuohy, “Lessons We Don’t Learn,” 13; and McGeary, “Applying Goldwater-Nichols Reforms,” 94–95.

⁹⁴⁷ Christopher Hurtado et al., “Evaluating the Frequency of Operational Research Conducted during the 2014–2016 West Africa Ebola Epidemic,” *International Journal of Infectious Diseases* 77 (December 2018): 31, <https://doi.org/10.1016/j.ijid.2018.09.027>; and Donahue and Tuohy, “Lessons We Don’t Learn,” 12.

⁹⁴⁸ Claire Connolly Knox, “Analyzing After-Action Reports from Hurricanes Andrew and Katrina: Repeated, Modified, and Newly Created Recommendations,” *Journal of Emergency Management* 11, no. 2 (2013): 163–64, <https://doi.org/10.5055/jem.2012.0135>.

⁹⁴⁹ Moynihan, “From Intercrisis to Intracrisis Learning,” 192; Donahue and Tuohy, “Lessons We Don’t Learn,” 12; and Roberts, “Dispersed Federalism,” 419.

Research Service (CRS), inspector general and ombudsman offices, and other state and local performance audit agencies. Although this “optimal fit” model was a helpful workaround to apply broader evidence to Somerville, future research may consider collecting primary organizational performance research on any jurisdiction or agency where the analytical framework is used.

2. Emergency Management Phases

The thesis used emergency management phases to group risk mitigation and consequence management activities and assess the mechanistic or organic orientation of the organization’s contingency factors. These phases are relatively broad, making comparing organizational technologies, tasks, and activities between the phases challenging.⁹⁵⁰ These broad phases resulted in a mixture of organic or mechanistic traits within each.⁹⁵¹ For example, the recovery phase had many “routine” technologies like processing disaster cost reimbursements.⁹⁵² However, the recovery phase also included activities like post-disaster recovery planning, which leveraged more “nonroutine” technologies.⁹⁵³

Additionally, levels of analysis influenced the orientation of the contingency factors for each phase. For instance, the recovery, mitigation, and preparedness functions were found to have primarily mechanistic contingency factors. Still, some of the activities within those phases could be considered organic, particularly in local-level organizations. Similarly, some response-level activities could be regarded as mechanistic at the state and federal levels due to the large size of these organizations and the types of technology used. This thesis made every attempt to describe each phase as “mechanistic-oriented” or

⁹⁵⁰ Daft, *Organization Theory & Design*, 18, 339; Perrow, “A Framework for the Comparative Analysis of Organizations,” 194–97; and Perrow, *Organizational Analysis*, 75–91.

⁹⁵¹ National Governors’ Association, *Comprehensive Emergency Management*, 9.

⁹⁵² Jensen and Kirkpatrick, “Local Recovery Coordinators and the National Disaster Recovery Framework,” 5–6; and Jensen et al., “The County Emergency Manager’s Role in Recovery,” 161–64.

⁹⁵³ Jensen and Kirkpatrick, “Local Recovery Coordinators and the National Disaster Recovery Framework,” 5–6; and Jensen et al., “The County Emergency Manager’s Role in Recovery,” 161–64.

“organic-oriented,” as all their contingency factors did not fall entirely into one extreme.⁹⁵⁴ Assessing mechanistic and organic traits within the more granular Emergency Management Accreditation Program (EMAP) Emergency Management Standard elements may be more appropriate for future analysis.⁹⁵⁵

3. Levels of Analysis

As described in Chapter IV, the analytical framework can be utilized at many levels, including the jurisdiction, agency, or even within individual departments. Pennings notes that there are unclear relationships when using structural contingency theory at various levels of analysis.⁹⁵⁶ Analysis at the jurisdiction level introduced numerous factors unrelated to risk mitigation and consequence management. Assessing a government jurisdiction would be the public sector equivalent of looking at a conglomerate like General Electric or Berkshire Hathaway in the private sector, as they contain many unrelated functions that are loosely coupled.⁹⁵⁷ There was no simple approach to exclude these functions from the analysis, mainly due to interactions of core emergency management functions with enabling functions like finance, human resources, and information technology across the entire jurisdictional organization structure. This thesis tried to overcome this challenge by only assessing the structural dimensions and contingency factors impacting the jurisdiction’s risk mitigation and consequence management activities, excluding the many other governmental functions the jurisdiction may be responsible for, like libraries, public works, or schools. Regardless, analyzing at the jurisdiction level while ignoring the non-risk mitigation and consequence management

⁹⁵⁴ Galbraith, “The Evolution of Enterprise Organization Designs,” 3–4; Madia, “Homeland Security Organizations,” 18–19; Shenkar and Ellis, “The Rise and Fall of Structural Contingency Theory,” 790; and Ellis, Almor, and Shenkar, “Structural Contingency Revisited,” 73.

⁹⁵⁵ Emergency Management Accreditation Program, *Emergency Management Standard*.

⁹⁵⁶ Pennings, “Structural Contingency Theory,” 284.

⁹⁵⁷ Galbraith, *Designing Organizations*, 241–47; Pennings, “Structural Contingency Theory,” 271; Karl E. Weick, *The Social Psychology of Organizing*, 2nd ed. (Reading, MA: Addison-Wesley, 1979), 110–12; Tom Christensen, Per Lægreid, and Kjell Arne Røvik, *Organization Theory and the Public Sector: Instrument, Culture and Myth*, 2nd ed. (London: Routledge, 2020), 30, <https://doi.org/10.4324/9780367855772>; and Seymour D. Greenstone, *Emergency Management: A National Perspective I* (Fort Lauderdale, FL: Graham W. Watt & Associates, 1989), 11, <https://apps.dtic.mil/sti/citations/ADA225922>.

functions that comprise the overall organizational structure made determining contingency factor orientations challenging.

In addition, the jurisdiction level analysis caused the optimal configuration of contingency factors and structural dimensions to always orient towards an organic design to enable flexibility in dealing with the variety of risk mitigation and consequence management activities and non-risk mitigation and consequence management activities (i.e., running the library or maintaining parks). The analysis found that including diverse, dynamic, and uncertain activities and environments automatically leads to an organic design recommendation. As described in the analytical framework, this default orientation could be problematic as the mitigation, preparedness, and recovery phases may perform more optimally using mechanistic design techniques.

Furthermore, while the problem statement highlights interdepartmental issues at all levels of government, this thesis only tested the analytical framework at the jurisdiction level in the case study city of Somerville, Massachusetts. This municipality has a small dedicated risk mitigation and consequence management staff. Utilizing this analytical framework at the agency level for the small offices within this jurisdiction was not conducive to an organization design analysis as only one or two people were responsible for various disparate functions. Instead, a job or cognitive task analysis within the field of organizational behavior may be more appropriate for the few employees being assessed.⁹⁵⁸ An agency level analysis would be more suitable for a state or federal agency with its own goals, strategies, and robust organizational structure. Because of this, the generalizability of Daft's framework is not recommended at the agency level for small risk mitigation and consequence management organizations.

4. Shared Responsibilities in Performing Functions

While the scope of this research incorporated risk mitigation and consequence management organizations at all levels of government, including federal, state, and local,

⁹⁵⁸ June Wei and Gavriel Salvendy, "The Cognitive Task Analysis Methods for Job and Task Design: Review and Reappraisal," *Behaviour & Information Technology* 23, no. 4 (July 2004): 273–75, <https://doi.org/10.1080/01449290410001673036>; and Daft and Steers, *Organizations*, 8–9.

the analytical framework utilized was designed only to assess one level of government or organization at a time. Because of this federalism-derived “shared governance” approach used to deliver risk mitigation and consequence management programs, organizational effectiveness, as defined by this study, did not indicate the effective delivery of an entire function to the public. Different levels of government were performing independent yet connected pieces of each function.⁹⁵⁹ This type of inter-organizational relationship is not as common in the private sector, where an analytical framework like Daft’s is more likely to be utilized.⁹⁶⁰ Alternative methodologies to study the entire ecosystem of government risk mitigation and consequence management functions are described further in the future research section of this thesis.

Furthermore, the results from one level of government could not be generalized across another level. While each level of government was engaged in most risk mitigation and consequence management activities across each of the four phases of emergency management, the types of activities within one phase may be completely different across each level. For example, when considering disaster sheltering activities, the local government may be responsible for providing volunteers and a facility, the state may provide supplies and transportation, and the federal government may provide funding.⁹⁶¹ Despite each activity being encompassed within the response phase of emergency management, they each consist of different organizational technologies, goals, and strategies. Because of this disparity, the analysis results from one level of government could not be compared or applied to subordinate or superordinate levels for that jurisdiction.

⁹⁵⁹ May and Williams, *Disaster Policy Implementation*, 6, 15; and Smith, “Why State Emergency Management Agencies Reorganize,” 2.

⁹⁶⁰ Christensen, Lægveid, and Røvik, *Organization Theory and the Public Sector*, 2; and Bozeman, “Organization Design in the Public Bureaucracy,” 109.

⁹⁶¹ New York State Disaster Preparedness Commission, *New York State Comprehensive Emergency Management Plan: Mass Care Annex* (Albany, NY: New York State Disaster Preparedness Commission, 2023), 1–5, https://www.dhses.ny.gov/system/files/documents/2023/03/final-nys-mass-care-annex-wv-march-2023_0.pdf.

5. Structural Contingency Theory

One of the general concerns with structural contingency theory is its complexity and inconsistent evidence regarding interdependencies and conflicts between contingency factors.⁹⁶² In some cases, organizations (particularly those responsible for multiple emergency management phases) may have a mixture of organizational technologies, a diverse set of goals, and numerous operating environments. In this study, contingency factors frequently conflicted, resulting in an uneven application of structural design techniques when considering the diversity of environments, strategies, goals, technologies, and cultures within the entire suite of government risk mitigation and consequence management functions.⁹⁶³

Like many consolidated government risk mitigation and consequence management organizations, Somerville's shift between "steady-state" preparedness and mitigation activities to emergency response. This dynamic resulted in substantial changes to contingency factors, misaligning the fit quality with the organization's structural dimensions.⁹⁶⁴ Because of these complexities, this study promotes the approach that the framework is not meant to be applied as a complete unit and that optimal fit may never be achieved.⁹⁶⁵ Instead, the framework should be used to identify symptoms of structural deficiency and recommend individual structural design techniques that may be mixed and

⁹⁶² Turkulainen and Ketokivi, "The Contingent Value of Organizational Integration," 39; Pfeffer, *New Directions for Organization Theory*, 160; Shenkar and Ellis, "The Rise and Fall of Structural Contingency Theory," 790–91; Pennings, "Structural Contingency Theory," 273–74; and Gresov, "Exploring Fit and Misfit," 431–32, 447–50.

⁹⁶³ Gresov, "Exploring Fit and Misfit," 431.

⁹⁶⁴ Gresov, 433; National Governors' Association, *State Comprehensive Emergency Management*, 214; Rosen, "Reorganizing for Homeland Security," 26; Donaldson, "The Contingency Theory of Organizational Design," 26; Stehr, "Changing Roles and Responsibilities of the Local Emergency Manager," 45; and Phillips, Neal, and Webb, *Introduction to Emergency Management*, 179–80.

⁹⁶⁵ Daft, *Organization Theory & Design*, 131; Galbraith, "The Evolution of Enterprise Organization Designs," 3–4; Gresov, "Exploring Fit and Misfit," 434; Donaldson, "The Contingency Theory of Organizational Design," 23; Ellis, Almor, and Shenkar, "Structural Contingency Revisited," 73–74; and Shenkar and Ellis, "The Rise and Fall of Structural Contingency Theory," 790.

matched to gain a better organizational fit.⁹⁶⁶ Despite the limitations, this thesis takes a similar view to Selto et al. in 2015, “Though most other investigators have not found elementary contingency theories (for example, selection approaches) to be informative, we found them to be crucial to understanding the dynamics of this workplace.”⁹⁶⁷ While the structural contingency theory-derived analytical framework appears to be a solid tool in assessing the effectiveness of the wide varieties of government risk mitigation and consequence management organizations, these limitations should be considered in future research and iterations of the framework.

C. RECOMMENDATIONS

The case study findings and the evidence gathered from the literature review support recommendations for jurisdictions looking to improve the effectiveness of their risk mitigation and consequence management organizations using proven structural design techniques. When an organization exhibits symptoms of structural deficiency, these recommendations can serve as options to improve effectiveness. Each recommendation in this section is briefly described and assessed for ease of implementation within government risk mitigation and consequence management organizations.

The recommendation that’s most likely the easiest to implement is to **clarify risk mitigation and consequence management roles and responsibilities horizontally across the jurisdiction’s organizational structure**.⁹⁶⁸ This technique has the least influence from organization theory and design. In jurisdictions where multiple government risk mitigation and consequence management organizations exist, the jurisdiction’s chief

⁹⁶⁶ Child, *Organization*, 5–10; Day, Leslie, and Lawson, “When Reorganization Works”; Daft, *Organization Theory & Design*, 131; Galbraith, “The Evolution of Enterprise Organization Designs,” 3–4; and Lex Donaldson and Greg Joffe, “Fit – The Key to Organizational Design,” *Journal of Organization Design* 3, no. 3 (December 30, 2014): 38, 43, <https://doi.org/10.7146/jod.18424>.

⁹⁶⁷ Frank H. Selto, Celia J. Renner, and S. Mark Young, “Assessing the Organizational Fit of a Just-in-Time Manufacturing System: Testing Selection, Interaction and Systems Models of Contingency Theory,” *Accounting, Organizations and Society* 20, no. 7 (October 1995): 682, [https://doi.org/10.1016/0361-3682\(95\)00022-2](https://doi.org/10.1016/0361-3682(95)00022-2).

⁹⁶⁸ Fastiggi, Meerow, and Miller, “Governing Urban Resilience,” 1274–75; Choi and Brower, “When Practice Matters More Than Government Plans,” 668–75; Wenger, Dynes, and Quarantelli, *Disaster Analysis*, 16–19; and Stevenson and Hayman, *Local Government Disaster Protection*, 47.

executive and senior leadership can formally document the activities each internal department should engage in and develop a process to delineate functions being performed by multiple entities.⁹⁶⁹ Additionally, they should work to increase domain consensus across all stakeholders and leadership enforce these roles and responsibilities.⁹⁷⁰ For example, when considering preparedness phase activities for a pandemic, a municipality can establish the public health department's emergency preparedness staff as the lead for the jurisdiction's planning and resource acquisition while designating the emergency management office as the lead for municipal continuity of operations planning. As demonstrated in the City of Somerville case study, clear lanes of authority were established for the Emergency Management Department, Office of Sustainability & Environment, American Recovery Plan Act (ARPA) Office, and Grants Development Division to prevent gaps and overlaps in the delivery of risk mitigation and consequence management services.

The challenge with this recommendation is the almost infinite number of activities that need to be clarified and delineated, especially within emergency management's dynamic and uncertain response phase. Because it is impossible to pre-establish all roles and responsibilities for emergent issues and initiatives, it is vital to establish a process to triage activities for jurisdictional departments to take the lead. The field of study on "risk ownership" may be pertinent to assist risk mitigation and consequence management organizations in holistically triaging all risks the jurisdiction is exposed to and determining the appropriate entities to manage them across all phases of emergency management.⁹⁷¹

The second recommendation is to **implement additional evidence-based horizontal information linkages across a jurisdiction's risk mitigation and consequence management functions**. Compared to other suggestions, this does not require a structural reorganization of risk mitigation and consequence management

⁹⁶⁹ Wenger, Dynes, and Quarantelli, *Disaster Analysis*, 16–19; and Stevenson and Hayman, *Local Government Disaster Protection*, 47.

⁹⁷⁰ Drabek, *Professional Emergency Manager*, 132–33, 253; and Stevenson and Hayman, *Local Government Disaster Protection*, 38.

⁹⁷¹ Arno Gerken et al., *Getting Risk Ownership Right* (New York: McKinsey & Company, 2010), 10, <https://www.mckinsey.com/~media/mckinsey/business%20functions/risk/our%20insights/getting%20risk%20ownership%20right/getting%20risk%20ownership%20right.pdf>.

functions but instead supplements the structure with ad hoc or permanent links between the existing entities. Task forces and liaisons have proven to be popular and useful tools in coordinating emergency management functions within jurisdictions.⁹⁷² For larger jurisdictions, more permanent linkage mechanisms like integrators and cross-functional teams can be helpful tools to overcome coordination challenges encountered across formal reporting structures. One example of a horizontal linkage could include a municipality's use of liaisons within departments such as engineering, code enforcement, community planning, and fire prevention to streamline coordination on hazard mitigation projects that cross departmental boundaries. In the City of Somerville, establishing a task force called the Local Emergency Planning Committee includes representation from critical municipal departments and is an essential horizontal linkage for preparedness phase activities. Howard cautions that horizontal linkages do not come without risk and could create excessive costs of coordination.⁹⁷³ The goal of horizontal linkages should be to enable the right amount of work process coordination without requiring excessive coordination between departments that operate well independently.

The third recommendation proposes that jurisdictions **consider leveraging the evidence-based practices of departmental grouping to examine the organization of their risk mitigation and consequence management functions**. Conducting a structural reorganization can significantly impact an organization's staffing, resources, and governance, making this recommendation more challenging than the previous two.⁹⁷⁴ Jurisdictions can analyze workplace technologies using Thompson's framework of interdependence to determine the various organizational workflows, including pooled,

⁹⁷² Dutch Leonard and Arn Howitt, "Rethinking the Management of Novel Risks" (presentation, Worcester, MA, November 4, 2015), 13, 16, 21, <https://www.mass.gov/doc/effective-crisis-leadership-dutch-leonard/download>; Eric McNulty et al., "Swarm Intelligence: Establishing Behavioral Norms for the Emergence of Collective Leadership," *Journal of Leadership Education* 17, no. 2 (April 2018): 22, 27, 29, <https://doi.org/10.12806/V17/I2/R2>; and Drabek, *Professional Emergency Manager*, 179.

⁹⁷³ Howard, "Organization and Reorganization as Manifestation of Public Policy," 249–54.

⁹⁷⁴ Hannah Sistare, *Government Reorganization: Strategies and Tools to Get It Done* (Washington, DC: IBM Center for the Business of Government, 2004), 5–7, <https://www.businessofgovernment.org/sites/default/files/SistareReport.pdf>; Stephen Heidari-Robinson, "Making Government Reorgs Work," *Harvard Business Review*, March 30, 2017, <https://hbr.org/2017/03/making-government-reorgs-work>; and Howard, "Organization and Reorganization as Manifestation of Public Policy," 278–79.

sequential, and reciprocal.⁹⁷⁵ In addition, the jurisdiction can categorize departmental technology using Perrow's framework, identifying risk mitigation and consequence management tasks that are routine, craft, engineering, and nonroutine.⁹⁷⁶ These frameworks can assist larger risk mitigation and consequence management organizations in reorganizing internal functions at the agency level based on functional, divisional, or matrix grouping accounting for available resources, technology types, and workflow interdependence. In the case of smaller jurisdictions with few risk mitigation and consequence management staff, the same concept can apply by reorganizing or consolidating functions across separate departments at the jurisdiction level. An example of this can be found in the City of Somerville case study, which is investigating the transfer of the Police and Health & Human Services Departments' preparedness and response functions within the new Emergency Management Department. Reorganizations like this can move similar activities requiring frequent integration and coordination under the same chain of command and promote shared resources.⁹⁷⁷

The literature and case study analysis also supports a fourth recommendation for agencies and jurisdictions to **divest some risk mitigation and consequence management functions to other departments or levels of government** to improve organizational effectiveness. Sometimes it may be challenging for a jurisdiction or agency to align its structural design to its contingency factors. For instance, the organization size contingency factor associated with the response phase of emergency management promotes an organic small organization size due to the importance of an agile and flexible organizational structure.⁹⁷⁸ However, organization size in government agencies is typically dictated by population size, available financial resources, and constituent needs rather than the type of

⁹⁷⁵ Thompson, *Organizations in Action*, 54–55.

⁹⁷⁶ Perrow, "A Framework for the Comparative Analysis of Organizations," 194–97; and Perrow, *Organizational Analysis*, 75–91.

⁹⁷⁷ Mintzberg, *The Structuring of Organizations*, 104–6.

⁹⁷⁸ Pil and Holweg, "Exploring Scale," 36; Sadtler, "The Problem with Size," 52–55; and Daft, *Organization Theory & Design*, 408.

risk mitigation and consequence management functions being performed.⁹⁷⁹ In this case, larger agencies may avoid certain response phase activities to focus on mechanistic risk mitigation and consequence management functions.⁹⁸⁰ In other instances, divesting functions is associated with limited resource availability and a desire to prevent duplication of effort. The literature notes that an organization can control its external environment contingency factor by deciding where it does business.⁹⁸¹ For instance, the City of Somerville Emergency Management Department has avoided conducting long-term recovery activities as the City's ARPA Office already performs this well. This recommendation is much more challenging than the others due to the political hurdles of discontinuing some risk mitigation and consequence management functions within a department or level of government and the multiple interconnected shifts of resources and governance changes necessary to enable the appropriate government organization to succeed in providing the service.

The fifth and final and most challenging recommendation to implement is to **completely overhaul the policy model used to frame government risk mitigation and consequence management functions**. From an organization design context, the most important reason for this exercise is to prevent copying weak and conflicting constructs across organizations due to isomorphism.⁹⁸² The literature review has demonstrated that jurisdictions frequently group functions associated with the four phases of comprehensive emergency management together within the same agency.⁹⁸³ Those agencies typically

⁹⁷⁹ Edwards and Goodrich, "Organizing for Emergency Management," 44; Drabek, *Professional Emergency Manager*, 176–77, 233; National Emergency Management Association, *NEMA Biennial Report 2022*, 29–30; National Association of Counties, *Managing Disasters at the County Level*, 3, 20; Schneider, "An Overview of the 'New' Emergency Management," 26; McEntire, "Local Emergency Management Organizations," 170; Stevenson and Hayman, *Local Government Disaster Protection*, 28, 35; and Wilson and Oyola-Yemaiel, "Evolution of Emergency Management," 128.

⁹⁸⁰ Donahue and Joyce, "Framework for Analyzing Emergency Management," 731.

⁹⁸¹ Kotter, "Managing External Dependence," 88–89.

⁹⁸² Pugh and Hickson, "Paul J. Dimaggio and Walter W. Powell," 257–60; DiMaggio and Powell, "The Iron Cage Revisited," 150; and W. Richard Scott, *Institutions and Organizations: Ideas, Interests and Identities*, 4th ed. (Thousand Oaks, CA: Sage Publications, 2014), 183–88.

⁹⁸³ Neal, "Reconsidering the Phases of Disasters," 239–40, 259–60; Baird, *The "Phases" of Emergency Management*, 2; and Hogue and Bea, *Federal Emergency Management and Homeland Security Organization*, 18.

divide internal departments using those phases in a divisional grouping structure.⁹⁸⁴ From an organizational design perspective, this thesis confirmed that certain activities within the preparedness and recovery phases have technologies, environments, goals, and cultures that align more with the response phase.⁹⁸⁵ In 1997, David Neal critiqued the four phases of the 1978 National Governors Association (NGA) report, noting that “the current use of disaster phases will continue to exacerbate the theoretical confusion or even gridlock in the field.”⁹⁸⁶ Neal does not go as far as to recommend that the entire portfolio of tasks and activities included within comprehensive emergency management be revisited.⁹⁸⁷ Still, he does suggest a second look at how those tasks and activities are organized.⁹⁸⁸ In the time since Neal’s article, the four foundational phases in the NGA report have been modified by some agencies or have completely fallen out of use by others.⁹⁸⁹ With the inconsistent application of these phases and some disputes on their value, a fresh look at how risk mitigation and consequence management activities are associated with each other is warranted.⁹⁹⁰

RAND Corporation has recommended shifting from emergency management phases and homeland security mission areas to a simplified two-category risk mitigation and consequence management model.⁹⁹¹ But, RAND’s research stops short of recommending this new construct to structurally design government risk mitigation and

⁹⁸⁴ Neal, “Reconsidering the Phases of Disasters,” 239–40, 259–60; Baird, *The “Phases” of Emergency Management*, 2; and Hogue and Bea, *Federal Emergency Management and Homeland Security Organization*, 18.

⁹⁸⁵ National Governors’ Association, *State Comprehensive Emergency Management*, 108, 112–14.

⁹⁸⁶ Neal, “Reconsidering the Phases of Disasters,” 258.

⁹⁸⁷ Neal, 259–60.

⁹⁸⁸ Neal, 259–60.

⁹⁸⁹ Neal, 249–52, 259–60; Boshier, Chmutina, and van Niekerk, “Stop Going Around in Circles,” 526; Baird, *The “Phases” of Emergency Management*, 7–20; and Savitt, “Role of the County Emergency Manager,” 93.

⁹⁹⁰ Neal, “Reconsidering the Phases of Disasters,” 240, 246–52, 259–60; National Governors’ Association, *State Comprehensive Emergency Management*, 108; Boshier, Chmutina, and van Niekerk, “Stop Going Around in Circles,” 525–26; Baird, *The “Phases” of Emergency Management*, 7–20; and Savitt, “Role of the County Emergency Manager,” 93.

⁹⁹¹ Barnosky et al., *Streamlining Emergency Management*, 25–26.

consequence management organizations across all levels of government. Additionally, the recommendation of rethinking the risk mitigation and consequence management framework has already been tried to some extent by creating new constructs like “homeland security” and “resilience.” Some scholars argue that these new models have done more harm than good, and this thesis has demonstrated they have little basis in organization theory and design.⁹⁹² Regardless, this recommendation to thoughtfully consider organizational theory in designing any new policy construct is especially pertinent in 2023 as the Federal Emergency Management Agency (FEMA) looks to redesign its Resilience office from the divisional mitigation and preparedness silos to a new customer-focused functional model.⁹⁹³ If the history of mimetic isomorphism within risk mitigation and consequence management organizations proves any indication, state and local jurisdictions will likely reorganize their agencies to align with FEMA’s structure, programs, and services.⁹⁹⁴

D. FUTURE RESEARCH

Although this study has provided a basic understanding of how structural contingency theory can be used to organize government risk mitigation and consequence management functions, there are many opportunities for additional research. First, the initial findings from the plausibility probe conducted in this study support further, more in-depth analyses using the Daft framework. Using the structured, focused comparison methodology on Daft’s framework is a logical next step for future research.⁹⁹⁵ The

⁹⁹² Jensen and Kirkpatrick, “Local Emergency Management and Comprehensive Emergency Management (CEM),” 3–4, 9–10; Tierney, “Recent Developments in U.S. Homeland Security Policies,” 7; Waugh and Streib, “Collaboration and Leadership for Effective Emergency Management,” 136; Charles R. Wise, “Organizing for Homeland Security After Katrina: Is Adaptive Management What’s Missing?,” *Public Administration Review* 66, no. 3 (2006): 306, <https://doi.org/10.1111/j.1540-6210.2006.00587.x>; and David A. McEntire, “The Historical Challenges Facing Emergency Management and Homeland Security,” *Journal of Emergency Management* 5, no. 4 (2007): 17–18, <https://doi.org/10.5055/jem.2007.0011>.

⁹⁹³ Federal Emergency Management Agency, *Stakeholder Engagement Findings*, 1.

⁹⁹⁴ Durbin, “Organizational Structuring for Homeland Security,” 28, 39, 42; Smith, “Why State Emergency Management Agencies Reorganize,” 70, 84; and Waugh, *Living with Hazards, Dealing with Disasters*, 63, 258–59.

⁹⁹⁵ George and Bennett, *Case Studies and Theory Development*, 97.

structured, focused comparison is a comparative case study analysis style that enables the researcher to compare and cumulate the findings systematically.⁹⁹⁶ George and Bennett's text, *Case Studies and Theory Development in the Social Science*, notes that the key benefit of this methodology over a traditional case study is the systematic comparison across a select group of carefully selected research questions.⁹⁹⁷ Most importantly, the structured, focused comparison approach directs the researcher to craft general questions focused on the research objective to standardize data collection.⁹⁹⁸

The structured, focused comparison could be conducted in various configurations, including comparing a jurisdiction with a full-time professional emergency manager against a jurisdiction with a collateral duty emergency manager. Another approach could be a comparison of two jurisdictions of different sizes or levels of government to understand better how these contingencies influence mechanistic and organic structural designs. One of the critical limitations identified in this study was the challenges of using the framework at the jurisdiction level in local government due to the influence of non-risk mitigation and consequence management functions on the jurisdiction's overall organizational structure. This limitation could be mitigated by focusing future efforts on conducting a comparison at the agency level using larger organizations such as state or federal emergency management, homeland security, or resilience agencies. In addition, future iterations of the research should test for mechanistic or organic contingency factors using more granular ways of dividing and grouping the risk mitigation and consequence management activities like the EMAP Emergency Management Standard elements or FEMA Core Capabilities.⁹⁹⁹ The four phases of comprehensive emergency management were sufficient in the plausibility probe case study but would likely present additional challenges in a structured, focused comparison.

⁹⁹⁶ George and Bennett, 97.

⁹⁹⁷ George and Bennett, 99.

⁹⁹⁸ George and Bennett, 97.

⁹⁹⁹ Emergency Management Accreditation Program, *Emergency Management Standard*; and Department of Homeland Security, *National Preparedness Goal*, 2.

In addition to further testing the analytical framework, the literature review of this thesis identified a need for additional primary research within each contingency factor category. For example, additional empirical research within the technology contingency factor is greatly needed to understand better the nature of dependencies and workflows of risk mitigation and consequence management activities. Further primary research on this topic would assist in applying Thompson's framework of task interdependence and Perrow's categorization of departmental technologies to organize activities within an organization logically.¹⁰⁰⁰ Methods used for this primary research could include surveys to emergency managers at all levels of government asking about the nature of relationships, workflows, and interdependence between preparedness, response, recovery, and mitigation activities. In 2001, Tierney noted that we still know little about what makes an emergency management organization effective, with most studies conducted between the late 1960s and early 1990s.¹⁰⁰¹ Since that period, no significant studies of risk mitigation and consequence management organizations have been completed.

Furthermore, conducting additional empirical research on the types of technologies and activities performed by government risk mitigation and consequence management organizations would be helpful. As part of their research on the nexus of emergency management and chief resilience officers, Jensen and Kirkpatrick searched for empirical studies that could demonstrate the tasks and activities that emergency management is involved in and how they divide their time across those activities.¹⁰⁰² In most cases, mentions of emergency management participating in all aspects of comprehensive

¹⁰⁰⁰ Perrow, "A Framework for the Comparative Analysis of Organizations," 54–55, 195–96; and Perrow, *Organizational Analysis*, 75–80.

¹⁰⁰¹ Kathleen J. Tierney, Michael K. Lindell, and Ronald W. Perry, eds., *Facing the Unexpected: Disaster Preparedness and Response in the United States* (Washington, DC: The National Academies Press, 2001), 47–51, <https://doi.org/10.17226/9834>.

¹⁰⁰² Jensen and Kirkpatrick, "Local Emergency Management and Comprehensive Emergency Management (CEM)," 3.

emergency management (or not at all) were not grounded in empirical research.¹⁰⁰³ Jensen and Kirkpatrick note, “The fact is we do not know as much as we need to about such a critical and, potentially, broad, role or what is being accomplished by the individuals in it.”¹⁰⁰⁴ This research is essential to the application of organization theory and design on risk mitigation and consequence management agencies as it is possible successful structural design techniques used in one organization may not be effective in a similar organization due to differences in contingency factors and the types of activities they are performing for their jurisdictions.¹⁰⁰⁵

The environment contingency factor is also an area where additional primary research is needed. Lawrence and Lorsch’s research on differentiation and integration is a foundation for further analysis to understand the nuances of teams within preparedness, response, recovery, and mitigation departments.¹⁰⁰⁶ Robust empirical research of the standard departmental grouping models found within government risk mitigation and consequence management organizations, the presence of different organization types within the same jurisdiction, and the placement of these functions within the overall organizational structure could uncover trends and smart practices in organizing these governmental functions.

This thesis has also highlighted potential opportunities for additional research in the strategy and culture contingency factors. Within the strategy and goals contingency

¹⁰⁰³ Jensen and Kirkpatrick, 3; Chang and Neal, “Promotion or Transition,” 107–9; Patrick S. Roberts et al., “The Emergency Manager as Risk Manager,” in *Disaster Research and the Second Environmental Crisis: Assessing the Challenges Ahead*, ed. James Kendra, Scott G. Knowles, and Tricia Wachtendorf (Cham, Switzerland: Springer International Publishing, 2019), 262–65, <https://doi.org/10.1007/978-3-030-04691-0>; Jenna Tyler, Abdul-Akeem Sadiq, and Douglas S. Noonan, “A Review of the Community Flood Risk Management Literature in the USA: Lessons for Improving Community Resilience to Floods,” *Natural Hazards* 96, no. 3 (April 2019): 1226, <https://doi.org/10.1007/s11069-019-03606-3>; and Claire B. Rubin, “Long Term Recovery from Disasters -- The Neglected Component of Emergency Management,” *Journal of Homeland Security and Emergency Management* 6, no. 1 (2009): 1, <https://doi.org/10.2202/1547-7355.1616>.

¹⁰⁰⁴ Jensen and Kirkpatrick, “Local Emergency Management and Comprehensive Emergency Management (CEM),” 3.

¹⁰⁰⁵ Drabek, *Professional Emergency Manager*, 7, 9, 48, 64, 107, 233, 253; Wenger, Dynes, and Quarantelli, *Disaster Analysis*, 74, 76–77; and Stevenson and Hayman, *Local Government Disaster Protection*, 49.

¹⁰⁰⁶ Lawrence and Lorsch, *Organization and Environment*, 23–53, 84–158.

factor, future research should look at the differences in strategy implemented by different types of risk mitigation and consequence management organizations at all levels of government. For example, the research question may look to understand if resilience-branded organizations adopt a risk reduction strategy compared to homeland security-branded organizations focusing on preparedness and response strategy. For the culture contingency factor, research should investigate the cultural conflicts posed by integrating the more mechanistic preparedness, mitigation, and recovery phases with the organic response phase. It would also be helpful to understand if the subcultures that emerge within the staff of each department reduce organizational performance.

This proposed research agenda for each contingency factor can help scholars and practitioners better understand the relationship between the phases of emergency management using the core characteristics of an organization and its environment. In addition, this research can further support the recommendation provided in this thesis to evaluate the value of the comprehensive emergency management construct as an organizational model for risk mitigation and consequence management functions.

Finally, while this thesis tested an analytical framework focused on the jurisdiction and agency levels of analysis, future research could support a system level analysis. This extension of the analytical framework should incorporate the role of the “shared governance” intergovernmental delivery model in the effectiveness of government risk mitigation and consequence management functions. The “marble cake” federalism style of vertically distributing risk mitigation and consequence management functions across the United States is considered one of the leading causes of the gaps and overlaps uncovered throughout the COVID-19 pandemic response.¹⁰⁰⁷ This unprecedented disaster in the era of modern emergency management contributed to duplication of effort and innumerable inconsistencies in the delivery of risk mitigation and consequence management functions at each government level. Notable examples from the response and recovery include local and state emergency management and public health agencies competing with FEMA and

¹⁰⁰⁷ May and Williams, *Disaster Policy Implementation*, 6; and Cigler, “Fighting COVID-19,” 1, 5. Vertical distribution includes the intergovernmental dissemination of risk mitigation and consequence management functions or activities across federal, state, and local entities.

the U.S. Department of Health and Human Services (HHS) to execute personal protective equipment contracts, issue conflicting emergency protective measure recommendations, and establish countless financial recovery programs.¹⁰⁰⁸ In sum, COVID-19 has underscored the Achilles heel of emergency management: every agency, at every level of government, tries to do every risk mitigation and consequence management activity.¹⁰⁰⁹

This thesis focused on the horizontal distribution and consolidation of risk mitigation and consequence management functions within the analytical framework to maintain a manageable scope. Future researchers could attempt to extend Daft's structural contingency theory analytical framework by considering the additional vertical dimension of intergovernmental coordination. The organization theory and design literature has considered system coordination to some extent through the virtual network grouping model of organizing departmental functions.¹⁰¹⁰ Virtual network grouping considers the outsourcing and distribution of organizational functions coordinated through information systems and relationships, much like the "shared governance" model.¹⁰¹¹ It is also possible that Daft's analytical framework is not appropriate for the system level of analysis.¹⁰¹² Instead, future research at this level of analysis may be better suited for other theoretical constructs on the topics of systems, networks, collaboration, or transaction costs. In addition to extending or revising the analytical framework, this research will require

¹⁰⁰⁸ Meghan Lopez, "FEMA Vehemently Denies Taking over State Contracts for PPE Purchases," Denver7, May 15, 2020, <https://www.thedenverchannel.com/news/coronavirus/fema-vehemently-denies-taking-over-state-contracts-for-ppe-purchases>; David A. Graham, "Governors Are Passing the Coronavirus Buck to Mayors," *The Atlantic*, June 18, 2020, <https://www.theatlantic.com/ideas/archive/2020/06/covid-preemption-reversals/613210/>; and Tony Romm and Erica Werner, "State, Local Governments Wrestle over Quickly Dwindling Coronavirus Aid, Complicating Talks on Next Federal Bill," *Washington Post*, July 13, 2020, <https://www.washingtonpost.com/us-policy/2020/07/13/cities-states-cares-act/>.

¹⁰⁰⁹ Nancy J. Knauer, "The COVID-19 Pandemic and Federalism: Who Decides?," *New York University Journal of Legislation and Public Policy* 23, no. 1 (2020): 3, <https://doi.org/10.2139/ssrn.3599239>.

¹⁰¹⁰ Daft, *Organization Theory & Design*, 111; Anand and Daft, "What Is the Right Organization Design?," 338–40; Schilling and Steensma, "The Use of Modular Organizational Forms," 1149; Miles and Snow, "The New Network Firm," 5–7; and Miles et al., "Organizing in the Knowledge Age," 12–18.

¹⁰¹¹ Daft, *Organization Theory & Design*, 111; Anand and Daft, "What Is the Right Organization Design?," 338–40; Schilling and Steensma, "The Use of Modular Organizational Forms," 1149; Miles and Snow, "The New Network Firm," 5–7; and Miles et al., "Organizing in the Knowledge Age," 12–18.

¹⁰¹² Daft, *Organization Theory & Design*, 34.

collecting empirical data on and mapping the existing intergovernmental relationships in each phase of emergency management.

E. FINAL THOUGHTS

Despite the growing literature within the risk mitigation and consequence management space, the amount covering organization theory and design within civil defense, emergency management, homeland security, or resilience is small. This gap may be due to the expansive set of other topics that could lead to an ineffective comprehensive emergency management organization.¹⁰¹³ While these issues may lead to ineffective emergency management organizations, this thesis considered yet another lens, the structural design of the organization and its placement in the jurisdiction's overall organization structure.

Through a literature review and plausible probe case study, the thesis has identified approaches that can be used to organize and distribute risk mitigation and consequence management functions to improve organizational effectiveness. However, the findings did not lead to specific organizational configurations that could be implemented but rather a mixture of practices and techniques that could be applied depending on the mechanistic or

¹⁰¹³ Kathleen J. Tierney, "Testimony on Needed Emergency Management Reforms," *Journal of Homeland Security and Emergency Management* 4, no. 3 (2007): 3–4, <https://doi.org/10.2202/1547-7355.1388>; McEntire, "Local Emergency Management Organizations," 177–81; Waugh and Streib, "Collaboration and Leadership for Effective Emergency Management," 137; Jensen and Kirkpatrick, "Local Emergency Management and Comprehensive Emergency Management (CEM)," 10; Robert P. Wolensky and Kenneth C. Wolensky, "Local Government's Problem with Disaster Management: A Literature Review and Structural Analysis," *Review of Policy Research* 9, no. 4 (1990): 704–8, <https://doi.org/10.1111/j.1541-1338.1990.tb01074.x>; Robert P. Wolensky and Kenneth C. Wolensky, "American Local Government and the Disaster Management Problem," *Local Government Studies* 17, no. 2 (1991): 16–18, <https://doi.org/10.1080/03003939108433570>; Weaver et al., "An Overview of a Demographic Study of United States Emergency Managers," 201; Roberts et al., "The Emergency Manager as Risk Manager," 262; Robin K. White et al., "A Practical Approach to Building Resilience in America's Communities," *American Behavioral Scientist* 59, no. 2 (2015): 211, <https://doi.org/10.1177/0002764214550296>; James Kendra, Scott G. Knowles, and Tricia Wachtendorf, eds., *Disaster Research and the Second Environmental Crisis: Assessing the Challenges Ahead* (Cham, Switzerland: Springer International Publishing, 2019), 162, <https://doi.org/10.1007/978-3-030-04691-0>; Jensen et al., "The County Emergency Manager's Role in Recovery," 238–39; Richard Sylves, *Disaster Policy and Politics: Emergency Management and Homeland Security* (Washington, DC: CQ Press, 2008), 9–20, <https://archive.org/details/disasterpolicypo0000sylv>; William L. Waugh and Kathleen J. Tierney, eds., *Emergency Management: Principles and Practice for Local Government*, 2nd ed. (Washington, DC: ICMA Press, 2007), 235–333; Drabek, *Professional Emergency Manager*, 227–54; Wenger, Dynes, and Quarantelli, *Disaster Analysis*, 13–22; and Stevenson and Hayman, *Local Government Disaster Protection*, 1–4.

organic orientation of the organization's contingency factors.¹⁰¹⁴ Based on the organization's size, technology, goals and strategy, culture, and environment, leaders are presented with optimal structural dimensions that most closely fit their contingency factors. Structural contingency theory demonstrates that a strong fit between contingency factors and structural dimensions results in greater organizational effectiveness.¹⁰¹⁵ Regardless of an organization's ability to completely restructure staff and resources using these practices, the study has also identified that information linkage mechanisms such as liaisons, task forces, integrators, and committees can be implemented to improve organizational effectiveness.¹⁰¹⁶ This study provides risk mitigation and consequence management leaders and jurisdictional chief executives with a compilation of design examples organized by emergency management phases and an analytical framework to assess their organizations for organic and mechanistic traits.

Including organization theory and evidence-based design techniques in reorganizing risk mitigation and consequence management agencies will continue to encounter pressure from the other influences of organization design. When discussing the history of federal risk mitigation and consequence management agencies, Cameron Carlson notes in his 2017 dissertation, "Politics and fickle public opinion heavily shaped these organizations' specific missions and lifespans, and by extension, the approaches practitioners applied to address natural and man-made threats."¹⁰¹⁷ Many others agree that the influence of elected officials and public reaction to disasters have led to the frequent

¹⁰¹⁴ Drabek, *Professional Emergency Manager*, 233, 253; Wenger, Dynes, and Quarantelli, *Disaster Analysis*, 74; Stevenson and Hayman, *Local Government Disaster Protection*, 1, 38, 49; and Howard, "Organization and Reorganization as Manifestation of Public Policy," 6.

¹⁰¹⁵ Walton, "The Persistence of Bureaucracy," 570; Donaldson, *The Contingency Theory of Organizations*, 1, 185; Pennings, "Structural Contingency Theory," 268; Luo, Donaldson, and Yu, "Fit of Structure to Multiple Contingencies," 41; and Alberts and Nissen, "Toward Harmonizing Command and Control with Organization and Management Theory," 25–26.

¹⁰¹⁶ Drabek, *Professional Emergency Manager*, 179.

¹⁰¹⁷ Carlson, "Homeland Security and Emergency Management Education," 12.

reimagining of these governmental functions at the local, state, and national levels.¹⁰¹⁸ In 1990, Kreps had incredible foresight in predicting the reorganization of FEMA's functions in the 2000s, noting:

But in what appears to be a historical cycle of consolidation and separation of the federal emergency management system, it would not be surprising to, in the near future, see civil defense and other wartime functions continue to be housed in the same agency and engaged primarily in federal preparedness activities; yet become separated from peacetime mitigation, preparedness, and response programs.¹⁰¹⁹

The federal government often drove ecosystem-wide changes by creating new doctrine, guidance, and entities that state and local jurisdictions were forced to coordinate with.¹⁰²⁰ As a result, states and local governments would mimic many of the changes being conducted at the federal level. Since the end of James Lee Witt's tenure as the director of FEMA, the comprehensive emergency management construct has faced many challenges, and similarly, so have the organizational structures derived from it.

Even without the threat of institutional isomorphism and politics on the organization of critical risk mitigation and consequence management government functions, it is not clear that the comprehensive emergency management construct is the appropriate framework to design the associated agencies housing them.¹⁰²¹ There appears to be a strong efficiency and effectiveness case for organizations adopting the "all-hazards"

¹⁰¹⁸ Graff, *Raven Rock*, 77; Homeland Security National Preparedness Task Force, *Civil Defense and Homeland Security*, 29; Holguin, "Local-Level Homeland Security and Emergency Management," 25; Patrick Roberts, Robert Ward, and Gary Wamsley, "The Evolving Federal Role in Emergency Management: Policies and Processes," in *Emergency Management: The American Experience 1900–2010, Second Edition*, ed. Claire B. Rubin, 2nd ed. (Boca Raton, FL: CRC Press, 2012), 247–73, <https://doi.org/10.1201/b11887>; Aaron Schroeder, Gary Wamsley, and Robert Ward, "The Evolution of Emergency Management in America: From a Painful Past to a Promising but Uncertain Future," in *Handbook of Crisis and Emergency Management*, ed. Ali Farazmand (New York: Marcel Dekker, 2001), 381; and Norton, *Emergency Preparedness and Disaster Assistance*, 1–2.

¹⁰¹⁹ Gary Kreps, "The Federal Emergency Management System in the United States: Past and Present," *International Journal of Mass Emergencies and Disasters* 8, no. 3 (November 1990): 288, <https://doi.org/10.1177/028072709000800304>.

¹⁰²⁰ Bea, *Transfer of FEMA to the Department of Homeland Security*, 13; and Durbin, "Organizational Structuring for Homeland Security," 19, 42, 97.

¹⁰²¹ National Governors' Association, *State Comprehensive Emergency Management*, 108; and Kushma, "Preparing for Disaster," 104.

and “dual use” constructs to consolidate similar functions performed during multiple hazards.¹⁰²² The argument for integrating activities across the four emergency management phases is less clear.¹⁰²³ When proposing questions for the 109th Congress to ask during the creation of the new U.S. Department of Homeland Security (DHS) Preparedness Directorate in 2005, Keith Bea asked:

How does the scope of all federal homeland security policies in 2005 relate to the decades-old policy of emergency management that was formulated in the 1970s? Have basic concepts, such as the division of responsibilities among federal and non-federal units of government, concepts of risk and threat, and constraints on federal authority and fiscal duty, shifted?¹⁰²⁴

The 1978 NGA study introducing comprehensive emergency management to states and the associated federal government reports, plans, and executive orders creating FEMA have minimal references to evidence-based organization design techniques or practices that support the integration of phases within the construct.¹⁰²⁵

Furthermore, these foundational studies and reports do not provide substantial evidence of a need for integration between the phases. In their 1993 report *Coping with Catastrophe: Building an Emergency Management System to Meet People’s Needs in Natural and Manmade Disasters*, the National Academy of Public Administration declared that the integration had only “borne meager fruit.”¹⁰²⁶ They went further to say, “The organizational design -- which would bring together marginally related programs in order to achieve a synergistic outcome that would enhance all the functions of emergency

¹⁰²² Sylves, “Ferment at FEMA,” 303; May, “FEMA’s Role in Emergency Management,” 45; McLoughlin, “A Framework for Integrated Emergency Management,” 166, 171; Howard, “Organization and Reorganization as Manifestation of Public Policy,” 136–37; Samantha Penta et al., “A Disaster by Any Other Name?: COVID-19 and Support for an All-Hazards Approach,” *Risk, Hazards & Crisis in Public Policy*, April 2021, 1–26, <https://doi.org/10.1002/rhc3.12213>; and Kreps, “The Federal Emergency Management System in the United States,” 282.

¹⁰²³ Howard, “Organization and Reorganization as Manifestation of Public Policy,” 137.

¹⁰²⁴ Bea, *Organization and Mission of the Emergency Preparedness and Response Directorate*, 43.

¹⁰²⁵ National Governors’ Association, *State Comprehensive Emergency Management*, 213–14, 216–18; and White House Office of Staff Secretary, *Emergency Preparedness Reorganization Briefing Book*, 34–50.

¹⁰²⁶ National Academy of Public Administration, *Coping with Catastrophe*, 105.

management -- was an imaginative one.”¹⁰²⁷ As aptly described by Jensen and Kirkpatrick, comprehensive emergency management is simply a “self-professed identity” derived from that initial 1978 NGA study.¹⁰²⁸

Unlike the copious support for the comprehensive emergency management model, it faced little to no criticism in the peer-reviewed literature from the last 40 years. During the policy construct’s application to FEMA’s design, it encountered opposition from some federal agency leaders, professional associations, and members of Congress.¹⁰²⁹ For a concept derived at the request of state governors and not academia or practitioners, it is surprising to see such consistent and unwavering support, even with decades of haphazard implementation, frequent reorganizations, and performance issues.¹⁰³⁰ If anything, the only challenges to the construct were the many references to how difficult implementation would be or has been.¹⁰³¹ For example, May described in 1985, “given the history of a trial-and-error approach to emergency management at the federal level, any change of this magnitude must be considered an experiment.”¹⁰³² In 1986, Conner posited, “The comprehensive emergency management program still has a long way to go.”¹⁰³³ The

¹⁰²⁷ National Academy of Public Administration, 105.

¹⁰²⁸ Jensen and Kirkpatrick, “Local Emergency Management and Comprehensive Emergency Management (CEM),” 2; and National Governors’ Association, *Comprehensive Emergency Management*, 9, 11–14.

¹⁰²⁹ National Governors’ Association, *State Comprehensive Emergency Management*, xi; White House Office of Staff Secretary, *Responses to Emergency Preparedness Memorandum Dated May 8, 1978 (Supplemented)* (Washington, DC: White House, 1978), 11, 14–16, 19–30, 32–35, 37–39, 44–46, 49–51, 53, https://www.jimmycarterlibrary.gov/sites/default/files/pdf_documents/digital_library/sso/148878/78/SSO_148878_078_06.pdf; Schroeder, Wamsley, and Ward, “The Evolution of Emergency Management in America,” 372; Howard, “Organization and Reorganization as Manifestation of Public Policy,” 135–36; Norton, *Emergency Preparedness and Disaster Assistance*, 109–12; and Greenstone, *Emergency Management*, 6–10.

¹⁰³⁰ Bea, *Organization and Mission of the Emergency Preparedness and Response Directorate*, 17, 35–47, 58–64; National Academy of Public Administration, *Coping with Catastrophe*, vii–x, 16–19, 23, 41–45, 104–5; Chris Currie, *FEMA: Opportunities to Strengthen Management and Address Increasing Challenges*, GAO-23-106840 (Washington, DC: Government Accountability Office, 2023), 10–13, <https://www.gao.gov/assets/gao-23-106840.pdf>; and Howard, “Organization and Reorganization as Manifestation of Public Policy,” 135–36, 176–77.

¹⁰³¹ Kreps, “The Federal Emergency Management System in the United States,” 291.

¹⁰³² May, “FEMA’s Role in Emergency Management,” 40.

¹⁰³³ Patrick D. Conner, “An Assessment of FEMA Today: An Individual Essay” (student essay, Army War College, 1986), 17, <https://apps.dtic.mil/sti/pdfs/ADA166468.pdf>.

National Academy of Public Administration's 1993 report provides a scathing review of FEMA's implementation of comprehensive emergency management, noting, "It has not become the 'one-stop' federal agency for emergency management; it is one address with the same number (or more stops) as existed in 1978."¹⁰³⁴ Later in 2002, Kushma noted that beyond "the conceptual formulation of a 'comprehensive' emergency management program," FEMA struggles to demonstrate the policy linkages and value of investment in comprehensive emergency management to state and local governments.¹⁰³⁵ Decades later, in 2022, Jensen and Kirkpatrick note, "Facilitating implementation of CEM was always going to be a challenge in theory, much less practice."¹⁰³⁶

Canton notes that efforts to operationalize the comprehensive emergency management model are a conceptual error and that the NGA never intended for jurisdictions to develop plans aligned to these phases.¹⁰³⁷ This perspective is not a criticism of comprehensive emergency management but a warning for its use beyond a conceptual model. Yet, the construct has been used by all levels of government nationwide to group staff and resources into consolidated agencies and further organize staff into subunits based on the four emergency management phases.

In general, emergency management scholars discuss the many changes to emergency management since the James Lee Witt era in a negative light.¹⁰³⁸ The many reorganizations and creation of new agencies based on new constructs contributed to the optimal conditions that foster gaps and overlaps across the government risk mitigation and consequence management ecosystem. Despite the changes made to strengthen FEMA after

¹⁰³⁴ National Academy of Public Administration, *Coping with Catastrophe*, 104.

¹⁰³⁵ Kushma, "Preparing for Disaster," 104.

¹⁰³⁶ Jensen and Kirkpatrick, "Local Emergency Management and Comprehensive Emergency Management (CEM)," 3.

¹⁰³⁷ Canton, *Emergency Management*, 210.

¹⁰³⁸ Abdul-akeem Sadiq, Kevin Tharp, and John D. Graham, "FEMA Versus Local Governments: Influence and Reliance in Disaster Preparedness," *Natural Hazards* 82, no. 1 (May 2016): 125, <https://doi.org/10.1007/s11069-016-2183-6>; Comfort, Waugh, and Cigler, "Emergency Management Research and Practice in Public Administration," 541; Naim Kapucu et al., "U.S. Presidents and Their Roles in Emergency Management and Disaster Policy 1950–2009," *Risk, Hazards & Crisis in Public Policy* 2, no. 3 (2011): 18, <https://doi.org/10.2202/1944-4079.1065>; and Office of Inspector General, *FEMA*, 18.

the Post-Katrina Emergency Management Reform Act (PKEMRA), Gall and Cutter noted in 2012 that many of the long-standing issues in emergency management were not resolved.¹⁰³⁹ But rather than question the necessity of combining functions that appear to have never been seamlessly integrated since the creation of the comprehensive emergency management concept in 1978 and have naturally separated in jurisdictions at all levels of government, academics frequently focus their recommendations around the lack of professionalization in emergency management or the lack of collaborative networks to bridge the gaps between formal organization structures.¹⁰⁴⁰

If these scholars' recommendations were to see widespread adoption, it is possible that emergency management organizations would significantly improve in effectiveness. Professionalization would likely lead to qualified executives and staff with the breadth and depth of experience and education to oversee such disparate functions.¹⁰⁴¹ This shift would be significant in local cases where staff will serve in generalist roles rather than in state and federal risk mitigation and consequence management agencies with highly specialized staff roles.¹⁰⁴² Their call to strengthen collaborative networks would assist in interdepartmental and vertical coordination with other levels of government.¹⁰⁴³

¹⁰³⁹ Carlson, "Homeland Security and Emergency Management Education," 41; and Melanie Gall and Susan L. Cutter, "2005 Events and Outcomes: Hurricane Katrina and Beyond," in *Emergency Management: The American Experience 1900–2010, Second Edition*, ed. Claire B. Rubin, 2nd ed. (Boca Raton, FL: CRC Press, 2012), 209, <https://doi.org/10.1201/b11887>.

¹⁰⁴⁰ National Governors' Association, *State Comprehensive Emergency Management*, 52; Kushma, "Preparing for Disaster," 104; National Academy of Public Administration, *Coping with Catastrophe*, 43–45, 87; Sylves, "Ferment at FEMA," 303; Jensen and Kirkpatrick, "Local Emergency Management and Comprehensive Emergency Management (CEM)," 10; Drabek, *Professional Emergency Manager*, 251–54; Robinson et al., "The Core and Periphery of Emergency Management Networks," 346; Kapucu and Garayev, "Structure and Network Performance," 931–32; Waugh, "The Fiscal Risk of All-Hazards Emergency Management or the Political Hazards in Rational Policy," 627–30; and Howard, "Organization and Reorganization as Manifestation of Public Policy," 190, 199, 283.

¹⁰⁴¹ National Governors' Association, *State Comprehensive Emergency Management*, xv; Jensen and Kirkpatrick, "Local Emergency Management and Comprehensive Emergency Management (CEM)," 10; Drabek, *Professional Emergency Manager*, 251–54; and Waugh, "The Fiscal Risk of All-Hazards Emergency Management or the Political Hazards in Rational Policy," 627–30.

¹⁰⁴² May, "FEMA's Role in Emergency Management," 46; and Edwards and Goodrich, "Organizing for Emergency Management," 44.

¹⁰⁴³ Robinson et al., "The Core and Periphery of Emergency Management Networks," 346; Kapucu and Garayev, "Structure and Network Performance," 931–32; and Hu, Sadiq, and Kapucu, "Multiplexity in Conceptualizing Network Effectiveness," 3.

Practices and techniques from organization theory and design may be more appropriate measures to implement, especially when looking at the poor track record of integrating activities across the four phases of emergency management.¹⁰⁴⁴ The poor preparation for, response to, and recovery from COVID-19 may be an opportune time for policymakers at all government levels to consider reforms like those conducted in 2006 with PKEMRA.¹⁰⁴⁵ This time, evidence-based principles of organization theory and design should be considered in any reorganization.

¹⁰⁴⁴ National Research Council, *Disaster Resilience*, 29; Bea, *Organization and Mission of the Emergency Preparedness and Response Directorate*, 17, 35–47, 61–64; May, “FEMA’s Role in Emergency Management,” 40; Kushma, “Preparing for Disaster,” 104; National Academy of Public Administration, *Coping with Catastrophe*, 41–45, 87, 104–5; Conner, “An Assessment of FEMA Today: An Individual Essay,” 17; and Jensen and Kirkpatrick, “Local Emergency Management and Comprehensive Emergency Management (CEM),” 3.

¹⁰⁴⁵ Kenneth Kitts, *Presidential Commissions & National Security: The Politics of Damage Control* (Boulder, CO: Lynne Rienner Publishers, 2006), 1–13, <http://archive.org/details/presidentialcomm0000kitt>; and Post-Katrina Emergency Management Reform Act of 2006, Pub. L. No. 109–295, § 601, 120 Stat. 1394 (2006), <https://www.congress.gov/109/plaws/publ295/PLAW-109publ295.pdf>.

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