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THESIS

**STATEWIDE ACCESS PROGRAMS:
A KEY COMPONENT TO ELIMINATING THE
POST-DISASTER ACCESS CHALLENGE**

by

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September 2020

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**STATEWIDE ACCESS PROGRAMS: A KEY COMPONENT TO
ELIMINATING THE POST-DISASTER ACCESS CHALLENGE**

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ABSTRACT

Although the United States has a well-defined incident management doctrine, it fails to fully integrate private sector response capabilities into national and local incident management efforts. The lessons learned from the 2017 Hurricane and Wildfire Season underscored the need to improve coordination with the private sector to better assist communities in responding to and recovering from emergencies. This thesis examines how the implementation of statewide access programs can better integrate private sector response capabilities into state and local disaster management efforts. Furthermore, it explores the purpose of an access program, the importance of access management during emergencies, and common post-disaster access-related challenges. Comparative analysis was used to examine U.S. incident management policies and practices regarding the concept of access management and the benefits associated with using access programs. Although use of an access program offers many benefits, key findings attribute the lack of widespread adoption to multiple factors, ranging from inconsistent policy guidance to inadequate prioritization of private sector access needs during emergencies. Recommendations include enacting state statutes, expanding the business emergency operations center network, developing interoperable access programs, and using federal grant programs to help government at all levels to more effectively integrate the private sector into incident management efforts.

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LIST OF ACRONYMS AND ABBREVIATIONS

AL	access level
AEP	access enrollment provider
BRIC	Building Resilient Infrastructure and Communities
BEOC	Business Emergency Operations Center
BIISG	Business Infrastructure Industry Solutions Group
COI	community of interest
COVID-19	coronavirus disease 2019
CERRA	Crisis Event Response and Recovery Access
CSC	Critical Infrastructure Cross-Sector Council
CISA	Cybersecurity and Infrastructure Security Agency
DHS	Department of Homeland Security
EMS	Emergency Medical Services
EOC	Emergency Operations Center
ESF	Emergency Support Function
ECIW	Essential Critical Infrastructure Workforce
FEMA	Federal Emergency Management Agency
LOA	letter of access
NBEOC	National Business Emergency Operations Center
NDRF	National Disaster Recovery Framework
NEMA	National Emergency Management Association
NIMS	National Incident Management System
NIEM	National Information Exchange Model
NIPP	National Infrastructure Protection Plan
NPPD	National Protection and Programs Directorate
NRF	National Response Framework
PPP	public-private partnership
SLTT	state, local, tribal, and territorial

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EXECUTIVE SUMMARY

This thesis explores the topic of access management and its relationship to U.S. incident management policies and practices. Specifically, it examines how the implementation of statewide access programs might better integrate private sector response capabilities into state and local disaster management efforts. The United States has a well-defined incident management doctrine that mentions access management, but such references appear infrequently and are not adequately addressed. Before, during, and after an emergency, private sector assets may need to enter or transit through designated restricted areas or emergency zones in support of disaster preparation, emergency response, or restoration efforts. A state or local jurisdiction's ability to control and manage access of key response and recovery resources can be a critical success factor in enabling community recovery—particularly during emergencies that affect multiple jurisdictions or involve significant population evacuations.¹ However, managing access to more fully integrate private sector response and recovery capabilities into both national and local incident management operations continues to challenge federal, state, and local government agencies.

Neither the idea nor the need for effective access management is new. For many within the emergency management community and the private sector, the idea can be traced back to a lack of public-private coordination following Hurricane Katrina.² The lessons learned from subsequent events and other large-scale emergencies have accentuated the need for government at all levels to partner more closely with the private sector—particularly concerning the restoration of critical infrastructure and stabilization of community lifelines following disasters.³ In terms of U.S. incident management, the

¹ Department of Homeland Security (DHS), *Crisis Event Response and Recovery Access (CERRA) Framework* (Washington, DC: Government Printing Office, 2018), ii, <https://www.dhs.gov/publication/crisis-event-response-and-recovery-access>.

² Jim Byrne, personal communication, December 6, 2016.

³ Federal Emergency Management Agency (FEMA), *2017 Hurricane Season FEMA After-Action Report* (Washington, DC: Government Printing Office, 2018), iii, <https://www.fema.gov/media-library-data/1531743865541-d16794d43d3082544435e1471da07880/2017FEMAHurricaneAAR.pdf>.

application of public-private partnerships has historically defined the role of the private sector during national emergency response efforts. As a result, the role of the private sector has continued to evolve in recognition of the critical role its resources and capabilities can play in support of incident management operations. Consequently, U.S. incident management guidance—like the *National Response Framework*—has been updated to facilitate “closer partnerships with the private sector” to support communities affected by disasters.⁴ However, a lack of access management policy and preparedness planning has often hampered disaster management efforts.

This discussion primarily focuses on private sector critical infrastructure owners and operators’ access needs because of their essential role in disaster response and recovery efforts. This study outlines the problems associated with the concept of access management by examining the historical context of its importance during past emergencies and includes a literature review of the academic debates concerning the value of public-private partnerships in assisting U.S. disaster management efforts. This concept seeks to facilitate increased public-private coordination before, during, and after emergencies through the implementation of an access program. However, the literature review found that the majority of states do not incorporate access management as part of their overarching emergency preparedness planning.⁵ The topic of access management is further defined by exploring the purpose of an access program, the importance of access management during large-scale emergencies, and who requires and grants access. This examination highlighted the importance of public-private partnerships as an integral component of U.S. incident management. It also revealed the potential for access programs to function as an essential component to enhance government’s ability to successfully integrate private-sector response capabilities into national and local disaster response and recovery operations.

Although some government officials and segments of the emergency management community understand the concept of access management, many may not fully understand

⁴ FEMA, *2017 Hurricane Season*, iii.

⁵ Healthcare Ready, *Access Denied—Delivery of Critical Healthcare Products and Personnel to Disaster Sites* (Washington, DC: Healthcare Ready, 2016), 10–19, https://www.healthcareready.org/system/cms/files/1466/files/original/HCR_Access_Denied_Report.pdf.

the vital role private sector organizations, as critical infrastructure owners and operators, can fulfill during disaster management operations or what historical post-disaster access challenges they face. This study examines some common post-disaster access challenges experienced by the private sector—for example, a lack of interoperable access plans and use of a common approach for access management. Private sector access needs are critical when supporting the restoration of critical infrastructure, reestablishment of essential services, and other community recovery activities. This study analyzes methods used by states to facilitate access management. Additionally, comparative analysis is used to examine the federal policies and structural frameworks that encompass the fundamental tenets of U.S. incident management doctrine to analyze how they directly or indirectly support the concept of access management. The analysis first examines principal documents, such as the *National Infrastructure Protection Plan*, *National Response Framework* (NRF), and the *National Disaster Recovery Framework* to uncover specific reference or guidance related to access management. Next, the access management-related guidance contained in the *National Incident Management System Guideline for Credentialing Personnel* is compared to the guidance in the *Crisis Event Response and Recovery Access (CERRA) Framework*. Then, it reviews recent changes to the NRF that directly align with the concept of access management. Lastly, it examines the development of the *Guidance on the Essential Critical Infrastructure Workforce*, which was reviewed for its potential impacts on access management. The overall analysis finds a recognized need to implement a common access management approach and a gap in U.S. incident management doctrine.

Some government officials and critical infrastructure coordinating councils support the implementation of statewide access programs as a key component for enabling the effective integration of private-sector response capabilities into state and local disaster response and recovery operations.⁶ This study explores this idea by examining the use and benefits associated with access programs as well as some of the challenges with implementing statewide programs. For example, access programs can improve

⁶ DHS, *Crisis Event Response and Recovery Access*, Executive Summary.

coordination with a broad set of private sector stakeholders by enabling coordination of response and recovery assets through a phased re-entry process.⁷ However, implementing statewide access programs can be challenging due to the level of autonomy granted to local governments—where the use of Home Rule is applied—or where no formal public-private partnership program exists.⁸ Additionally, it analyzes the evolving role of the private sector during emergencies and assesses how access programs can assist in reducing current gaps in U.S. incident management doctrine by adding to the value proposition specified in the *National Infrastructure Protection Plan*, namely, the preservation of public safety and national security through the protection and strengthening of critical infrastructure.⁹ This study concludes with a discussion of its key findings and a list of recommendations that can build off one another to enhance each state’s ability to integrate private sector capabilities into disaster management efforts, improve community resilience, and effectively execute the concept of community lifeline stabilization.

Effective use of access management can assist communities in responding to and recovering from emergencies. The research suggests access programs are a practical and efficient method of integrating private sector capabilities into state and local disaster management operations. However, the research also suggests that access programs in and of themselves are not a complete answer to the overall challenge of access management. This study finds that greater implementation of statewide access programs coupled with effective use of the NRF, the CERRA Framework, and the Essential Critical Infrastructure Workforce guidance may provide the necessary components to mitigate the majority of existing access management challenges. Another key finding reveals that access management is both a response and recovery issue, yet no standard or interoperable access

⁷ DHS, *Crisis Event Response and Recovery Access*, 5–7.

⁸ Healthcare Ready, *Access Denied*, 12.

⁹ Department of Homeland Security (DHS), *National Infrastructure Protection Plan (NIPP) 2013: Partnering for Critical Infrastructure Security and Resilience* (Washington, DC: Government Printing Office, 2013), 1, <https://www.cisa.gov/publication/nipp-2013-partnering-critical-infrastructure-security-and-resilience>; Department of Homeland Security (DHS), *National Infrastructure Protection Plan: Partnering to Enhance Protection and Resiliency* (Washington, DC: Government Printing Office, 2009), 10, https://www.dhs.gov/xlibrary/assets/NIPP_Plan.pdf#:~:text=The%202009%20NIPP%20captures%20the%20evolution%20and%20maturation,the%20government%20and%20the%20private%20sector%20with%20the.

management process is being used consistently throughout the United States.¹⁰ This lack of a common process approach has often created barriers to effective integration of private sector capabilities into disaster response and recovery operations. To address the access management challenge, this thesis recommends states enact statutes to empower their emergency management agencies, increase the number of state-level Business Emergency Operations Centers, and develop interoperable access programs. An additional recommendation proposes incentivizing states to develop their access management and public-private partnership capabilities through federal grant programs. In this way, states could be encouraged to incorporate access management as part of their all-hazards preparedness planning, improve their public-private partnership capabilities, and develop innovative methods to support communities before, during, and after disasters.

¹⁰ Healthcare Ready, *Access Denied*, 10–12.

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I. INTRODUCTION

The 2017 Hurricane and Wildfire Season produced some of the costliest natural disasters, both in terms of physical destruction and loss of life, ever recorded in United States history.¹ Collectively, between Hurricanes Harvey, Irma, and Maria, the United States experienced an estimated \$273 billion dollars in widespread damage and losses, to include over 3,100 fatalities.² The wildfires that occurred in the western United States claimed an additional 44 lives and caused an estimated \$18.5 billion dollars in damage.³ The incredible combination of events and whole community response required to mitigate the devastating effects of large-scale disasters—to include those experienced during the 2017 hurricane and wildfire season—proved that government entities alone cannot help communities fully recover without greater assistance from and coordination with the private sector. A key recommendation from the *2017 Hurricane Season FEMA After-Action Report* highlighted the need for the federal government to facilitate increased “coordination across the critical infrastructure sectors,” which recognized that “closer partnerships with the private sector are crucial in providing commodities and support” to communities affected by disaster.⁴ The private sector’s ownership and operation of the majority of the United States’ critical infrastructure make such coordination necessary.⁵ Every community relies on critical infrastructure to support daily life, provide essential public services, and sometimes sustain their economic viability. For example, critical

¹ Federal Emergency Management Agency (FEMA), *2017 Hurricane Season FEMA After-Action Report* (Washington, DC: Government Printing Office, 2018), 1, <https://www.fema.gov/media-library-data/1531743865541-d16794d43d3082544435e1471da07880/2017FEMAHurricaneAAR.pdf>.

² “Billion-Dollar Weather and Climate Disasters: Table of Events,” National Oceanic and Atmospheric Association, National Centers for Environmental Information (NOAA, NCEI), accessed June 28, 2019, <https://www.ncdc.noaa.gov/billions/events/US/2017>; Gary O’Donoghue, “Puerto Rico Increases Hurricane Maria Death Toll to 2,975,” BBC News, August 29, 2018, <https://www.bbc.com/news/world-us-canada-4533800>.

³ NOAA, NCEI, “Billion-Dollar Weather.”

⁴ FEMA, *2017 Hurricane Season*, iii.

⁵ Government Accountability Office (GAO), *The Department of Homeland Security’s (DHS) Critical Infrastructure Protection Cost-Benefit Report*, GAO-09-654R (Washington, DC: Government Accountability Office, 2009), 1.

infrastructure systems provide the electricity, food and water, and communication and transportation networks that enable American society and local communities to thrive.

Integration of the private sector into national and local disaster response efforts is necessary “to ensure the coordination of public or private sector response and recovery assets; restoration of critical infrastructure and essential public services; and the flow of emergency supplies and life enabling commodities to the affected area.”⁶ For example, in 2018 during Hurricane Michael emergency response efforts in Florida, a lack of coordination by local authorities with responding private sector utility companies resulted in the premature lifting of evacuation orders before some essential services had been sufficiently restored (e.g., electricity and communication networks, 9–1-1 call services, etc.), further complicating a challenging situation.⁷ Varying levels of government are increasingly recognizing the necessity for integration to better assist communities during large scale emergencies or natural disasters. Thus, some states have established statewide access programs to coordinate directly with private sector partners. For example, North Carolina’s *Vendor Disaster Re-entry Program* is intended “to mitigate the impacts [of disasters] on communities by ensuring the availability of emergency supplies and utility services.”⁸ Private sector companies registered in the program as service providers fall into one of three categories: “lifesaving services, health and safety, or economic well-being.”⁹ These types of programs demonstrate the value of coordination with the private sector during disaster response.

However, although the United States has a well-defined incident management doctrine, the idea of integrating private sector response capabilities into national and local incident management efforts has not been fully developed. Despite the National

⁶ Department of Homeland Security (DHS), *Crisis Event Response and Recovery Access (CERRA) Framework* (Washington, DC: Government Printing Office, 2018), 1, <https://www.dhs.gov/publication/crisis-event-response-and-recovery-access>.

⁷ Federal representative from the National Coordinating Center for Communications, email message to author, July 10, 2019.

⁸ Persia Payne-Hurley, email message to author, April 30, 2019.

⁹ Healthcare Ready, *Access Denied—Delivery of Critical Healthcare Products and Personnel to Disaster Sites* (Washington, DC: Healthcare Ready, 2016), 39, https://www.healthcareready.org/system/cms/files/1466/files/original/HCR_Access_Denied_Report.pdf.

Emergency Management Association citing “an increasing demand for private sector coordination and communications with the public sector [during emergencies],” a nationwide study by Healthcare Ready found that most states and local jurisdictions either did not have an existing plan for integration of private sector response assets during emergencies, or conducted this process on an ad hoc basis.¹⁰ The historical tendency at various levels of government to emphasize the response portion of incident management (e.g., conducting immediate response, search and rescue, and other life-saving operations) over recovery planning contributes to this lack of integration. As such, successfully integrating private sector response capabilities—while a necessity—has presented a continual challenge for federal, state, and local government agencies.

Even though the persistent challenge of effectively integrating private sector entities into disaster response efforts has plagued multiple national emergencies since Hurricane Katrina, some government officials and segments of the emergency management community fail to grasp the problem’s gravity.¹¹ The emergency management community agrees that properly coordinating response and recovery assets can be critical to assisting communities in recovering from emergencies.¹² Emergencies that require significant population evacuations or affect multiple jurisdictions require this effort to coordinate emergency response operations and prepare for restoration activities.¹³ Government officials may not fully understand the role private sector organizations and critical infrastructure owners and operators may fulfill during disaster response operations; the historical post-disaster access challenges they face; or the methods that have been employed or could be used for integrating private sector entities into disaster response efforts.

¹⁰ National Emergency Management Association (NEMA), *Building Operational Public Private Partnerships—A Community Reference Guide for Emergency Management Agencies and Private Sector Partners* (Washington, DC: NEMA, 2017), 5, <https://www.nemaweb.org/index.php/112-2017-em-advocate/980-building-operational-public-private-partnerships>; Healthcare Ready, Access Denied.

¹¹ Louisiana State Police (LSP), *State of Louisiana Joint Standard Operating Procedure Statewide Credentialing/Access Control Program* (Baton Rouge, LA: Louisiana State Police, 2011), 4. http://www.lsp.org/pdf/nextgen_lscap.pdf.

¹² DHS, *Crisis Event Response and Recovery Access*, Executive Summary.

¹³ DHS, 1.

In this historical context, the U.S. Federal Emergency Management Agency (FEMA), in an effort to implement the 2017 hurricane season after-action report recommendation, updated the National Response Framework (NRF). The purpose of this revision was to establish a new Emergency Support Function (ESF)—the Cross-Sector Business and Infrastructure ESF—and introduce the concept of “community lifelines” in order to expand existing incident management principles to better integrate public and private sector capabilities during disaster response efforts.¹⁴ However, these changes are new and their value is not yet proven. Several private sector industries and critical infrastructure coordinating councils support the implementation of statewide access programs as a key component for enabling the effective integration of private sector response capabilities into state and local disaster response and recovery operations.¹⁵ A concept that has some proven success. For example, Florida routinely activates its Statewide Private Sector Re-Entry Program during severe weather emergencies (i.e., hurricanes) to coordinate with private sector entities transporting or providing essential commodities and services in support of the overall disaster response.¹⁶ To what extent these two methods may complement one another is yet unknown.

An examination of these two potentially complementary ideas, along with their possible crossovers, may uncover a suitable solution to the overall challenge of effective private sector integration that continues to elude federal, state and local government agencies. This thesis seeks to conduct this assessment.

A. RESEARCH QUESTION

How can the implementation of statewide access programs assist in integrating private sector response capabilities into state and local disaster response efforts?

¹⁴ FEMA, *National Response Framework* (Washington, DC: Government Printing Office, 2019), iii-1, https://www.fema.gov/sites/default/files/2020-04/NRF_FINALApproved_2011028.pdf.

¹⁵ DHS, *Crisis Event Response and Recovery Access*, Executive Summary.

¹⁶ “Statewide Private Sector Re-Entry Program,” Florida Division of Emergency Management (FDEM), accessed July 1, 2019, <https://www.floridadisaster.org/business/statewide-private-sector-re-entry-program>.

B. LITERATURE REVIEW

The United States has developed a “whole community” approach to disaster response.¹⁷ This approach recognizes that government entities alone do not possess all of the required capabilities and resources needed to assist communities to respond to and recover from emergencies. Various government policy directives and academic researchers emphasize the need to partner with the private sector to maintain the security and resilience of the nation. The purpose of this literature review is to explore the academic debates concerning the value of public-private partnerships in assisting U.S. disaster management efforts and perceived obstacles to effective collaboration.

The literature suggests the need and the value of including the private sector into both national and local disaster response efforts. The private sector owns and operates the majority of the U.S. critical infrastructure: approximately 85%.¹⁸ Every community relies on critical infrastructure to support daily life, maintain public health and safety, and sustain economic viability. Because of these interdependencies, some academics contend that the nation’s economic well-being is intertwined with the private sector as well as the security and resilience of our national critical infrastructure.¹⁹ This need to incorporate the private sector into disaster response efforts has spurred debate concerning the value of public-private partnerships.

Consequently, some scholars and emergency management practitioners concur that the private sector is an integral component of U.S. disaster management efforts.²⁰ This group contends that effective integration of private sector resources and capabilities can have a positive effect on disaster response and recovery operations.²¹ In this context,

¹⁷ Department of Homeland Security (DHS), *National Infrastructure Protection Plan (NIPP) 2013: Partnering for Critical Infrastructure Security and Resilience* (Washington, DC: Government Printing Office, 2013), 9, <https://www.cisa.gov/publication/nipp-2013-partnering-critical-infrastructure-security-and-resilience>.

¹⁸ GAO, *The Department of Homeland Security’s (DHS) Critical Infrastructure*, 1.

¹⁹ DHS, *National Infrastructure Protection Plan (NIPP) 2013*, 1.

²⁰ Nathan E. Busch and Austen D. Givens, “Achieving Resilience in Disaster Management: The Role of Public-Private Partnerships,” *Journal of Strategic Security* 6, no. 2 (Summer 2013): 3, <http://dx.doi.org/10.5038/1944-0472.6.2.1>.

²¹ Busch and Givens, 5.

academics such as Nathan Busch and Austen Givens have expounded on the importance of public-private partnerships as a useful means for government entities and private sector organizations to collaborate with one another in support of disaster management.²² Other scholars, such as Colin Gabler, Robert Richey, and Geoffrey Stewart seemingly agree, pointing out the need for collaborative public-private relationships during disasters.²³ Similarly, Elsa Lee points out that public-private partnerships are critical to managing the effects from disasters.²⁴ Collectively, this group of scholars extol the value of public-private partnerships in support of disaster response.

Within the emergency management profession, practitioners and professional associations echo the academic community's sentiments regarding the importance of public-private partnerships. For example, the National Emergency Management Association promotes the forging of "operationally oriented [public-private] partnerships" in support of emergency management efforts to assist communities in preparing for, responding to, and recovering from disasters.²⁵ Similarly, a discourse exists among other emergency services professionals concerning the need for government to build strong partnerships with the private sector to enhance local communities' disaster response capabilities. In examining this topic, Captain Bonnie Regan of the Arlington County (Virginia) Police Department asserts that local governments must foster effective public-private partnerships to ensure the health and well-being of their communities, particularly in regard to developing emergency management plans.²⁶ In adding to this discourse, Robert McKenna, a captain in the U.S. Coast Guard, reiterates the value of public-private collaboration in support of disaster response efforts by exploring how to better integrate

²² Busch and Givens, 2.

²³ Colin Gabler, Robert Richey, and Geoffrey Stewart, "Disaster Resilience through Public-Private Short-Term Collaboration," *Journal of Business Logistics* 38, no. 2 (June 2017): 130-144, <https://doi.org/10.1111/jbl.12152>.

²⁴ Elsa Lee, *Homeland Security and Private Sector Business*, 2nd ed. (Chicago: CRC Press, 2014), 22.

²⁵ NEMA, *Building Operational Public Private Partnerships*, 3.

²⁶ Bonnie L. Regan, "Enhancing Emergency Preparedness and Response: Partnering with the Private Business Sector" (master's thesis, Naval Postgraduate School, 2009), 71, <https://www.hsdl.org/?view&did=3082>.

the private sector into the national disaster response system.²⁷ To sum up, both the academic and emergency management communities describe the importance of partnering with the private sector as a necessity for effective disaster management.

Key to this collective group's assertion is the study of the private sector's evolving role regarding disaster response efforts. Many scholars have attributed this evolution in roles and responsibilities to changes in attitude at all levels of government concerning the protection of critical infrastructure. Busch and Givens note that at the national level prior to 1997, measures regarding the protection of critical infrastructure primarily focused on thwarting negative commercial impacts to the U.S. economy; subsequently, the attacks on September 11, 2001, expanded this focus to include national security implications.²⁸ They further highlight that these attitude changes resulted in both a proliferation of public-private partnerships and a significant shift concerning critical infrastructure protection. Conversely, Lewis and Darken, among others, question the efficacy of the national strategy for critical infrastructure protection and the structural framework to govern federal public-private partnerships in support of disaster management. These scholars cite varying policy gaps, a lack of sustainability, and the potential for diverging self-interests as obstacles to effective collaboration and policy implementation.²⁹ Lewis and Darken further question the effectiveness of the national strategy for critical infrastructure protection as relying on perceived governmental false assumptions, misconceptions concerning the private sector, and policy gaps in the overall strategy.³⁰ Similarly, Ami Abou-bakr viewed the initial public-private partnership framework outlined in the National Infrastructure Protection Plan as structurally flawed because of the lack of centralized authority to sustain cross-

²⁷ Robert E. McKenna, "The Role of the Private Sector in the National Response System" (master's thesis, Naval Postgraduate School, 2013), 1–11, <https://www.hsdl.org/?view&did=750069>.

²⁸ Nathan E. Busch and Austen D. Givens, "Realizing the Promise of Public-Private Partnerships in U.S. Critical Infrastructure Protection," *International Journal of Critical Infrastructure Protection* 6, no. 1 (March 2013): 40, <http://dx.doi.org/10.1016/j.ijcip.2013.02.002>.

²⁹ Ted G. Lewis and Rudy Darken, "Potholes and Detours in the Road to Critical Infrastructure Protection Policy," *Homeland Security Journal* 1, no. 2 (September 2005): 1–11, <https://www.hsdl.org/?view&did=461885>; Ami J. Abou-bakr, *Managing Disasters through Public-Private Partnerships* (Washington, DC: Georgetown University Press, 2013), 178–181.

³⁰ Lewis and Darken, "Potholes and Detours in the Road," 1–10.

sector collaboration beyond a single crisis event.³¹ In addition, Abou-bakr highlights the divergence among stakeholders as to what constitutes a public-private partnership.³² Scott Robinson and Benjamin Gaddis add to this discourse by positing that mutual assistance between public and private sector stakeholders borne out of immediate necessity during disaster response efforts does not necessarily constitute true public-private partnership.³³ In summation, the majority of literature reviewed affirms the value of public-private collaboration as a key tenet of U.S. disaster management doctrine.

Notably, scholars from both sides of the debate acknowledge additional challenges regarding the viability of public-private partnerships to include the setting of expectations between partners. For example, Busch and Givens note the lack of agreement between partners on organizational roles and responsibilities, cost and reimbursement considerations, the management of government oversight, along with the potential for emergency management policy to be overly influenced by segments of the private sector.³⁴ Correspondingly, Abou-bakr cites a number of potential obstacles regarding information sharing between public and private sector partners, such as U.S. government classification restriction, antitrust laws, customer privacy concerns, and individual private sector organizations' desire to maintain a competitive advantage.³⁵ Collectively, scholars contend that these types of challenges threaten the effectiveness and sustainability of public-private partnerships, as many private sector industries require incentives to invest in disaster response or preparedness capabilities.

Although scholars and emergency management practitioners debate the policy and structural framework of the U.S. national disaster response system, most seemingly agree that the private sector has a vital role to play in disaster response. Albeit, some scholars

³¹ Abou-bakr, *Managing Disasters*, 187–188.

³² Abou-bakr, 48–59.

³³ Scott E. Robinson and Benjamin S. Gaddis, “Seeing Past Parallel Play: Survey Measures of Collaboration in Disaster Situations,” *The Policy Studies Journal* 40, no. 2 (May 2012): 260, <https://onlinelibrary-wiley-com.libproxy.nps.edu/doi/epdf/10.1111/j.1541-0072.2012.00452.x>.

³⁴ Busch and Givens, “Achieving Resilience,” 15–16; Busch and Givens, “Realizing the Promise of Public-Private Partnerships,” 41–43.

³⁵ Abou-bakr, *Managing Disasters*, 181.

and practitioners may advocate for reforms, conclusions regarding the value of public-private collaboration may be drawn from both empirical examples and academic research. To this end, the effective use of public-private partnerships is a mechanism by which government entities and the private sector can achieve outcomes that no single part of the equation could achieve on its own.

C. RESEARCH DESIGN

This thesis seeks to examine how the implementation of statewide access programs may be a key component to enabling the effective integration of private sector response capabilities into national and local incident management efforts. The underlying premise of this research is to highlight the gap between the recognized value of public-private partnerships in support of disaster response efforts versus the successful integration of such private sector response capabilities with federal, state and local government agencies. I will use topic definition and a comparative analysis of existing policies and practices as the method to research this topic.

First, this thesis will define the use of state “access programs” along with some of the challenges associated with “access management” in reference to disaster response or recovery coordination. The scope of this thesis will be accomplished by examining pertinent academic literature, relevant portions of U.S. incident management doctrine, and other governmental emergency management-related documents. The definition of terms and scoping of the topic will help frame this thesis discussion by providing an initial common understanding of the subject matter, identifying key stakeholder groups, and analyzing the importance of access management during emergencies.

Second, this thesis will conduct a policy analysis of the contextual relationship between the U.S. incident management philosophy and the use of public-private partnerships. The United States promotes a “whole community” approach to disaster response, which is inclusive of the private sector.³⁶ The analysis will review federal policy directives that form the basis of the structural framework that governs the integration of

³⁶ DHS, *National Infrastructure Protection Plan (NIPP) 2013*, 9.

the private sector into disaster response efforts, as outlined in Presidential Policy Directive-21, the National Infrastructure Protection Plan, and National Response Framework.³⁷ Subsequently, the analysis will examine the evolutionary role of the private sector in supporting emergencies, particularly in reference to protecting and restoring critical infrastructure. In addition, this portion of the research will explore the methods some states and local jurisdictions have implemented to integrate private sector response capabilities into their disaster response efforts.

Besides consulting the primary and secondary literature, I will conduct interviews with critical infrastructure owners and operators, state emergency managers, and other subject matter experts to obtain their individual perspectives on the role of the private sector during disasters. These interviews will be recorded and primarily conducted by telephone. The question sets will be designed to elicit the interviewee's professional opinion regarding the need to integrate the private sector into disaster management efforts, the potential benefits, and observed challenges. The information obtained from the interviews will be combined with research from government reports and open source articles to develop a series of case studies. The case studies will focus on critical infrastructure related stakeholder groups that have a role in assisting communities respond to and recover from emergencies. A comparative analysis will be conducted to uncover commonalities that may support this thesis' hypothesis.

The final part of the research will examine existing state access programs to determine an effective program model. Analysis will be conducted to determine key program functional requirements, methods to optimize coordination with the private sector, and sustainable business models to fund desired programs. The analysis will also examine potential constraints and other limiting factors that may hinder implementation of statewide access programs.

³⁷ "Presidential Policy Directive 21—Critical Infrastructure Security and Resilience," The White House, February 12, 2013, <https://obamawhitehouse.archives.gov/the-press-office/2013/02/12/presidential-policy-directive-critical-infrastructure-security-and-resil>.

D. KEY TERMS

For the purposes of this document, the following terms and definitions have been extracted from the Department of Homeland Security's *Crisis Event Response and Recovery Access Framework*.

Access: Refers to the permission to enter or transit through a geographical area within a jurisdiction that government officials have restricted entry into to maintain public safety or protect property.³⁸

Access Management: Refers to the process required to coordinate the access of public and private sector response and recovery resources, which may need to enter or transit through designated restricted areas or emergency zones in support of disaster preparation, emergency relief, or restoration efforts.³⁹

E. DEFINITIONS

For the purposes of this document, the following terms and definitions, extracted verbatim from the Department of Homeland Security's *Crisis Event Response and Recovery Access Framework*, apply.⁴⁰

Access Checkpoint: Refers to the point of access, normally managed by law enforcement, into a restricted area or emergency zone.

Access Program: Refers to the system or mechanism and the relevant processes and procedures by which a state or local jurisdiction administers access.

Business Emergency Operations Center: Refers to an organizational element, sometimes operating in support of a state emergency operations center, intended to share information and coordinate the participation and activities of businesses, non-profit and volunteer organizations, and private industry partners during disaster management efforts through public-private partnerships.

Community Lifeline: Refers to any critical infrastructure sector that provides an indispensable service that enables the continuous operation of critical business and government functions and is critical to human health and safety or economic security.

Emergency: Refers to any incident, whether natural, technological, or human-caused, that necessitates responsive action to protect life or property.

³⁸ DHS, *Crisis Event Response and Recovery Access*, 25–26. Term is derived from an understanding of source document's individual definitions for "access" and "restricted area."

³⁹ DHS, ii, 7, 12–16. Term is derived from information found throughout the source document.

⁴⁰ DHS, 25–26.

Emergency Zone: Refers to a geographically-defined area that is affected, or is expected to be affected, by an emergency.

Incident: An occurrence, natural or manmade, that necessitates a response to protect life or property; in this document, the word “incident” includes planned events as well as emergencies and/or disasters of all kinds and sizes.

Restricted Area: Refers to a geographical area within a jurisdiction in which authorized government officials have restricted access to maintain public safety or protect property.

Senior Official: The elected or appointed official (e.g., mayor, city manager) who, by statute, is responsible with implementing and administering laws, ordinances, and regulations for a jurisdiction.

II. DEFINING ACCESS MANAGEMENT

A. INTRODUCTION

Despite a well-defined incident management doctrine in the United States, integrating private sector response capabilities into emergency management efforts has not been fully developed. According to the National Emergency Management Association (NEMA), corporate emergency operations centers and private sector disaster response capabilities have grown rapidly since Hurricane Katrina (2005), which has “created an increasing demand for private sector coordination and communications with the public sector [during emergencies].”⁴¹ This growth and its related demands stem in part from lessons learned during Hurricane Katrina, Superstorm Sandy (2012), and other more recent major disasters, like those experienced during the 2017 Hurricane and Wildfire Season.⁴² Thus, various government policy directives and academic research emphasize the need to partner with the private sector to maintain the security and resilience of the nation.⁴³

Large-scale disasters often require a whole community response to combat or mitigate their resulting effects. The 2017 Hurricane and Wildfire Season produced some of the most costly natural disasters ever recorded in U.S. history, in terms of both physical destruction and loss of life.⁴⁴ Collectively, between Hurricanes Harvey, Irma, and Maria, the United States experienced an estimated \$273 billion dollars in widespread damage and losses.⁴⁵ Following the release of an independent study by George Washington University that focused on Puerto Rico, the estimated combined death toll from the three storms increased from 270 to over 3,100.⁴⁶ The wildfires that occurred in the western United States

⁴¹ NEMA, *Building Operational Public Private Partnerships*, 5.

⁴² *Encyclopedia Britannica*, s.v. “Superstorm Sandy,” accessed October 12, 2019.
<https://www.britannica.com/event/Superstorm-Sandy#accordion-article-history>.

⁴³ DHS, *National Preparedness Goal*, 2nd ed. (Washington, DC: Government Printing Office, 2015), 1, https://www.fema.gov/media-library-data/1443799615171-2aae90be55041740f97e8532fc680d40/National_Preparedness_Goal_2nd_Edition.pdf.

⁴⁴ FEMA, *2017 Hurricane Season*, 1.

⁴⁵ NOAA, NCEI, “Billion-Dollar Weather.”

⁴⁶ O’Donoghue, “Puerto Rico Increases Hurricane Maria Death Toll to 2,975.”

claimed an additional 44 lives and caused an estimated \$18.5 billion dollars in damage.⁴⁷ The devastating effects experienced during the 2017 Hurricane and Wildfire Season emphasized the value of public-private partnerships during national disaster response efforts.

The Federal Emergency Management Agency (FEMA) leads the nation in preparing for, preventing, responding to, and recovering from disasters.⁴⁸ A key recommendation in the *2017 Hurricane Season FEMA After-Action Report* underscored the need to more effectively include the private sector into disaster response and recovery efforts to best meet the needs of affected communities, particularly following a large-scale emergency or natural disaster.⁴⁹ However, the ability to successfully integrate private sector response capabilities into both national and local incident management operations continues to challenge federal, state and local government agencies.

How is this challenge to be met? Developing and implementing interoperable statewide access programs would enable the effective integration of private sector response capabilities into state and local disaster response and recovery operations. To better understand this potential solution, this chapter examines the purpose of an access program; the importance of access management during emergencies; and who requires and grants access.

B. WHAT IS ACCESS AND THE PURPOSE OF AN ACCESS PROGRAM?

During the various stages of an emergency, state or local authorities may need to establish restricted areas or emergency zones for public safety reasons. Designation of these restricted areas or emergency zones may be the result of a state-issued shelter-in-place or evacuation order. For example, a local jurisdiction or populated area expected to be impacted by an impending hurricane or approaching wildfire may require restricted

⁴⁷ NOAA, CEI, “Billion-Dollar Weather.”

⁴⁸ “S.3721—Post-Katrina Emergency Management Reform Act of 2006,” United States Congress, accessed August 26, 2020, <https://www.congress.gov/bill/109th-congress/senate-bill/3721#:~:text=Post-Katrina%20Emergency%20Management%20Reform%20Act%20of%202006%20-%28FEMA%29%20within%20the%20Department%20of%20Homeland%20Security%20%28DHS%29>.

⁴⁹ FEMA, *2017 Hurricane Season*, iii.

access pre-incident (e.g., before the hurricane makes landfall), or post-incident before repopulation can begin. These restricted areas or emergency zones may remain in effect until either the threat has passed, or the situation has stabilized, and the area has been deemed safe to re-enter. In this context, “access” constitutes permission to enter or transit through “a geographical area within a jurisdiction [that] government officials have restricted [entry into] to maintain public safety or protect property.”⁵⁰ These areas may have been “affected, or [are] expected to be affected, by an emergency.”⁵¹ Subsequently, “access management” may be thought of as the process used by state or local authorities to safely and effectively coordinate the access of public and private sector response and recovery resources.⁵² These resources may need to enter or transit through designated restricted areas or emergency zones in support of disaster preparation, emergency response, or restoration efforts.

An “access program” aims to provide the system or mechanism by which a state or local jurisdiction administers access management, with the relevant procedures documented in an appendix or operational section of its overarching all-hazards emergency preparedness plan (also known as an Emergency Operations Plan).⁵³ Implementation of the access program—commonly referred to as “activation” when in use—assists the affected jurisdiction in determining under what circumstances access restrictions may be needed and entry controlled.⁵⁴ In addition, an access program assists government officials in determining when and which types of assets may enter a designated restricted area or emergency zone based on the type of incident and response required (e.g., a hazardous materials spill or collapsed building). Consequently, the access program defines which process public and private sector organizations or individuals should follow in order to request access.

⁵⁰ DHS, *Crisis Event Response and Recovery Access*, 25–26.

⁵¹ DHS, 25–26.

⁵² DHS, ii, 7, 12–16.

⁵³ DHS, 3.

⁵⁴ DHS, 2.

C. THE IMPORTANCE OF ACCESS MANAGEMENT DURING EMERGENCIES

Access is both a response and recovery issue. One of the lessons learned by the state of Louisiana following Hurricane Katrina was that a lack of standardized access and re-entry procedures greatly hampered local response efforts and restoration of critical utilities and essential public services, as well as the resumption of operations by critical industries that supplied key resources to the rest of the nation.⁵⁵ The need to effectively coordinate and manage access during emergencies continues to be as relevant today, as it was then.

In 2018, a Department of Homeland Security (DHS) Office of Infrastructure Protection-sponsored critical infrastructure working group concluded that controlling and managing access during emergencies has been shown to be critical to assisting communities in responding to and recovering from incidents.⁵⁶ Furthermore, managing access “is particularly important during incidents that require significant population evacuations,” as through the course of an emergency, government officials may need to enforce ordered evacuations, coordinate emergency response operations, and prepare for restoration activities.⁵⁷ From this conclusion, two follow-on questions arise. First, who requires access? Second, who coordinates and grants access? An examination of Figure 1 from the DHS Office of Infrastructure Protection’s *Crisis Event Response and Recovery Access (CERRA) Framework* may help answer these questions.

⁵⁵ Louisiana State Police, *State of Louisiana Joint Standard Operating Procedure Statewide Credentialing/Access Control Program* (Baton Rouge, LA: Louisiana State Police, 2011), 4. http://www.lsp.org/pdf/nextgen_lscap.pdf.

⁵⁶ DHS, *Crisis Event Response and Recovery Access*, ii. Per the Cybersecurity and Infrastructure Security Agency Act of 2018 (H.R. 3359), which was signed November 16, 2018, the U.S. Department of Homeland Security established the Cybersecurity and Infrastructure Security Agency (formally known as the National Protection and Programs Directorate [NPPD]) and associated Infrastructure Security Division (formally known as the Office of Infrastructure Protection [IP]).

⁵⁷ DHS, *Crisis Event Response and Recovery Access*, 1.

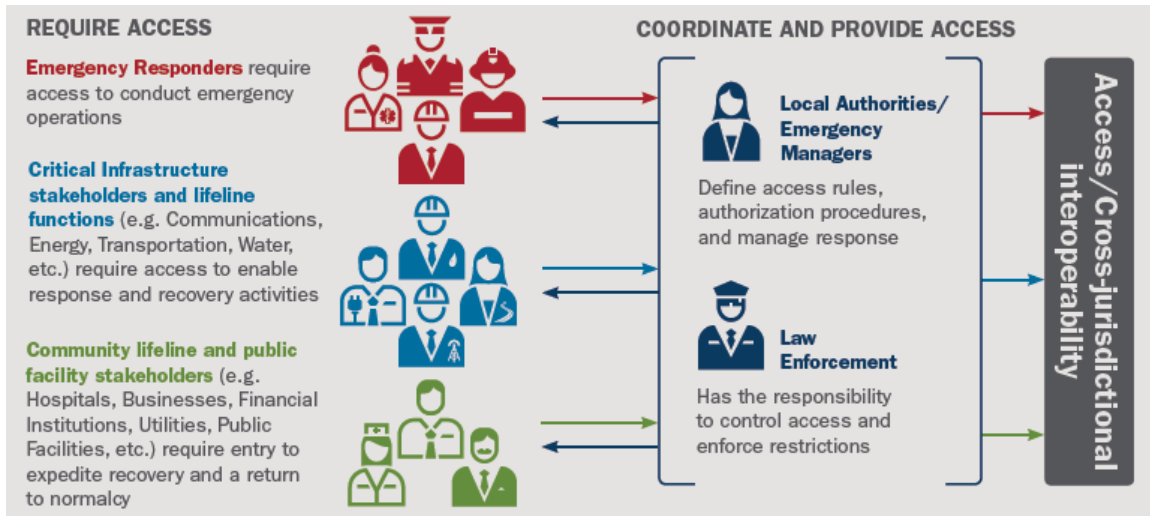


Figure 1. CERRA Stakeholder Coordination Requirements⁵⁸

D. WHO REQUIRES ACCESS?

Following the aftermath of an emergency, obtaining access into the affected area often immediately becomes a priority concern for private industry and local businesses, critical infrastructure owners and operators, residents and other community members, as they seek to determine the status of their facilities, businesses, and homes.⁵⁹ This discussion primarily focuses on private sector critical infrastructure owners and operators' access needs because of their current role in disaster response efforts.

Depending on the circumstances of the emergency, different industry and private sector stakeholders may desire access, as soon as possible, into designated restricted areas or emergency zones. From a communications service provider's perspective, once the immediate danger or threat has passed and the situation has stabilized, the company may need entry into the impacted area to conduct damage assessments, restore network systems, or reestablish cell phone service.⁶⁰ In another instance, a chemical facility owner may need entry to conduct safety measures, shut down procedures, or to maintain security for the

⁵⁸ Source: DHS, 3.

⁵⁹ DHS, 1.

⁶⁰ Cybersecurity and Infrastructure Security Agency (CISA), *Enhancing Post-disaster Access for Restoration of Community Lifelines and Essential Services* (Washington, DC: National Coordination Center for Communications, 2019), 3, <https://www.hsd1.org/?abstract&did=828496>.

facility.⁶¹ In some situations, private sector entities may require immediate access to protect critical infrastructure, reestablish essential public services, or enable the safe passage of first responders (e.g., safe downed power lines, conduct route clearance, or debris removal operations).⁶² Thus, managing access is both an emergency response and recovery issue for a large variety of public and private sector stakeholders.

The private sector's collective ownership of critical infrastructure makes it a vital stakeholder and key partner during U.S. disaster response efforts. The private sector owns and operates the majority of the United States' critical infrastructure: approximately 85%.⁶³ For example, the United States' energy industry largely consists of three subindustries that supply the nation with electricity, oil, and natural gas. Private industry owns eighty percent of the companies that control the production, storage, and distribution of these commodities.⁶⁴ Similarly, private industry dominates the majority of the 16 critical infrastructure sectors identified within Presidential Policy Directive-21 and as listed in Figure 2.⁶⁵ In recognition of this situation, U.S. national incident management doctrine focuses on a whole community approach to disaster management, which relies heavily upon direct coordination with private sector critical infrastructure owners and operators.⁶⁶ Thus, ensuring that private sector assets are able to access their facilities and equipment is central to disaster response and recovery efforts.

⁶¹ DHS, *Crisis Event Response and Recovery Access*, 12.

⁶² DHS, 6.

⁶³ GAO, *The Department of Homeland Security's (DHS) Critical Infrastructure Protection*, 1.

⁶⁴ "Energy Sector," Cybersecurity and Infrastructure Security Agency (CISA), accessed June 4, 2019, <https://www.dhs.gov/cisa/energy-sector>.

⁶⁵ The White House, "Presidential Policy Directive 21"; DHS, *Crisis Event Response and Recovery Access*, 5.

⁶⁶ FEMA, *National Response Framework*, 5.

Critical Infrastructure Sectors
• Chemical • Commercial Facilities • Communications • Critical Manufacturing • Dams • Defense Industrial Base • Emergency Services • Energy • Financial Services • Food and Agriculture • Government Facilities • Healthcare and Public Health • Information Technology • Nuclear Reactors, Materials, and Waste • Transportation Systems • Water and Wastewater Systems

Figure 2. List of Critical Infrastructure Sectors⁶⁷

Moreover, the various components of national critical infrastructure intertwine with a nation’s strength and resilience. The USA Patriot Act of 2001 defines U.S. critical infrastructure as those

systems and assets, whether physical or virtual, so vital to the United States that the incapacity or destruction of such systems and assets would have a debilitating impact on security, national economic security, national public health or safety, or any combination of those matters.⁶⁸

In essence, every community relies on critical infrastructure to support daily life, provide essential public services, and in some instances sustain its economic viability. For example, critical infrastructure systems provide the food and water, transportation networks, and employment opportunities that enable American society and local communities to thrive. Therefore, as Figure 1 indicates, various components of the private

⁶⁷ Source: DHS, *Crisis Event Response and Recovery Access*, 5.

⁶⁸ USA Patriot Act of 2001 §1016(e).

sector—to include critical infrastructure owners and operators—may require access during emergencies to assist with emergency management operations, restoration of essential services, and to enable community recovery.

E. WHO COORDINATES AND GRANTS ACCESS?

As every emergency occurs locally, state and local officials have the primary responsibility to manage the response and oversee the recovery of their communities. Part of this responsibility involves conducting access management. Typically, the state’s governor has the authority to restrict access within a state’s boundaries or issue an evacuation order.⁶⁹ For example, during a declared state of emergency, the Governor of Florida is granted certain emergency management powers, to include the authority to issue evacuation orders and restrict access to and from designated emergency areas.⁷⁰ Similarly, the Louisiana Disaster Act empowers the governor of Louisiana with the authority to declare a state of emergency and compel evacuations.⁷¹ However, the authority to impose access restrictions often falls to other state or local officials, which may be codified in local statutes or ordinances. For example, during a large-scale or statewide emergency, this authority may rest with the state’s director of Emergency Management, or for a local emergency, this authority may reside with the local emergency manager or a senior official (e.g., a police chief, sheriff, or fire chief), depending on the jurisdiction.⁷² Figure 1 indicates it is law enforcement’s responsibility to enforce any access restrictions put into effect by a jurisdiction’s designated official.⁷³ To this end, the granting and controlling of

⁶⁹ Amy L. Fairchild, James Colgrove, and Marian Moser Jones, “The Challenge of Mandatory Evacuation: Providing For and Deciding For,” *Health Affairs* 25, no. 4 (July/August 2006), <https://www.healthaffairs.org/doi/full/10.1377/hlthaff.25.4.958>.

⁷⁰ “The 2019 Florida Statutes,” Florida Legislature, accessed March 4, 2020, http://www.leg.state.fl.us/statutes/index.cfm?App_mode=Display_Statute&URL=0200-0299/0252/0252.html.

⁷¹ “Louisiana Homeland Security and Emergency Assistance and Disaster Act (Louisiana Disaster Act),” Governor’s Office of Homeland Security and Emergency Preparedness, accessed March 4, 2020, <http://gohsep.la.gov/ABOUT/AUTHORITIES/Louisiana-Disaster-Act>.

⁷² DHS, *Crisis Event Response and Recovery Access*, 3; Florida Legislature, “The 2019 Florida Statutes.”

⁷³ DHS, *Crisis Event Response and Recovery Access*, 3.

access is a state and local responsibility, typically informed by the hazardous conditions, safety concerns, or incident management priorities associated with the given emergency.

F. CONCLUSION

The U.S. whole community approach to incident management relies heavily upon direct coordination with the private sector to mitigate the effects of disasters and assist in community recovery. The incredible combination of events and whole community response required to alleviate the devastating effects experienced during the 2017 Hurricane and Wildfire Season proved that the federal government alone cannot help communities fully recover without greater assistance from and coordination with the private sector. The ability to effectively integrate private sector response and recovery capabilities into disaster management efforts has been noted as a critical success factor, as the private sector owns and operates the majority of the nation's critical infrastructure. In essence, the private sector is largely responsible for safeguarding, maintaining, and restoring the bulk of critical infrastructure and essential services that all communities rely on to thrive. In this sense, the private sector often fulfills a critical role in incident management operations. However, a lack of access management preparedness planning often hampers disaster management efforts, including the coordination of response and recovery activities, restoration timelines, and the overall cost of recovery. The concept of access management seeks to facilitate increased public-private coordination before, during and after emergencies through the implementation of an access program. To that end, widespread implementation of access programs would function as an essential component to enhance federal, state and local government agencies' ability to successfully integrate private sector response capabilities into national and local disaster response and recovery operations.

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III. ACCESS MANAGEMENT—A RECOGNIZED CHALLENGE

Private sector stakeholders from all 16 critical infrastructure sectors have identified obtaining post-disaster access as a long-standing impediment to effective response and recovery efforts. For example, the Commercial Facilities Sector identified the need to “work with the Emergency Services Sector and local officials” on challenges concerning “nationwide response efforts—such as crisis reentry credentialing to ensure access to restricted areas after a disaster,” as a priority activity in its 2015 Sector-Specific Plan.⁷⁴ Similarly, the Chemical Sector included one of its sector priority activities as the need to work with “DHS and State and local governments to develop a unified credentialing process to ensure [employee] access to facilities and assets in restricted areas following an emergency.”⁷⁵ Consequently, some states and local jurisdictions have developed a variety of access management approaches to moderate the challenge of managing post-disaster access. However, no standard or interoperable access management process is being used consistently throughout the United States, which often creates barriers to effective integration of private sector response capabilities into disaster response and recovery operations.⁷⁶ This chapter will examine some of the common post-disaster access challenges experienced by private sector critical infrastructure owner and operators and methods used by states to facilitate access management.

The *National Infrastructure Protection Plan* (NIPP) outlines the national partnership structure used to “strengthen the security and resilience of the Nation’s critical infrastructure.”⁷⁷ Within the national partnership structure, the federal government, along

⁷⁴ Department of Homeland Security (DHS), *Commercial Facilities Sector-Specific Plan: An Annex to the NIPP 2013* (Washington, DC: Government Printing Office, 2015), 24, <https://www.cisa.gov/publication/nipp-ssp-commercial-facilities-2015>.

⁷⁵ Department of Homeland Security (DHS), *Chemical Sector-Specific Plan: An Annex to the NIPP 2013* (Washington, DC: Government Printing Office, 2016), 17, <https://www.cisa.gov/publication/nipp-ssp-chemical-2015>.

⁷⁶ Healthcare Ready, *Access Denied*, 10–12, https://www.healthcareready.org/system/cms/files/1466/files/original/HCR_Access_Denied_Report.pdf. To view the source document, please see <https://healthcareready.org/disaster-access/> to request free copy.

⁷⁷ DHS, *National Infrastructure Protection Plan (NIPP) 2013*, 5.

with state, local, tribal, and territorial (SLTT) government entities, collaborate with the private sector through a variety of sector and cross-sector coordinating councils.⁷⁸ This council structure enables public-private coordination regarding national critical infrastructure security and resilience objectives. Subsequently, these critical infrastructure sector-related coordinating councils use Sector-Specific Plans to delineate long-term goals and priority activities that sector partners have expressed as necessary to improve the security and resilience of their respective sectors.⁷⁹ To this end, critical infrastructure sectors, such as the emergency services, healthcare and public health, transportation, and water and wastewater systems, have used this format to document the need for post-disaster access management coordination.⁸⁰ Thus, government agencies, along with their private sector counterparts, use the national partnership structure and Sector-Specific Plans as primary mechanisms to advance collective action towards critical infrastructure security and resilience objectives, as well as to achieve national preparedness goals.

A. SUMMARY OF COMMON POST-DISASTER ACCESS-RELATED CHALLENGES

A review of some of the common challenges experienced by private sector stakeholders in gaining post-disaster access appear in Table 1. These challenges to varying degrees may span across all 16 critical infrastructure sectors, depending on the type of emergency, its associated circumstances, and level of incident management coordination required with government officials.

⁷⁸ DHS, 35.

⁷⁹ DHS, 22.

⁸⁰ “2015 Sector-Specific Plans,” Cybersecurity and Infrastructure Security Agency (CISA), accessed July 8, 2019, <https://www.dhs.gov/cisa/2015-sector-specific-plans>.

Table 1. Common Post-Disaster Access Challenges⁸¹

Challenge	Effects on Incident Management Efforts
Lack of existing state or local-level access management plans or programs	• Confusion regarding process to request access. • Access requests adjudicated on an ad hoc basis. • Government officials may become overwhelmed by time required to validate and approve access requests. • Delay in integrating private sector capabilities into response and recovery operations.
No standard or interoperable access management process used throughout the United States	• State and local access management approaches can vary greatly. • Stakeholder confusion regarding differing access related rules and requirements.
Lack of interoperability between existing access programs	• Private sector stakeholders required to register in each individual access program. • Response and recovery assets delayed or denied access. • Can cause confusion and limit access routes. • Necessitates time consuming de-confliction actions.
Private sector restoration activities viewed as secondary or tertiary to response efforts	• Delays restoration of critical infrastructure and essential services. • Restrict movement of private sector response and recovery personnel and assets. • Hinders community recovery.
Lack of awareness of private sector access needs	• Increases cost of recovery. • Limits industry's ability to assess site damage and effect repairs. • Inadequately prioritizes critical infrastructure stakeholders' access requirements.
Lack of publicly available information regarding existing access programs	• Reduced shared awareness across all levels of government and the private sector. • Inhibits pre- and post-disaster coordination with the private sector.

⁸¹ Adapted from Healthcare Ready, *Access Denied*, 10–12; CISA, *Enhancing Post-disaster Access for Restoration*, 7.

B. EXAMINATION OF COMMON ACCESS CHALLENGES

One of the primary challenges is that most states or local jurisdictions currently do not have a standing access management plan or program. A nationwide study conducted by Healthcare Ready in 2016 showed that most states and local jurisdictions either did not have an existing access management program, or primarily managed access during emergencies on an ad hoc basis.⁸² Figure 3 provides a summary of state and local access programs. The color coding of the states illustrates the scarcity of existing access programs. For example, the gray areas represent where no known state or local access program was known to exist. Solid yellow states represent those with existing programs; striped black and yellow represent statewide programs under development; and blue represents known city or county access programs (e.g., New York City uses an access program, but the state of New York does not). This lack of statewide programs contributes to private sector post-disaster access challenges.

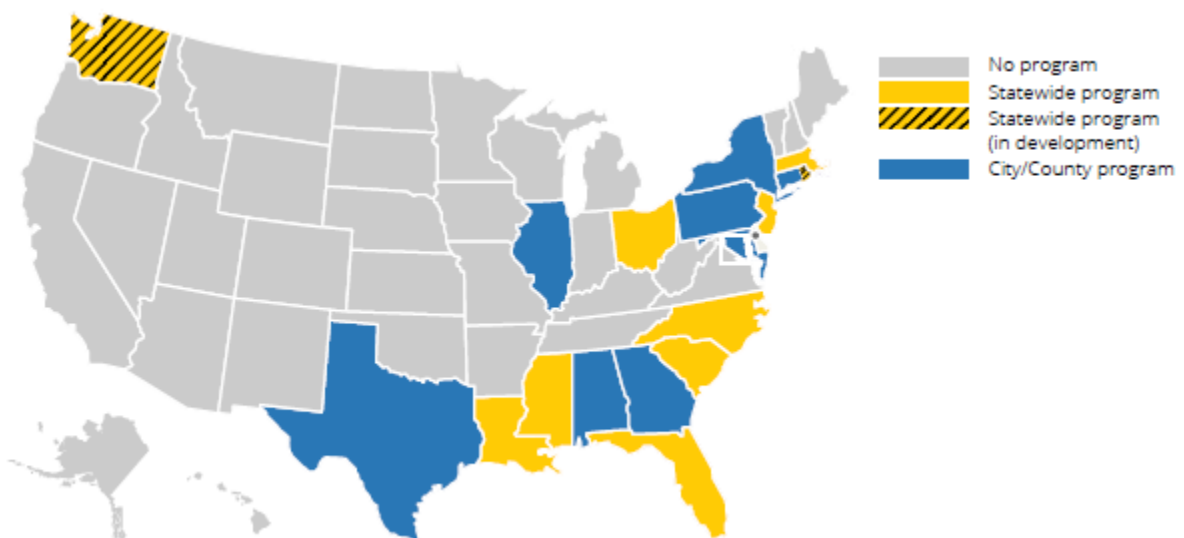


Figure 3. Summary of Access Programs as of December 2016⁸³

⁸² Healthcare Ready, *Access Denied*, 5–19.

⁸³ Adapted from Healthcare Ready, *Access Denied*, 12.

A comprehensive review of methods used by state and local jurisdictions to facilitate access revealed a variety of access management approaches. In that vein, the study by Healthcare Ready found no standard or interoperable access management process is being used consistently throughout the United States.⁸⁴ At the state and local level, varying methods have been developed or employed to manage private sector access requests, which have achieved varying levels of success. Some states that have established statewide access programs use either a Business Emergency Operations Center (BEOC), or a private sector manager to coordinate directly with private sector partners. A BEOC may be a coordination point and information sharing hub for private sector entities wishing to request access into an incident-affected area. A BEOC may be established through a public-private partnership; some maintain a physical presence, while others are virtual in nature—during emergencies.⁸⁵ Along with coordinating access requests, a BEOC may serve as a go between with the coordinating state or local Emergency Operation Center (EOC) to share incident-related information with both public and private sector stakeholders. Similarly, some states employ a private sector manager, who liaises with private sector organizations to coordinate access requests through the corresponding state or local EOC.⁸⁶ Alternatively, some jurisdictions conduct access management through third-party private sector access enrollment providers, who assist with administration of a specific statewide or local access management solution—like the issuance of individual badging or access cards. Lastly, some states and jurisdictions employ temporary or incident-specific ad hoc methods to facilitate private sector access, such as temporary provisions within emergency declarations, or a letter of access (LOA).⁸⁷ This variety in access management approaches can lead to confusion among private sector entities and overburden their supporting assets who must maintain awareness of the varying access rules and requirements.

⁸⁴ Healthcare Ready, 10–12.

⁸⁵ NEMA, *Building Operational Public Private Partnerships*, 20.

⁸⁶ Persia Payne-Hurley, email message to author, April 30, 2019.

⁸⁷ Healthcare Ready, *Access Denied*, 16.

A third common challenge experienced by the private sector is that the majority of existing access programs are often not interoperable across jurisdictional lines, and often do not account for response and recovery assets coming from outside their jurisdiction.⁸⁸ Within some states, one city's or county's approach to access may differ greatly or conflict with a neighboring jurisdiction's approach to access management. These differences can cause confusion and limit access routes to affected communities, especially in pass-through situations, where reaching a destination requires transit through one or multiple jurisdictions. Although physical barriers such as flooding, high water, and damaged roadways can limit access and may take time to overcome, jurisdictional decisions such as area blockades, curfews, or differing access requirements (e.g., type of identification required, commercial vehicle size and weight limits, etc.) often hamper private sector response and recovery personnel. These inconsistencies can add to a lack of interoperability between access programs and limit industry's ability to assess site damage or delay initiation of equipment repairs essential to enable community recovery.⁸⁹ The DHS National Protection and Programs Directorate's (NPPD) *2017 Hurricane Season After-Action Report* highlighted these disconnects, noting that "greater consistency across jurisdictions is needed for access and re-entry rules" to eliminate jurisdictional differences regarding how access management procedures are implemented to reduce confusion among private sector stakeholders assisting with restoration efforts.⁹⁰ This need for uniformity, or even more so interoperability, stands out most when the effects of a disaster span multiple states or jurisdictions, necessitating large-scale evacuations or enactment of travel restriction orders. A lack of commonality regarding access rules and requirements can impede assistance from the private sector, which may have assets responding from across the country.

Obtaining publicly available information regarding existing access programs is another common challenge. Information regarding local access requirements during a

⁸⁸ Jim Byrne, personal communication, December 6, 2016.

⁸⁹ John McClain, personal communication, June 6, 2019.

⁹⁰ National Protection and Programs Directorate (NPPD), *2017 Hurricane Season After-Action Report* (Washington, DC: Government Printing Office, 2018), 13, <https://www.hsdl.org/?abstract&did=829522>. Access to this publication requires access to the Homeland Security Digital Library.

disaster can be difficult to find, resulting in confusion and response delays, as many jurisdictions do not adequately publicize their access requirements.⁹¹ During the 2017 hurricane season, the DHS NPPD coordinated with the FEMA National Business Emergency Operations Center (NBEOC) to form a *Business Infrastructure Industry Solutions Group* (BIISG) to

facilitate coordination between the government and the private sector to ensure unity of effort between industry and federal, state, and local authorities in addressing key private sector issues, including access and re-entry to the area [s] affected by the hurricane [s], commodity flow, and infrastructure restoration.⁹²

In support of this objective, the BIISG attempted to determine the status of affected jurisdictional access programs via internet searches and review of state emergency management agency websites. In many cases, it proved difficult to determine (1) if an affected state or jurisdiction had an access program; (2) if it did, the status of the access program (i.e., activated or not activated); and (3) if activated, clarification regarding any associated access requirements or restrictions being utilized. This lack of accessibility to programmatic information can prevent efficient coordination between private sector response assets and affected jurisdictions.

C. EXAMPLES OF STATE AND PRIVATE SECTOR ACCESS MANAGEMENT APPROACHES

While a limited number of states and local jurisdictions have access programs, a few common approaches have been developed. The more capable solutions account for coordination with the private sector throughout the life cycle of an incident (i.e., before, during, and after). The following examples represent some of the common access management approaches used by state and local governments. Table 2 summarizes some of the advantages and disadvantages of these common access management approaches.

⁹¹ CISA, *Enhancing Post-disaster Access for Restoration*, 7.

⁹² NPPD, *2017 Hurricane Season After-Action Report*, 8.

Table 2. Advantages and Disadvantages of Common State and Private Sector Access Management Approaches⁹³

Access Management Approach	Advantages	Disadvantages
State or Local Access Program	• Typically administered at no cost to private sector participants • Provides government officials awareness of private sector access needs through advanced registration • Improves coordination before, during, and after a disaster • Alleviates need to maintain informal relationships to gain access • May be utilized as part of state or jurisdiction's Emergency Operations Plan	• Limited number of formal programs/Not established in all 50 states and territories • Must be well publicized to ensure private sector entities aware of program and its requirements • May not be interoperable across jurisdictional lines • May require some level of dedicated funding to operate and maintain
Business Emergency Operation Center (BEOC)	• Allows for direct coordination between government officials and private sector stakeholders • May enable real-time solutions to access management challenges • May be utilized in coordination with existing state's Emergency Operations Plan or access program • May act as a coordination point and information sharing hub for incident stakeholders • Can be physical or virtual in nature	• Limited in number/Not established in all 50 states and territories • Vary widely in level of capabilities and designated functions • BEOC contact information may not be well known to entities outside the state • Requires continued and active participation from state and regional private sector and government partners • May require some level of dedicated funding to operate and maintain
Private Sector Manager	• Enables coordination between government officials, state or local Emergency Operations Center(s), and state and regional private sector partners • Can facilitate real-time solutions to access management challenges	• Requires a dedicated position with specified authorities • Typically assigned as a single liaison; can become overwhelmed during large-scale emergencies • Potential loss of continuity when position is vacated

⁹³ Adapted from Healthcare Ready, *Access Denied*, 10–16; DHS, *Crisis Event Response and Recovery Access*, 8.

Access Management Approach	Advantages	Disadvantages
	• Maintains liaison with state and regional private sector partners • Position may be incorporated into state's Emergency Operations Plan • Designated manager for state or local access program(s)	• Contact information for Private Sector Managers may not be well known to entities outside the state
Access Enrollment Provider (AEP)	• Provides ready-to-use access management solution • May reduce time and effort required to establish an access program • Service may be provided at no cost to state and local emergency responders • Provides government officials awareness of private sector access needs through advanced registration • Service may include specialized software applications for participant notification, verification and tracking	• Fee based service—Generally require private sector participant registration fee • Requires contractual agreement between state or local jurisdiction and access enrollment provider • Access management solution is proprietary • Access solution may not be interoperable with other jurisdictions' access programs or AEP's solutions • Private sector entities from outside the state or jurisdiction may not be aware of program or its requirements
Emergency Declarations	• Applicable to an entire state or jurisdiction • Language can be tailored for a specific incident or set of stakeholders • Easy to disseminate widely through various channels or platforms	• Generally require time to draft and obtain official approval • Difficult to create language to specify every group, situation, or potential issue • Requires clear internal and external stakeholder messaging • May not align with neighboring states' emergency declarations
Letters of Access	• Relatively easy to develop • May use standardized language • Typically list organization's point of contact information and effective dates	• Generally not serialized or contain limited to no security features • Easy to reproduce • May not be accepted by checkpoint personnel or neighboring jurisdictions • May be difficult to disseminate to end user

One model approach is Florida’s use of a state-managed access program in combination with its emergency support function structure to manage access during emergencies. The Florida Division of Emergency Management administers the Florida’s *Statewide Private Sector Re-Entry Program*.⁹⁴ During severe weather emergencies (i.e., hurricanes), the division activates the program to achieve “the rapid restoration of local businesses that provide vital goods and services [to the impacted area].”⁹⁵ During large-scale emergencies (e.g., Hurricane Irma, 2017), authorities often extend the program to individuals and businesses transporting or providing essential commodities and services, transiting from outside the state, in support of the overall disaster response effort. The State Emergency Response Team’s Emergency Support Function 18 (ESF-18)—in coordination with Florida’s Division of Emergency Management, local county officials, and law enforcement entities, via a private sector hotline or direct email—coordinate requests for access.⁹⁶ The Florida Department of Economic Opportunity acts as the lead agency for the State’s ESF-18, and as a virtual BEOC before, during, and after disasters.⁹⁷ The primary benefit of this approach is the facilitated coordination between government officials and private sector stakeholders, which enables real-time solutions to access management challenges.

Another model approach can be observed in North Carolina’s dedicated use of a private sector manager to liaise between government officials, state or local Emergency Operations Centers, and state and regional private sector partners. North Carolina’s Department of Public Safety, Division of Emergency Management administers North Carolina’s *Vendor Disaster Re-entry Program*.⁹⁸ A private sector manager manages the program in accordance with the state’s Enduring Access to Emergency Supplies law—North Carolina General Statute (N.C.G.S.) 166A-19.70.⁹⁹ The law aspires “to mitigate the

⁹⁴ FDEM, “Statewide Private Sector Re-Entry Program.”

⁹⁵ FDEM, “Statewide Private Sector Re-Entry Program.”

⁹⁶ FDEM, “Statewide Private Sector Re-Entry Program.”

⁹⁷ “Contact: About Us,” Florida Department of Economic Opportunity, accessed July 1, 2019, <https://floridadisaster.biz/ManageContent?PageID=ABOUT+US>.

⁹⁸ Persia Payne-Hurley, email message to author, April 30, 2019.

⁹⁹ Persia Payne-Hurley, email message to author, April 30, 2019.

impacts [of disasters] on communities by ensuring the availability of emergency supplies and utility services.”¹⁰⁰ Private sector companies may register in the program—via a state managed web-based portal—as service providers in one of three categories: “lifesaving services, health and safety, or economic well-being.”¹⁰¹ Approved companies receive “re-entry certificates” renewable every three years. During emergencies, the state’s web-based portal notifies registered companies when North Carolina’s re-entry program has been activated, as well as when their respective category has been granted access.¹⁰² This process enables local authorities to manage access of registered program participants and prioritize the flow of necessary resources.

Alternatively, some states and local jurisdictions conduct access management through a third-party access enrollment provider (AEP). This provider typically is either a private sector non-profit or for-profit entity that helps a jurisdiction to establish and manage its access program. In addition, these access enrollment providers may for a fee facilitate outreach and registration efforts with both public and private sector organizations, distribute incident-specific access tokens (e.g., access cards or vehicle placards), or implement specified access program rules and requirements, when directed by the state or local official with authority over the designated access program.¹⁰³ For example, during 2018 in anticipation of Hurricane Florence impacting the coastal areas of Virginia, the Virginia Department of Emergency Management coordinated with TruEntry, an access enrollment provider, to rapidly establish an access program (i.e., the Virginia Emergency Access Program).¹⁰⁴ Within 12 hours, the AEP created an online registration platform. This platform enabled the enrollment of over 15,000 private sector employees, contractors, and other recovery personnel within 96 hours of the access program’s activation. In this situation, the typical access program development process of six to twelve months was

¹⁰⁰ Persia Payne-Hurley, email message to author, April 30, 2019.

¹⁰¹ Healthcare Ready, *Access Denied*, 39.

¹⁰² Healthcare Ready, 39.

¹⁰³ “CERRA Access Program Providers,” TruEntry, accessed July 10, 2019, <https://www.cerraaccess.org/cerra-access-program-providers>.

¹⁰⁴ “Virginia Uses CERRA,” TruEntry, accessed March 28, 2020, <https://truentry.com>.

reduced to a few days.¹⁰⁵ Additionally, the AEP provided training support to law enforcement and emergency management personnel. In this instance, the AEP assisted the state in preparing for access management in support of restoration activities and repopulation, following a large-scale evacuation.

AEPs offer jurisdictions a commercial solution to the access management challenge. Their ready-made solutions can be customized to meet jurisdictional needs and may include specialized notification and asset tracking software applications.¹⁰⁶ A limited number of access enrollment providers seem to operate in different portions of the United States. For example, the Emergency Response—Identity Trust Network provides re-entry access services for Louisiana and Mississippi.¹⁰⁷ The Reentry Access Group supports re-entry authorization efforts for Harris County, Texas.¹⁰⁸ Salamander provides “intelligent accountability” services in several Midwestern states, where as the Corporate Emergency Access System (CEAS) operates primarily in the northeastern portion of the United States.¹⁰⁹ CEAS is representative of the business model employed by the majority of the AEPs. Through the CEAS program, private sector companies can enroll designated essential personnel for an annual fee.¹¹⁰ These essential personnel receive a “common credential” access card, allowing them to transit restricted areas—within the specific program’s jurisdictional boundaries (e.g., Massachusetts statewide access program)—during emergencies to service critical infrastructure.¹¹¹ In this way, some states and local

¹⁰⁵ James Byrne, personal communication, November 26, 2018.

¹⁰⁶ “Tag, Track, and Report,” Salamander, accessed July 8, 2020, <https://www.salamanderlive.com/solutions/how-it-works>.

¹⁰⁷ “Home Page,” Emergency Response Identity Trust Network, accessed July 10, 2019, <https://www.eritn.com/>.

¹⁰⁸ “Home Page,” Reentry Access Group, accessed July 10, 2019, <https://reentryaccess.com/>.

¹⁰⁹ “Home Page,” Salamander, accessed July 8, 2020, <https://www.salamanderlive.com/>; “Is CEAS Available in My Area?,” Corporate Emergency Access System, accessed August 26, 2020, https://www.ceas.com/ceas-legacy__trashed/where-is-ceas-available/.

¹¹⁰ “Cost to Participate,” Corporate Emergency Access System, accessed July 10, 2019, <https://www.ceas.com/ceas-legacy/cost-to-participate/>.

¹¹¹ “Commonwealth of Massachusetts CEAS Program Page,” Corporate Emergency Access System, accessed July 10, 2019, https://www.ceas.com/our_programs/ma/.

jurisdictions use AEPs to reduce the time and effort required to establish, manage, and maintain an access program.

Finally, some states and jurisdictions rely on temporary or incident-specific ad hoc methods to facilitate private sector access. Such methods may include use of provisions within emergency declarations, direct coordination with the affected state or local EOC, or a letter of access (LOA).¹¹² During an emergency, a state (typically via the governor) may specify provisions within its emergency declaration to facilitate the transportation of materials, supplies, and services in direct support of disaster preparation and emergency relief efforts.¹¹³ Some EOCs may establish a temporary process to directly receive and coordinate access requests, or coordinate issuing an incident-specific LOA with private sector organizations to expedite access into restricted areas.¹¹⁴ In each of these situations, the use of a temporary access management solution poses a series of risks. First, government officials may become overwhelmed by the volume of private sector access requests—particularly during large-scale emergencies. Second, the ad hoc solution may require excessive time to review and adjudicate individual access requests. Third, levels of approval may be required to implement the solution—as in the case of LOAs and emergency declarations. Fourth, the chosen solution may not be interoperable with neighboring jurisdictions. In general, the successful implementation of a temporary solution may present the greatest number of challenges to government officials and detract from incident management operations.

D. UNDERSTANDING AND PRIORITIZING PRIVATE SECTOR ACCESS NEEDS

When local officials view private sector restoration activities as secondary or tertiary to response efforts—or inadequately prioritizes them, it creates an added challenge. At various levels of government, the historical tendency emphasizes the response portion of incident management (e.g., conducting immediate response, search and rescue, and other

¹¹² Healthcare Ready, *Access Denied*, 16.

¹¹³ Healthcare Ready, 19.

¹¹⁴ Healthcare Ready, 17.

life-saving operations) over recovery planning. This lack of prioritization and general misunderstanding of the private sector's collective access needs has at times resulted in poor de-confliction between responding private sector assets and the returning general public.¹¹⁵ For example, during Florida's Hurricane Michael emergency response efforts (2018), local authorities allowed members of the general public to return to their homes before sufficiently restoring some essential services (e.g., electricity and communication networks, 9-1-1 call services, etc.). State officials made little to no transit allowances for responding utility repair crews making repairs. This lack of preference resulted in clogged highways, with repair crews delayed at checkpoints, or stuck in traffic alongside the returning population.¹¹⁶ Additionally, due to curfew restrictions, repair crews could not work at night and congested roads in the day further crippled their efforts, resulting in 6 to 8-hour transits between worksites.¹¹⁷ Thus, a lack of consideration for private sector access needs can delay the restoration of critical infrastructure, reestablishment of essential services, and hamper community recovery.

Similarly, this general misunderstanding of critical infrastructure stakeholders' access needs applies across multiple sectors. Typically, establishing and enforcing restricted areas or emergency zones does not impede the flow of responding emergency services personnel (i.e., local law enforcement, fire and rescue, or emergency medical services [EMS]) because checkpoint personnel readily recognize their uniforms and marked vehicles. However, personnel from other industries, such as hospitals, hotels, financial institutions, etc., may be denied access because checkpoint personnel may not understand their purpose for re-entering a restricted area. For example, during emergencies, local hospitals may need to recall portions of their staff or augment them with personnel from outside the restricted area to maintain adequate levels of care. Consequently, not all these additional personnel will be medical staff, but rather "fulfilling support and administrative roles integral to maintaining hospital operations (e.g., laundry, janitorial,

¹¹⁵ Telecommunications industry representative, email message to author, July 9, 2019.

¹¹⁶ Federal representative from the National Coordinating Center for Communications, email message to author, July 10, 2019; CISA, *Enhancing Post-disaster Access for Restoration*, 5.

¹¹⁷ Federal representative from the National Coordinating Center for Communications, email message to author, July 10, 2019; CISA, *Enhancing Post-disaster Access for Restoration*, 5.

food preparation, and pharmacy personnel).”¹¹⁸ In other situations, local officials may not be aware of the necessity to grant access to private sector related emergency response teams. For example, some industries—like chemical manufactures—deploy specialized personnel to assess damage, conduct repairs, or stabilize a facility following a disaster.¹¹⁹ These personnel may travel from outside the state and not be known to local government officials; however, a delay in access may adversely affect facility restoration activities.¹²⁰ Thus, a lack of understanding or proper consideration of the private sector’s access needs following an emergency can hamper the effectiveness of both response and recovery operations.

E. CONCLUSION

The need for access management coordination in support of emergencies has been recognized by both the private sector and government alike. The desire for a solution has created a mishmash of approaches, which are largely inconsistent and not interoperable across jurisdictional boundaries. At the federal level, critical infrastructure partners have used the national partnership structure to highlight this need and prioritize activities related to post-disaster access management coordination. As discussed in Chapter II, access management is primarily a state or local government responsibility. Although many scholars and emergency management practitioners have concluded that effective integration of private sector resources and capabilities can have a positive effect on disaster response and recovery operations, the majority of state Emergency Operations Plans do not delineate a process for mitigating existing access management challenges. Conversely, to meet this challenge, some states and local jurisdictions—primarily southern and eastern coastal states prone to hurricanes—have developed varying methods to conduct access management. However, the current set of access management approaches are inconsistent and lack interoperability. This absence of commonality can overburden private sector entities, as critical infrastructure owners and operators endeavor to maintain awareness of

¹¹⁸ DHS, *Crisis Event Response and Recovery Access*, 15.

¹¹⁹ DHS, 12.

¹²⁰ DHS, 12

existing access programs, differences in access rules and requirements, or use of ad hoc approaches. A lack of interoperability further complicates the situation, as private sector organizations often must register as participants in multiple state or locally implemented access programs. Thus, the existing patchwork of access management approaches—or lack thereof—along with a general unawareness of critical infrastructure stakeholders’ access needs, has impeded the effective integration of private sector response capabilities into disaster response and recovery operations.

IV. U.S. INCIDENT MANAGEMENT POLICY AND ACCESS MANAGEMENT

A. REVIEW OF PRINCIPAL U.S. INCIDENT MANAGEMENT POLICY AND GUIDANCE

Neither the idea nor the need for effective access management is new. For many in the emergency management community, the idea traces back to Hurricane Katrina, while for others perhaps earlier.¹²¹ Likewise, many of the post-disaster access-related challenges have not gone unrecognized. As stated in the previous chapter, many critical infrastructure owners and operators have opined the need to work with government officials to resolve these challenges. Similarly, as discussed in Chapter I, some states and local governments have implemented varying methods to manage private sector access requests during incident management operations. In addition, the federal government has periodically attempted to address the access management topic through federal guidance or updates in national incident management doctrine. However, establishment of a common access management process to effectively integrate private sector response capabilities into incident management operations continues to present a challenge for federal, state, and local government agencies. This chapter will examine federal incident management related policies and guidance that form the structural framework governing the integration of the private sector into disaster response efforts to analyze how they directly or indirectly support the concept of access management.

Though a recognized necessity within the incident management community, the concepts of access and access management, as defined in the context of this thesis, infrequently appear in federal incident management guidance. Specifically, such access refers to the jurisdictional permission to enter or transit through a geographical area into which government officials have restricted entry to maintain public safety or protect property; access management covers the jurisdictional process used to coordinate access for public and private sector resources, supporting disaster preparation, emergency relief,

¹²¹ Jim Byrne, personal communication, December 6, 2016.

or restoration efforts. A cornerstone of U.S. incident management policy is the *National Incident Management System* (NIMS). It defines a comprehensive approach to enable all levels of government, local communities, and private sector organizations to share resources, act collaboratively, and communicate information when managing incidents.¹²² The third and most recent edition of NIMS (2017) alludes to the concepts of access and access management by lightly referencing the physical issuance of incident-specific credentials or badging to permit access to incident sites and maintain worksite security.¹²³ However, earlier versions of NIMS and other principal guidance provide some further context regarding access and access management. Consequently, this lack of reference has created a gap in U.S. incident management doctrine and hindered greater discourse of the topic.

Similarly, other foundational incident management policy documents—like the *National Response Framework* (NRF) and the *National Disaster Recovery Framework* (NDRF)—indirectly refer to the concept of access management. The NRF “provides foundational emergency management doctrine for how the Nation responds to all types of incidents.”¹²⁴ In reference to access management, the NRF describes “support for access” as a law enforcement responsibility under the functions associated with Emergency Support Function #13—Public Safety and Security.¹²⁵ Complementary to the NRF, the NDRF outlines the U.S. strategic approach and structural framework for coordinating large-scale recovery activities and building community resiliency following a disaster.¹²⁶ The NDRF indirectly promotes the concept of access management by emphasizing the need for government officials to plan, prepare, and coordinate with the private sector concerning infrastructure systems-related restoration challenges. This principle is

¹²² Federal Emergency Management Agency (FEMA), *National Incident Management System*, 3rd ed. (Washington, DC: Government Printing Office, 2017), 1, <https://www.fema.gov/media-library/assets/documents/148019>.

¹²³ FEMA, 61–62.

¹²⁴ FEMA, *National Response Framework*, ii.

¹²⁵ FEMA, 41.

¹²⁶ Federal Emergency Management Agency, *National Disaster Recovery Framework 2nd ed.* (Washington, DC: Government Printing Office, 2016), 1, https://www.fema.gov/sites/default/files/2020-06/national_disaster_recovery_framework_2nd.pdf.

fundamental to the concept of access management. Thus, despite the fact several key U.S. incident management policy documents imply the need for access management, they do not adequately address the topic or recommend a common process for managing access during emergencies.

B. COMPARISON OF THE NIMS GUIDELINE FOR CREDENTIALING PERSONNEL TO THE CERRA FRAMEWORK

The 2011 *National Incident Management System Guideline for the Credentialing of Personnel* directly refers to access as “the ability of a [emergency] responder to gain entry to a disaster area” and outlines national credentialing standards to facilitate cross-jurisdictional interoperability of incident management personnel and other emergency responders deployed to locations outside their home jurisdiction.¹²⁷ This definition of access echoes the previous 2008 second edition of NIMS, which categorized members of the private sector “who assume an emergency management role” during an incident as emergency responders.¹²⁸ In relationship to the granting of access, a person is considered “credentialed” if the person satisfies four fundamental elements outlined in the NIMS Guideline; specifically the individual’s identity, qualifications, organizational affiliation, and deployment authorization can be verified.¹²⁹ However, the credentialing standards specified in the NIMS Guideline are only mandatory for federal agencies with incident management responsibilities described in the National Response Framework.¹³⁰ Consequently, although the NIMS Guideline encourages SLTT government officials to address the concept of access, through standardized credentialing, it does not fully detail how to conduct access management.

In contrast, the *Crisis Event Response and Recovery Access (CERRA) Framework* provides a methodology for conducting access management through the use of an access

¹²⁷ Federal Emergency Management Agency (FEMA), *National Incident Management System Guideline for the Credentialing of Personnel* (Washington, DC: Government Printing Office, 2011), 27, https://www.fema.gov/pdf/emergency/nims/nims_cred_guidelines_report.pdf.

¹²⁸ FEMA, *National Incident Management System 2nd ed.* (Washington, DC: Government Printing Office, 2008), 139, https://www.fema.gov/pdf/emergency/nims/NIMS_core.pdf.

¹²⁹ FEMA, *National Incident Management System Guideline*, 27.

¹³⁰ FEMA, *National Incident Management System 2nd ed.*, 1.

program. Published in 2018, the CERRA Framework grew out of a collaborative public-private partnership between the DHS Office of Infrastructure Protection (now the Cybersecurity and Infrastructure Security Agency [CISA]) and multiple critical infrastructure Government and Sector Coordinating Councils.¹³¹ The intent of the CERRA Framework is to enable state, local, tribal, and territorial jurisdictions to establish their own access programs by using recommended best practices and a common process approach.¹³² The methodology put forth describes several key components related to access programs, as well as description of stakeholders' roles and responsibilities; various access planning considerations; and a phased re-entry process for use following emergencies. Although the CERRA Framework directly promotes the use of access programs as a method to enhance integration of private sector capabilities into disaster response and recovery efforts, implementation by state and local jurisdictions is voluntary. In addition, access program development is not supported under existing federal preparedness or homeland security grant programs, which may hinder widespread adoption.¹³³

C. RECENT CHANGES IN THE NATIONAL RESPONSE FRAMEWORK

Recent revisions to the *National Response Framework* (NRF) may directly benefit the concept of access management. The revised fourth edition of the NRF in 2019 incorporated lessons learned from significant disasters that occurred during the 2017 and 2018 Hurricane and Wildfire Seasons.¹³⁴ As stated in Chapter II, one of the key recommendations from the *2017 Hurricane Season FEMA After-Action Report* called out the need for the federal government to facilitate increased “coordination across the critical infrastructure sectors,” which recognized that “closer partnerships with the private sector

¹³¹ DHS, *Crisis Event Response and Recovery Access*, Acknowledgements. Per the Cybersecurity and Infrastructure Security Agency Act of 2018 (H.R. 3359), signed November 16, 2018, the U.S. Department of Homeland Security established the Cybersecurity and Infrastructure Security Agency (formally known as the National Protection and Programs Directorate [NPPD]) and associated Infrastructure Security Division (formally known as the Office of Infrastructure Protection [IP]).

¹³² DHS, *Crisis Event Response and Recovery Access*, ii.

¹³³ “Grants,” Federal Emergency Management Agency, accessed June 16, 2020, <https://www.fema.gov/grants>; “Fiscal Year 2020 Homeland Security Grant Program,” Department of Homeland Security, 2020, https://www.fema.gov/media-library-data/1581619107442-915cab1ee9d3eaece7aa50d6bc439c52/FY_2020_HSGP_Fact_Sheet_GPD_Approved_508AB.pdf.

¹³⁴ FEMA, *National Response Framework*, 2.

are crucial in providing commodities and support” to communities affected by disasters.¹³⁵ To implement this recommendation, FEMA updated the NRF to specify the establishment of a new Emergency Support Function (ESF)—the Cross-Sector Business and Infrastructure ESF or ESF #14—as well as to introduce the concept of community lifelines.¹³⁶ These changes expanded existing incident management principles to better integrate public and private sector capabilities during disaster response efforts. These changes nicely support the concept of access management.

The NRF and CERRA Framework use and define community lifelines in similar ways. The CERRA Framework initially laid out a community lifeline as “any essential service provided by the public or private sector which a community’s activity, health, and well-being may depend (e.g., utility systems, healthcare facilities, transportation hubs, financial institutions, public facilities).”¹³⁷ Likewise, the NRF defines them as “those services that enable the continuous operation of critical government and business functions and are essential to human health and safety or economic security.”¹³⁸ Within the NRF, the seven community lifelines include elements of the following essential services as shown in Figure 4: Safety and Security; Food, Water, Shelter; Health and Medical; Energy (Power and Fuel); Communications; Transportation; and Hazardous Materials.¹³⁹ In each case, both frameworks posit that the ability to stabilize or restore community lifelines following an emergency enables lifesaving measures, facilitates recovery operations, and reduces the overall economic impact from disasters.¹⁴⁰ In this sense, the NRF and CERRA Framework advocate for more effective coordination with the private sector to inform decision-making, establish incident priorities, and facilitate operational coordination. These principles align with the concept of access management.

¹³⁵ FEMA, *2017 Hurricane Season*, iii.

¹³⁶ FEMA, *National Response Framework*, iii-1.

¹³⁷ DHS, *Crisis Event Response and Recovery Access*, 26.

¹³⁸ FEMA, *National Response Framework*, 1.

¹³⁹ Source: FEMA, 8.

¹⁴⁰ FEMA, 1.



Figure 4. Community Lifelines¹⁴¹

The creation of ESF #14 resulted from an interagency collaboration between CISA and FEMA in support of previous disasters. As mentioned in Chapter III, during the 2017 hurricane season, portions of CISA coordinated with the FEMA National Business Emergency Operations Center to form a *Business Infrastructure Industry Solutions Group* (BIISG). The BIISG endeavored to facilitate coordination between all levels of government and the private sector to address key operational challenges to include “access and re-entry to the area[s] affected by the hurricane[s], commodity flow, and infrastructure restoration.”¹⁴² Consequently, the primary function of ESF #14 is to support stabilization of critical supply chains and community lifelines following a disaster.¹⁴³ In particular, ESF #14 aims to facilitate cross-sector coordination and collaboration between business, critical infrastructure, and government stakeholders—not aligned under other ESFs—to prevent or mitigate the potential of cascading failures across multiple sectors.¹⁴⁴ To this end, ESF #14 represents a significant opportunity to enhance coordination with the private sector to resolve common access management related challenges.

D. INFLUENCE OF THE ESSENTIAL CRITICAL INFRASTRUCTURE WORKFORCE GUIDANCE

Although written specifically in support of the 2019 coronavirus pandemic (i.e., COVID-19), CISA’s promulgation of the *Guidance on the Essential Critical Infrastructure Workforce*—commonly referred to as the ECIW guidance—helped advance awareness of

¹⁴¹ FEMA, *National Response Framework*, 8.

¹⁴² NPPD, *2017 Hurricane Season After-Action Report*, 8.

¹⁴³ Federal Emergency Management Agency (FEMA) *Emergency Support Function #14—Cross-Sector and Business Infrastructure Annex* (Washington, DC: Government Printing Office, 2019), 1, https://www.fema.gov/sites/default/files/2020-07/fema_ESF_14_Business-Infrastructure.pdf.

¹⁴⁴ FEMA, 2.

the access management concept in multiple ways. The ECIW guidance highlighted essential workers in key industries thought to perform nationally critical functions or provide essential services that needed to continue during the pandemic to support local community and national resilience.¹⁴⁵ As many states moved to impose various stay-at-home orders, closure of non-essential businesses, and other travel restrictions to prevent the spread of the disease, several members of the Critical Infrastructure Cross-Sector Council (CSC) expressed concerns about the need to coordinate access to maintain freedom of movement for critical infrastructure workers.¹⁴⁶ In this way, the emergence of the COVID-19 heightened portions of the critical infrastructure community's interest in resolving the access management issue, and stimulated open conversations between government and the private sector regarding access for essential workers. Examining the use of ECIW guidance during the nation's response to the pandemic illustrates the importance of access management during emergencies.

First, as many state officials worked to protect their citizens and local economies from the effects of the pandemic, the publication of the ECIW guidance provided government officials a basis from which to identify essential workers necessary to maintain public health and safety or maintain essential services. Under the constraints of the pandemic, local and national response efforts would be heavily reliant on the continued operation of critical infrastructure systems to ensure local public health and safety, along with national security and economic stability.¹⁴⁷ This realization suggested a significant portion of the private sector workforce would need to continue operating to maintain nationally critical functions—like the provision of communication and transportation

¹⁴⁵ Cybersecurity and Infrastructure Security Agency (CISA), *Guidance on the Essential Critical Infrastructure Workforce: Ensuring Community and National Resilience in COVID-19 Response* (Washington, DC: Government Printing Office, 2020), 1–3, https://www.cisa.gov/sites/default/files/publications/Version_4.0_CISA_Guidance_on_Essential_Critical_Infrastructure_Workers_FINAL%20AUG%2018v3.pdf.

¹⁴⁶ Pat Murthy, personal communication, March 27, 2020.

¹⁴⁷ Christopher Krebs, “Advisory Memorandum on Identification of Essential Critical Infrastructure Workers During COVID-19 Response” (official memorandum, Washington, DC: Cybersecurity and Infrastructure Security Agency, 2020), https://www.cisa.gov/sites/default/files/publications/Version_4.0_CISA_Guidance_on_Essential_Critical_Infrastructure_Workers_FINAL%20AUG%2018v3.pdf.

networks; electrical and energy distribution systems; hospitals and medical facilities; agriculture and food supply chains; and other essential services. However, disparities in the various state issued stay-at-home or safer-at-home orders and *The President's Coronavirus Guidelines for America* created uncertainty among critical infrastructure owners and operators and government officials alike.¹⁴⁸ How would these orders affect critical infrastructure workers? How should these directives be enforced? The president's guidance specified that critical infrastructure workers had a "special responsibility to maintain [their] normal work schedule," while many state's orders closed businesses, limited the number of workers per worksite, or included self-quarantine requirements if traveling from certain areas of the country.¹⁴⁹ Although these types of restrictions left the applicability of state directives to critical infrastructure workers in doubt, the ECIW guidance provided government officials a point of reference for determining critical essential workers. To this end, the majority of states—like California, which was the first state to issue a stay-at-home order—adopted use of the ECIW guidance as an ad hoc element of access management.¹⁵⁰

Second, under the general COVID-19 response effort, the national perception of which industries, along with their respective workers, that should be considered as essential expanded. Historically, the *National Infrastructure Protection Plan* (NIPP) has encouraged emergency preparedness planning to mitigate consequences related to disruption of four primary "lifeline functions" due to their operational interdependencies with most critical infrastructure sectors.¹⁵¹ These lifeline functions include communications, energy, transportation, and water. Consequently, prior to the pandemic, portions of the incident management community often concerned themselves with a limited number of private

¹⁴⁸ Sarah Mervosh, Denise Lu, and Vanessa Swales, "See Which States and Cities Have Told Residents to Stay at Home," *New York Times*, last modified April 20, 2020, <https://www.nytimes.com/interactive/2020/us/coronavirus-stay-at-home-order.html>; "The President's Coronavirus Guidelines for America," The White House, March 16, 2020, https://www.whitehouse.gov/wp-content/uploads/2020/03/03.16.20_coronavirus-guidance_8.5x11_315PM.pdf.

¹⁴⁹ The White House, "The President's Coronavirus Guidelines for America," 2; Mervosh, Lu, and Swales, "See Which States."

¹⁵⁰ Mervosh, Lu, and Swales, "See Which States;" Exec. Order No. N-33-20, 1 (2020), <https://covid19.ca.gov/img/Executive-Order-N-33-20.pdf>.

¹⁵¹ DHS, *National Infrastructure Protection Plan (NIPP) 2013*, 17.

sector industries regarding access management. However, during COVID-19 both the public and private sectors' perception of who should be considered a critical essential worker needed to expand. Suddenly, workers in multiple industries traditionally considered nonessential during emergencies were deemed essential to the health and welfare of the public. For example, grocery stores employees, mental health professionals, and financial services personnel are a few representative occupations that were newly categorized as essential.¹⁵² In addition, many standard and just-in-time supply chain related service providers that support businesses like big-box retailers, commercial manufacturers, and the pharmaceutical industry were designated as essential workers.¹⁵³ In this way, the ECIW guidance increased awareness regarding access management by altering the perception of which workers may need to be considered as essential during a given emergency.

Lastly, the ECIW guidance directly advocated for consideration of historic private sector post-disaster access-related challenges. As part of its recommendations to government, the ECIW guidance expressed the need for critical infrastructure workers to have continued access to facilities and specialized equipment during emergencies that may be located within a designated restricted area or emergency zone.¹⁵⁴ The guidance additionally offered for consideration that critical essential workers may need to continue operating outside of designated curfew restrictions to perform community relief and stabilization activities. The guidance also suggested government officials consider implementing access and movement policies that reduce transit restrictions when operating across cross-jurisdictional lines. Each of these recommendations apply to common post-disaster access-related challenges and the overall concept of access management.

In summary, a gap exists in U.S. incident management doctrine regarding the concept of access management. Although the need for access management is implied in several key incident management documents, the collective federal guidance is disjointed

¹⁵² CISA, *Guidance on the Essential Critical Infrastructure Workforce*, 1–20.

¹⁵³ “What Are Some Examples of Just-In-Time Inventory Processes?” Investopedia, May 15, 2020, <https://www.investopedia.com/ask/answers/051215/what-are-some-examples-just-time-jit-inventory-processes.asp>.

¹⁵⁴ CISA, *Guidance on the Essential Critical Infrastructure Workforce*, 5–6.

and does not adequately address the topic. Though recent changes to the NRF focus on enhancing integration of the private sector into disaster response efforts, neither national response or recovery framework recommends a common process for managing access during emergencies. In comparison, both the CERRA Framework and ECIW guidance supplement existing incident management doctrine by offering complementary means to address private sector post-disaster access-related challenges. Yet neither the use of the CERRA Framework nor the application of the ECIW guidance have been fully adopted as U.S. incident management practices. This lack of continuity in U.S. incident management policy and practices presents a persistent hurdle to the concept of access management.

E. CONCLUSION

Federal incident management policy and guidance—though disjointed in reference to the concept of access management—has been helpful in assisting state and local jurisdictions to address some post-disaster access-related challenges. Historically, federal guidance—primarily through suggested use of the NIMS Guideline—has promoted use of standardized credentialing or secure badging as a means to control access during emergencies. However, as mentioned in Chapter III, local access-related credentialing programs often do not extend to public or private sector emergency response personnel traveling from outside the incident affected area. Moreover, the governing policy documents and structural frameworks that delineate the U.S. strategic approach to incident management—like the NIPP, NRF and NDRF—have traditionally provided limited insight regarding how to effectively conduct access management in support of response and recovery activities. Consequently, few states have developed statewide access programs, as depicted in Figure 3, as part of their all-hazards emergency preparedness plan. However, recent changes to the NRF present an opportunity to capitalize on the access management concepts outlined in the CERRA Framework by advocating for more effective coordination with and integration of private sector capabilities into disaster response efforts. Going forward, future national incident management operations may benefit from tailored use of the ECIW guidance. To this end, increased use of state access programs may have a positive impact on U.S. incident management practices by acting as a cohesive element between the concept of access management and the expanded principles outlined in the NRF and ECIW guidance.

V. VALUE OF STATE ACCESS PROGRAMS

A. CLOSING THE GAP

Private sector owners and operators are responsible for the stabilization of their respective critical infrastructure systems and networks during both normal operations and emergencies. However, as discussed in Chapter III, following—or even during—an emergency, obtaining access may become both a priority as well as a challenge for private sector entities. Some government officials and critical infrastructure coordinating councils support the implementation of statewide access programs as a key component for enabling the effective integration of private sector response capabilities into state and local disaster response and recovery operations.¹⁵⁵ As discussed in Chapter IV, some states and local jurisdictions have established formal access programs. Although these programs may be titled differently, they all highlight the importance of coordinating local access for private sector partners to enable community recovery. In this way, whether categorized as a “private sector re-entry program,” “emergency partner credentialing system,” or simply as an “emergency access program,” the intent is largely the same—to facilitate public-private partnerships to effectively mitigate the effects from a disaster.¹⁵⁶ These varying approaches to access management align with the fundamental tenets of U.S. incident management doctrine.

Additionally, access programs would seemingly bolster federal incident management guidance regarding the need to stabilize community lifelines following a disaster. Recent changes to the *National Response Framework* (NRF) advocate for the “prioritized stabilization of community lifelines” as a foundational component of incident response.¹⁵⁷ Furthermore, the NRF emphasizes the importance of public-private partnerships to achieve this stabilization. However, as examined in Chapter IV, a gap in U.S. incident management doctrine persists concerning the concept of access management.

¹⁵⁵ CISA, “CERRA Framework,” Executive Summary.

¹⁵⁶ Healthcare Ready, *Access Denied*, Appendix A.

¹⁵⁷ FEMA, *National Response Framework*, 8.

This gap detracts from the stated value proposition between government and critical infrastructure stakeholders, as articulated in the *National Infrastructure Protection Plan*: namely, the preservation of public safety and national security through the protection and strengthening of critical infrastructure.¹⁵⁸ This chapter examines the use and benefits associated with access programs, as well as some of the challenges with implementing statewide programs. Additionally, an analysis of the evolving role of the private sector during emergencies was conducted to assess how access programs can assist in reducing current gaps in U.S. incident management doctrine by adding to the value proposition concerned with the protection of critical infrastructure.

B. THE EVOLVING ROLE OF THE PRIVATE SECTOR DURING EMERGENCIES

Governmental attitudes concerning the role of the private sector during emergencies have evolved through awareness and recognition of the value of public-private partnerships. In U.S. incident management, the application of public-private partnerships has helped define the private sector's role during large-scale emergency response efforts. A public-private partnership may be defined as "a collaboration between a public sector (government) entity and a private sector (for-profit) entity to achieve a specific goal or set of objectives."¹⁵⁹ One of the first instances of a public-private partnership between the federal government and the private sector occurred in 1803, following a disastrous fire in Portsmouth, New Hampshire.¹⁶⁰ In working together to provide emergency relief to the community, this event marks an early use of public-private cooperation to aid in disaster recovery. However, throughout much of the nineteenth century, an emphasis was placed on public-private partnerships between state and local governments and the private

¹⁵⁸ DHS, *National Infrastructure Protection Plan (NIPP) 2013*, 1; DHS, *National Infrastructure Protection Plan: Partnering to Enhance Protection and Resiliency*, 10.

¹⁵⁹ Nathan E. Busch and Austen D. Givens, "Public-Private Partnerships in Homeland Security Opportunities and Challenges," *Homeland Security Affairs Journal* 8, no. 18 (October 2012): 1–24. <https://www.hsaj.org/articles/233>.

¹⁶⁰ Busch and Givens, "Public-Private Partnerships," 2; "History of Federal Domestic Disaster Aid before the Civil War," Suburban Emergency Management Project, July 24, 2006, 2, <https://www.hsdsl.org/?view&did=772487>.

sector.¹⁶¹ This emphasis reflected the laissez-faire attitude that at the time dominated American society, which discouraged federal intervention.¹⁶² Consequently, people saw disaster response and recovery activities as the responsibility of state and local governments, along with those elements of the private sector affected by the disaster.

During the twentieth century, the severity of large-scale disasters like the 1906 San Francisco Earthquake and 1927 Great Mississippi Flood spurred an increase in collaboration between the federal government and private industry. The federal government created these public-private partnerships to assist in gathering the necessary resources to facilitate recovery efforts. The application of these partnerships marked the beginning of a change in U.S. incident management doctrine, as the federal government began assuming the responsibility for coordination of recovery efforts following major disasters. For example, in response to the 1906 San Francisco Earthquake, the federal government undertook a substantial role in the disaster relief efforts by appropriating some direct funding for the relief effort, mobilizing the Army to assist the local police and fire departments, and appointing the American Red Cross to lead the overall relief and recovery operation.¹⁶³ During the 1927 Great Mississippi Flood, the federal government headed a quasi-government Flood Commission that used public-private partnerships to affect recovery efforts.¹⁶⁴ The creation of the Federal Emergency Management Agency (FEMA) in 1979, along with the consolidation of several federal disaster management functions under one agency, further substantiated the federal model for national disaster management and its use of public-private partnerships.¹⁶⁵ Thus, up until the early 2000s, during national emergencies, the private sector's role largely supported federally coordinated response and recovery efforts. However, this role would significantly change.

¹⁶¹ Busch and Givens, 2.

¹⁶² Elizabeth Witham and Steve Bowen, *Financing Recovery from Catastrophic Events: Final Report* (Washington, DC: Homeland Security Studies and Analysis Institute, 2007), 6, <https://www.hsdl.org/?view&did=474113>.

¹⁶³ Witham and Bowen, *Financing Recovery from Catastrophic Events*, 27–33

¹⁶⁴ Witham and Bowen, 36.

¹⁶⁵ Federal Emergency Management Agency (FEMA), *Publication 1* (Washington, DC: Government Printing Office, 2019), 17–18, https://www.fema.gov/sites/default/files/2020-03/publication-one_english_2019.pdf.

Several major disasters during the early 2000s broadened the private sector's role in national incident management. Prior to 1997, national concerns regarding the protection of critical infrastructure primarily focused on preventing negative commercial impacts to the U.S. economy; however, the attacks on September 11, 2001, expanded this focus to include national security implications.¹⁶⁶ For example, in the aftermath of the 9/11 attacks, Congress enacted the USA Patriot Act of 2001 which defined U.S. critical infrastructure.¹⁶⁷ In addition, the passage of the Homeland Security Act of 2002 established the Department of Homeland Security and designated infrastructure protection as one of the Department's primary responsibilities.¹⁶⁸ Subsequently, the whole community response needed during national disasters like Hurricane Katrina (2005) and the Deepwater Horizon oil spill (2010) precipitated the necessity for an increasingly integrated role for the private sector in homeland security.¹⁶⁹ For example, within days following Hurricane Katrina, the national response effort was bolstered through corporate initiative. Wal-Mart employed its sophisticated supply chain and proficiency in logistics to distribute relief supplies to thousands of residents and evacuees throughout the Gulf Coast region at a level that was beyond the government's capabilities.¹⁷⁰ Similarly, response efforts to the Deepwater Horizon disaster required close coordination between numerous federal agencies and large portions of the private sector. In particular, the government had to rely on the private sector to supply the necessary technical expertise and equipment to assess the damage, stop the flow of oil, and facilitate cleanup efforts.¹⁷¹ The private sector's contributions to national emergencies like these examples and subsequent disasters have assisted in changing

¹⁶⁶ Busch and Givens, "Realizing the Promise of Public-Private Partnerships," 40.

¹⁶⁷ USA Patriot Act of 2001 §1016(e).

¹⁶⁸ Homeland Security Act of 2002, Public Law 107-296, U.S. Statutes at Large 116 (2002): 2142–50, <https://www.dhs.gov/homeland-security-act-2002>.

¹⁶⁹ Busch and Givens, "Public-Private Partnerships in Homeland Security Opportunities and Challenges," 3.

¹⁷⁰ Michael Barbaro and Justin Gillis, "Wal-Mart at Forefront of Hurricane Relief," *Washington Post*, September 6, 2005, <https://www.washingtonpost.com/wp-dyn/content/article/2005/09/05/AR2005090501598.html>.

¹⁷¹ Busch and Givens, "Public-Private Partnerships in Homeland Security Opportunities and Challenges," 3.

governmental attitudes concerning its role in U.S. incident management, as well as the broader homeland security enterprise.

In summary, the use of public-private partnerships has become an integral component of U.S. incident management doctrine and the protection of critical infrastructure. This reliance on public-private coordination has evolved the role of the private sector from supportive to essential during natural disasters and other large-scale emergencies. Although the direct benefits of public-private partnerships are easy to recognize for government at all levels, it can be difficult for government to articulate the benefits of partnership to the private sector.¹⁷² In terms of access management, as discussed in Chapter III, use of formal access programs have shown to be useful in mitigating common post-disaster access challenges. In addition, access programs could bridge the gap in national incident management guidance regarding access management by enhancing state and local preparedness planning in support of community lifeline stabilization. In this way, access programs may provide a tangible means to strengthen public-private partnerships by accounting for private sector access considerations, while adding to the overall value proposition.

C. BENEFITS OF AN ACCESS PROGRAM

As examined throughout this discourse, managing access is both an emergency response and recovery issue for government officials and private sector stakeholders. Although facilitating private sector access following an emergency has been a continual challenge, a recognition of “the critical nature of this issue” has grown at all levels of government and within the critical infrastructure community.¹⁷³ Implementation of statewide access programs has been suggested by some members of the critical infrastructure community as a potential solution to assist with resolving this challenge.¹⁷⁴ As discussed in Chapter III, multiple approaches have been employed at the state and local

¹⁷² DHS, *National Infrastructure Protection Plan: National Infrastructure Protection Plan: Partnering to Enhance Protection and Resiliency*, 10.

¹⁷³ Healthcare Ready, *Access Denied*, 1.

¹⁷⁴ DHS, *Crisis Event Response and Recovery Access*, 2.

level to manage access; many of which use an access program as part of their underlying approach. This section will consider some of the primary benefits associated with implementation of an access program.

From analysis of the common access-related challenges identified in Chapter III, it can be inferred that well-defined, locally administered, access programs can overcome many of the access-related challenges and limitations experienced during past disasters. The 2016 *Access Denied* report conducted by Healthcare Ready cited several benefits regarding the use of access programs. The report emphasized that access programs can improve incident management coordination between the government and private sector—both before and during disasters.¹⁷⁵ Similarly, a 2019 review conducted by the DHS Cybersecurity and Infrastructure Agency (CISA) concluded that access programs enable state and local governments to establish “pre-incident access and re-entry coordination processes and procedures,” which can improve operational efficiency and reduce the overall cost of recovery.¹⁷⁶ CISA further concluded that the access program developmental process can provide government officials a better understanding of local and regional private sector partners’ response capabilities, access requirements, and capacity to restore community lifelines and essential public services. In this sense, access programs can strengthen public-private coordination through a mutual understanding of how access will be managed during an emergency. Table 3 summarizes the findings detailed in these two reports in terms of the derived benefits of incorporating the use of an access program in contrast to common post-disaster access-related challenges, potential operational inefficiencies, and detriments to mission success.

¹⁷⁵ Healthcare Ready, *Access Denied*, 11.

¹⁷⁶ CISA, *Enhancing Post-disaster Access for Restoration of Community*, 8.

Table 3. Summary of Benefits Associated with Access Programs¹⁷⁷

Derived Benefit	Potential Operational Inefficiency or Detriment to Mission Success
Improves coordination with private sector stakeholders before and during a disaster	• Private sector response capabilities not effectively integrated into incident management operations or planning • Reduction in operational efficiency • Increase cost of recovery
Enables government officials, law enforcement, and Emergency Managers opportunity to predefine access management rules and requirements	• Private sector unaware how to request access and/or access requirements • Ad hoc access management solution may be inefficient or require time consuming clarification • Ad hoc access management solution not well publicized or understood by private sector
Standardizes access & re-entry procedures before an incident	• Local officials and law enforcement may be unfamiliar with access management best practices • Law enforcement and checkpoint personnel unfamiliar with access approval process • Response and recovery activities may be delayed until policies are put in place
Enables state and local authorities to maintain control of access, while conducting incident management operations	• Response and restoration priorities may not be well understood by private sector and other incident management stakeholders • May increase hazard to community or first responders (e.g., presence of unauthorized individuals or unqualified personnel in incident affected area) • May create confusion among all incident stakeholders regarding who has authority to grant access • May delay transit of essential goods or services across jurisdictional lines
Enables coordination of private sector response and recovery assets through phased re-entry process	• Government officials unaware of private sector response capabilities and access needs • Response and restoration priorities may not be well understood by private sector stakeholders • Critical infrastructure owners/operators unable to conduct initial damage assessments, make immediate repairs or conduct stabilization activities

¹⁷⁷ Adapted from Healthcare Ready, *Access Denied*, 11–17, 2016; CISA, *Enhancing Post-disaster Access for Restoration of Community*, 7–8, 2019.

Derived Benefit	Potential Operational Inefficiency or Detriment to Mission Success
Provides a means for law enforcement/checkpoint personnel to verify access approval	• Private sector response assets may be delayed or denied access • Law enforcement/checkpoint personnel unaware of overall response and/or recovery plan • Access approval not coordinated with Emergency Manager
Emergency Manager maintains government-run database of approved program participants	• Approval for access may require vetting of each individual requestor's identity, qualifications, organizational affiliation, and need for access • Use of just-in-time access approval process can overburden local officials or Emergency Manager during period of crisis
Reduce need for just-in-time/immediate access approvals	• Access request vetting process can be time consuming and labor intensive • Government officials can become overwhelmed by volume of access requests
May be integrated into existing All-hazards Emergency Operations Plans or incident management coordination structures (e.g., BEOC, EOC, ESF)	• Private sector capabilities not effectively integrated into response and recovery operations • Inefficient use of public-private partnerships
Increases or maintains public confidence in government	• Decrease of public confidence in government • Reduction in tax base
Compatible for range of incidents and events (large/small)	• Reliance on ad hoc access management solutions • Reduced capacity to scale response efforts

One primary benefit is that access programs can streamline jurisdictional access approval processes. The Healthcare Ready report suggested that jurisdictions with model programs benefit from encouraging advanced registration of private sector participants.¹⁷⁸ Advanced registration provides government officials awareness of which private sector entities might require access and for what purpose. Additionally, advance registration enables the vetting of program participants in terms of verifying their identity; company or organizational affiliation; required qualifications or certifications; liability coverage; and anticipated need for access. In general, the vetting process can be time consuming and labor intensive, which may distract personnel from other emergency management responsibilities.¹⁷⁹ Typically once vetted, program participants are tracked via a government-run system managed by the state Emergency Management Agency.¹⁸⁰ Consequently, advanced registration alleviates the need to maintain informal relationships to gain access and reduces the burden of conducting just-in-time access approvals. In this way, advance registration lessens the time, effort, and personnel required to approve access, without unduly drawing attention away from incident management operations.

Another benefit associated with access programs is enabling state and local authorities to maintain control of access, while coordinating the flow of needed private sector response and recovery resources. A phased re-entry process can be used to align response and recovery assets into functional groupings (e.g., first responders, utility crews, damage assessment teams, etc.).¹⁸¹ These groupings can assist emergency managers in coordinating response and restoration activities with private sector partners. Figure 5 illustrates an example of a phased re-entry process using access levels. Local authorities (e.g., state or local Emergency Manager) define access levels used to grant access and manage re-entry of each functional group based on incident management priorities, safety concerns, or site conditions.¹⁸² For example, private sector utility crews may be placed

¹⁷⁸ Healthcare Ready, *Access Denied*, 11.

¹⁷⁹ Jim Byrne, personal communication, December 6, 2016.

¹⁸⁰ Healthcare Ready, *Access Denied*, 11–12.

¹⁸¹ DHS, *Crisis Event Response and Recovery Access*, 5–6.

¹⁸² DHS, 5.

within access level 1 (AL-1; see Figure 5) to assist with immediate restoration of critical services (e.g., restore electricity, communication networks, water systems, etc.) to enable emergency response operations, or alternatively placed under a lower priority access level (e.g., AL-2 or AL-3) to assist with stabilization or recovery activities. Another method of conducting phased re-entry is to categorize private sector assets according to the service they provide (e.g., life enabling goods and services, public health and safety, or economic stability).¹⁸³ In this way, access programs enable state and local authorities to control access and enhance public-private coordination by providing private sector stakeholders a reasonable expectation of how or when access will be granted, through the use of functional groupings and a phased re-entry scheme, as exemplified in Figure 5.

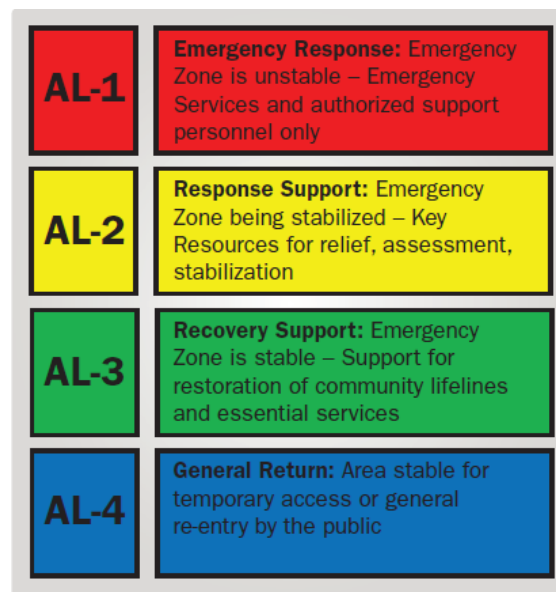


Figure 5. Example of Phased Re-entry Process with Access Levels.¹⁸⁴

Another benefit of access programs is their easy integration into a state or local jurisdiction’s all-hazards Emergency Operations Plan or existing incident management coordination structures (e.g., BEOC, EOC, ESF). For example, Florida integrates use of its *Private Sector Re-entry Program* with the state’s ESF-18 and a virtual BEOC during

¹⁸³ Healthcare Ready, *Access Denied*, 39.

¹⁸⁴ Source: DHS, *Crisis Event Response and Recovery Access*, 6.

emergencies.¹⁸⁵ Alternatively, the city of Chicago uses its *Business Area Recovery Access Program* in coordination with local law enforcement and its state’s virtual BEOC to manage private sector access requests to work facilities within restricted areas.¹⁸⁶ In addition, as in the case of Chicago, emergency management officials can track personnel who have been granted entry to the restricted area via WebEOC. WebEOC is a secure web-based crisis management system used by many states and federal agencies during emergencies to coordinate incident management response efforts.¹⁸⁷ Thus, use of an access program can augment a state or local jurisdiction’s emergency preparedness planning and execution by integrating into existing incident management plans and coordinating structures.

In summary, use of an access program can encompass a range of benefits, which improve emergency preparedness and operational efficiency. Access programs can be tailored to meet a state or jurisdiction’s needs and increase government official’s awareness of private sector capabilities. Web-based systems—like WebEOC—can provide a secure platform to administer access programs, participant registration, and access notifications. Some access programs use specialized software and mobile applications to issue electronic access tokens (e.g., via vehicle placards, identifying credentials, or QR access codes), track responding assets, and verify access approval.¹⁸⁸ The tracking of responding assets upon entering and exiting restricted areas can assist state officials with federal disaster reimbursement processes. Additionally, the ability to quickly verify an individual’s access approval status or qualifying credentials can reduce the uncertainty of checkpoint personnel and increase the safety of first responders. The presence of unauthorized individuals or unqualified personnel (e.g., good Samaritans conducting search and rescue activities) within the restricted area can increase the hazard to law enforcement and search and rescue personnel.¹⁸⁹ In this sense, access programs can assist authorities with better emergency

¹⁸⁵ Florida Division of Emergency Management, “Statewide Private Sector Re-Entry Program.”

¹⁸⁶ Healthcare Ready, *Access Denied*, 48.

¹⁸⁷ “WEBEOC,” Environmental Protection Agency, accessed July 25, 2020, <https://response.epa.gov/main/webeoc.aspx>.

¹⁸⁸ Healthcare Ready, *Access Denied*, 16.

¹⁸⁹ DHS, *Crisis Event Response and Recovery Access*, 11.

response planning and execution, management and control of access, enhance public-private sector coordination, and integration of private sector resources into incident management operations.

D. IMPLEMENTATION CHALLENGES

Although access programs offer several advantages to improving public-private coordination in support of disaster response efforts, some challenges have prevented greater implementation of statewide access programs. One such challenge concerns the level of authority granted by state constitutions or statutes to local governments (e.g., cities, counties, parishes, etc.). The United States Constitution does not address the authority of local governments.¹⁹⁰ However, the Tenth Amendment reserves all other powers not previously delegated or prohibited by the Constitution “to the states or the people.”¹⁹¹ Hence, states rely on two guiding principles of governance in relationship to granting authorities to local governments: the Dillion Rule and Home Rule.¹⁹² Under the Dillion Rule, local governments act as an extension of the state government and only have the authority to exercise powers granted by the state.¹⁹³ Alternatively, Home Rule grants local governments varying levels of authority, depending on a state’s constitution or statutes, which prevent the state government from intervening or infringing upon a local government’s implied “realm of authority.”¹⁹⁴ As of 2016, 44 states had adopted use of Home Rule in some capacity, with 31 states applying a combination of both rules to local jurisdictions.¹⁹⁵ Figure 6 depicts 32 states that provide for Home Rule in their Constitutions either through enabling legislation or allow local governments to self-execute Home Rule

¹⁹⁰ “Cities 101—Delegation of Power,” National League of Cities, accessed July 26, 2020, <https://www.nlc.org/resource/cities-101-delegation-of-power>.

¹⁹¹ “Tenth Amendment,” United States Congress, accessed July 26, 2020, <https://constitution.congress.gov/constitution/amendment-10/>.

¹⁹² Nebraska Legislature Research Office, *Dillion Rule and Home Rule: Principles of Local Governance* (Lincoln, NE: Legislature Research Office, 2020), 1, https://nebraskalegislature.gov/pdf/reports/research/snapshot_localgov_2020.pdf.

¹⁹³ Nebraska Legislature Research Office, *Dillion Rule and Home Rule*.

¹⁹⁴ Jon D. Russell et al., *Federalism, Dillion Rule and Home Rule* (Arlington, VA: American City County Exchange, 2016) 6, <https://www.alec.org/app/uploads/2016/01/2016-ACCE-White-Paper-Dillon-House-Rule-Final.pdf>.

¹⁹⁵ Russell et al., *Federalism, Dillion Rule and Home Rule*, 6–8.

authorities without additional action from their State Legislature; whereas, Figure 7 depicts eight states that provide for Home Rule through legislative statute.¹⁹⁶ In addition, four states—like the State of Maryland—use charters to grant local governments Home Rule authorities.¹⁹⁷ Although these four states are not highlighted in Figures 6 or 7, the figures help to illustrate in which states the use of Home Rule is applied. In terms of access management, the 2016 Healthcare Ready report concluded that the limited number of existing statewide access programs can be attributed to the number of Home Rule states.¹⁹⁸ In this sense, a state’s ability to implement a statewide access program may be limited by the amount of autonomy granted to local governments, which may choose not to adopt or comply with the rules and requirements associated with the state’s access program.

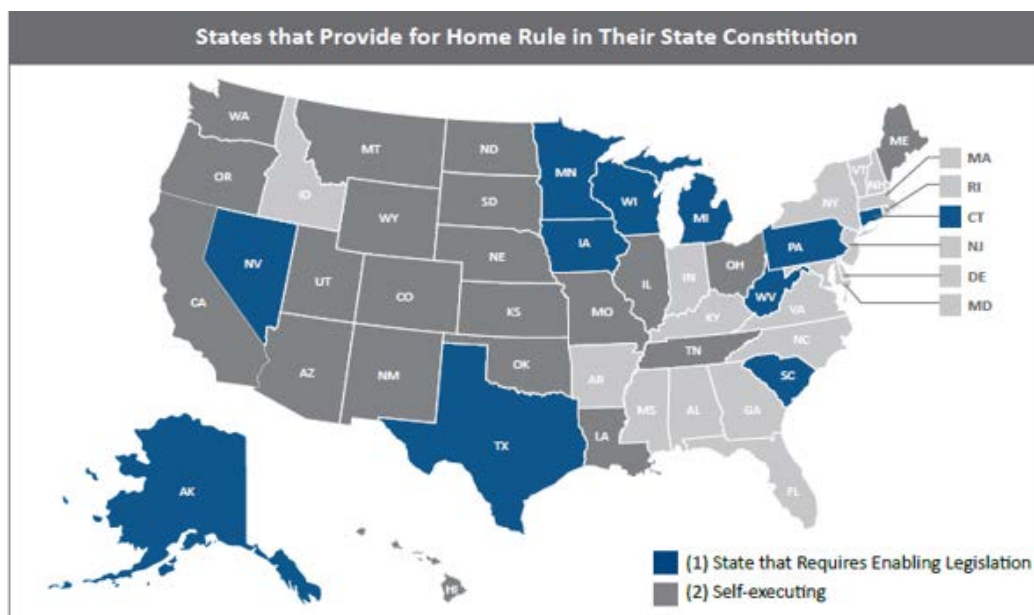


Figure 6. Summary of States that Provide for Home Rule through Their Constitution.¹⁹⁹

¹⁹⁶ Russell et al., *Federalism, Dillon Rule and Home Rule*, 7.

¹⁹⁷ Matthew Sellers et al., *County Authority: A State by State Report* (Washington, DC: National Association of Counties, 2010), 81, <http://www.nvnaco.org/wp-content/uploads/County-Authority-a-State-by-State-Report.pdf>.

¹⁹⁸ Healthcare Ready, *Access Denied*, 12.

¹⁹⁹ Source: Russell et al., *Federalism, Dillon Rule and Home Rule*, 7.

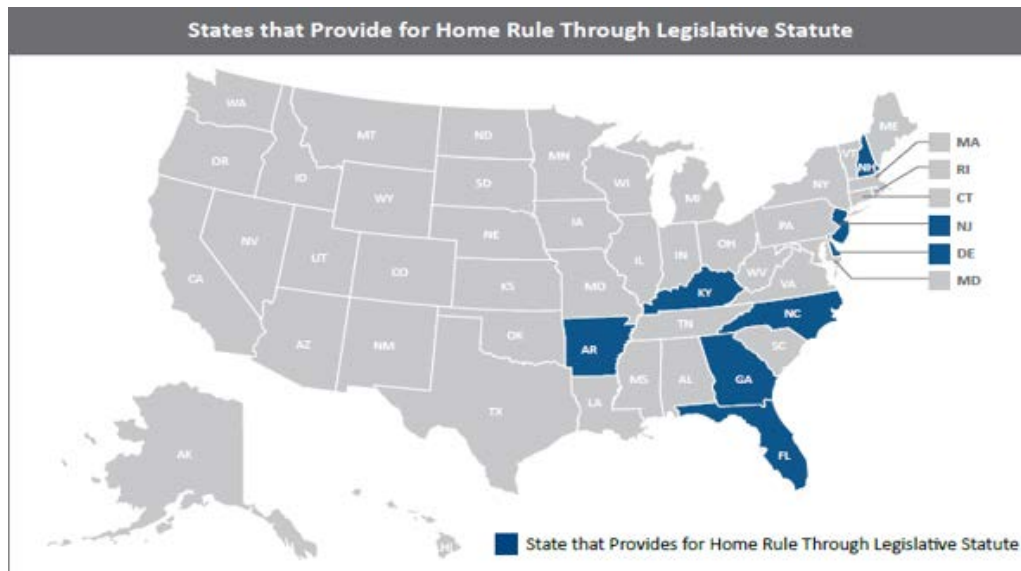


Figure 7. Summary of States that Provide for Home Rule through Legislative Statute²⁰⁰

Another consideration is which entity should fund the development and implementation of access programs. As managing access is a state and local responsibility—that is not a federal responsibility—the cost burden may be assumed to fall on the state.²⁰¹ With limited budgets, states may not wish to take on any additional program operating and management funding requirements. However, some states (e.g., Louisiana and Mississippi) use a self-funding business model, in coordination with a third-party private sector access enrollment provider, to support their access programs by passing on operating costs as enrollment fees to private sector participants.²⁰² However, private sector stakeholders may be opposed to paying for access during an emergency. From an incident management perspective, private sector resources are not only essential for restoring a community’s critical infrastructure, but also frequently provide essential resources, response capabilities, and technical expertise to supplement government efforts. For example, some types of resources and assistance that historically have been provided include use of private sector storage facilities, parking lots as staging areas, portable

²⁰⁰ Source: Russell et al., 7.

²⁰¹ Fairchild, Colgrove, and Jones, “The Challenge of Mandatory Evacuation.”

²⁰² Jim Byrne, personal communication, February 22, 2017.

communication assets, supply distribution networks, and subject matter expertise.²⁰³ In recognition of this support, the idea of being charged an annual enrollment fee to obtain access during emergencies may not rest well with private sector stakeholders, as well as be detrimental to the concept of public-private partnerships. Thus, the cost of establishing and maintaining an access program may ultimately be the responsibility of the state.

A third challenge concerns the limited number of state-sponsored public-private partnership (PPP) programs and Business Emergency Operations Centers (BEOC). In 2017, the National Emergency Management Association (NEMA) conducted a nationwide survey and found that 24 states had no established PPP program or BEOC capability.²⁰⁴ Figure 8 provides a summary of NEMA's survey results and alludes to state-level capabilities.²⁰⁵ In reference to building public-private partnerships, NEMA has stated that "public and private sector partners have a shared interest in identifying, prioritizing, and resolving private sector-oriented challenges."²⁰⁶ In turn, NEMA has regarded BEOCs as a method for integrating private sector partners into state emergency management planning and response efforts. Similarly, in 2020 FEMA published BEOC quick-start guidance to support states' COVID-19 mitigation efforts, noting that "a BEOC can provide a consistent integration point for private and public coordination for sustained response and recovery operations."²⁰⁷

²⁰³ James W. Buehler, Ellen A. Whitney, and Ruth L. Berkelman, "Business and Public Health Collaboration for Emergency Preparedness in Georgia: A Case Study," *BMC Public Health* 6, no. 285 (November 2006), <https://doi.org/10.1186/1471-2458-6-285>.

²⁰⁴ NEMA, *Building Operational Public Private Partnerships*, 6.

²⁰⁵ NEMA, 6.

²⁰⁶ NEMA, 20.

²⁰⁷ "BEOC Quick Start Guidance for COVID-19 Response and Recovery," Federal Emergency Management Agency (FEMA), May 22, 2020, https://www.fema.gov/sites/default/files/2020-07/fema_covid_bp_business-emergency-operations-quick-start-guidance.pdf.

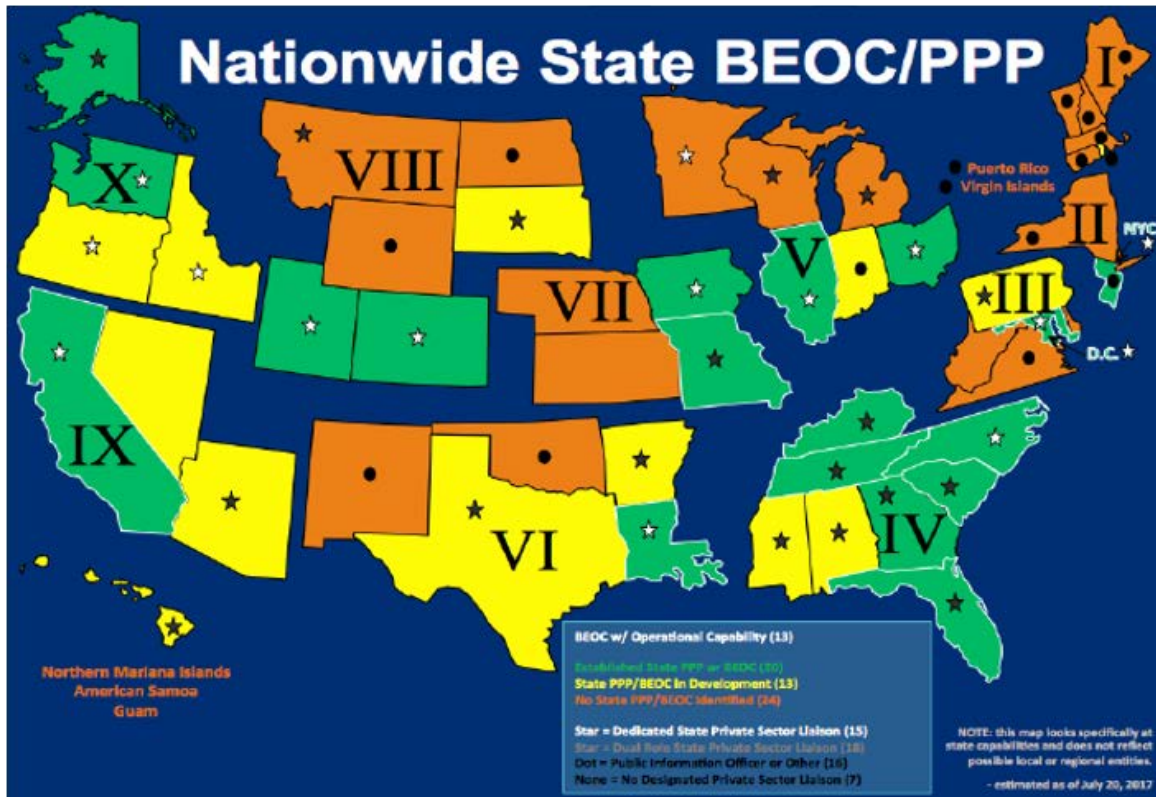


Figure 8. Summary of State Business Emergency Operation Centers and Public Private Partnership Programs²⁰⁸

However, the growth in state-sponsored PPP programs and BEOCs has lagged due to a lack of dedicated resources and funding, as well as guidance regarding how to develop, manage, and optimize use of a BEOC or PPP program.²⁰⁹ This set of obstacles may continue to hinder development of state-sponsored BEOCs and PPP programs.

E. CONCLUSION

Implementation of a statewide access program can encompass a range of benefits, to include improved emergency preparedness, enhanced public-private sector coordination, and increased operational efficiency. In addition, access programs enable state and local governments to coordinate with private sector stakeholders to establish pre-incident access

²⁰⁸ NEMA, *Building Operational Public Private Partnerships*, 6.

²⁰⁹ NEMA, 6.

and re-entry coordination processes and procedures, which can lead to predictable, repeatable, and interoperable methods for access management. Ensuring private sector assets are able to access their facilities and equipment is essential to effective disaster management efforts. Hence, access programs appear to be a practical and efficient method of integrating private sector capabilities into disaster response operations. Despite challenges to implementation—such as the majority of Home Rule states, need for programmatic funding, and a limited number of formal public-private partnership programs—these hurdles do not appear to be insurmountable obstacles. To this end, the elimination of these challenges would assist in closing policy gaps, strengthening public-private partnerships, and delivering on the promise of the value proposition.

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VI. CONCLUSION AND RECOMMENDATIONS

A. CONCLUSION

This thesis examined the concept of access management—specifically, as it relates to integration of the private sector into disaster response and recovery efforts. As noted throughout this discussion, the private sector has become an integral component of the United States’ whole community approach to disaster management. This concept has evolved over time in recognition that both government and the private sector have a shared interest in ensuring the security and resilience of local communities, as well as national critical infrastructure. Moreover, U.S. incident management doctrine is predicated on the value of public-private cooperation to mitigate the devastating effects from natural disasters and other large-scale emergencies. This recognition acknowledges that “no jurisdiction or federal agency has all the staff and resources it will need to respond to a catastrophic incident,” which further emphasizes the key role private sector can play in incident management.²¹⁰ To this end, U.S. incident management policy relies on the effective use of public-private partnerships to achieve outcomes that neither government agencies nor private sector entities could accomplish on their own.

At the onset of this thesis, it was proposed that the development and implementation of interoperable statewide access programs would enable the effective integration of private sector response capabilities into state and local disaster response and recovery operations. To better understand this potential solution, the purpose of an access program was examined, as well as the importance of access management during emergencies. The literature reviewed suggests that the ability for a state or local jurisdiction to control and manage access of key response and recovery resources can be a critical success factor in enabling community recovery—particularly during emergencies that affect multiple jurisdictions or involve significant population evacuations.²¹¹ The research further found that large portions of the critical infrastructure community are often disproportionately

²¹⁰ FEMA, *2017 Hurricane Season FEMA After-Action Report*, iii.

²¹¹ DHS, *Crisis Event Response and Recovery Access*, ii.

affected by the need for access into designated restricted areas or emergency zones following an emergency. Yet, this situation would seem counterintuitive to the vital role private sector plays in stabilizing community lifelines and restoration of essential services. Thus, a key finding of this research revealed that although the United States has a well-defined incident management doctrine, a gap exists in reference to the concept of access management. This gap has historically hindered the ability of government at all levels to effectively integrate broad segments of the private sector into incident management efforts.

Where in use, access programs have been shown to be a practical and efficient method of integrating private sector capabilities into disaster response operations. However, widespread adoption of access programs has not occurred throughout the United States. A key finding revealed that this lack of preparedness planning may be attributed to multiple factors. For example, although portions of the private sector and government alike have recognized the need for access management coordination in support of emergencies, there is no standard or interoperable access management process being used consistently throughout the United States. The desire for a solution has created a mishmash of inconsistent and non-interoperable approaches. This situation, along with inadequate prioritization and a general misunderstanding of private sector access needs, has perpetuated a series of post-disaster access-related challenges. These challenges have affected the efficacy of integrating private sector capabilities—from across all 16 critical infrastructure sectors—into disaster response and recovery operations. Additionally, there appears to be a lack of authoritative guidance regarding how to conduct access management, establish an access program, or optimize use of public-private partnerships.²¹² Federal incident management guidance is disjointed in reference to the concept of access management. Consequently, few states have incorporated access programs into their all-hazards emergency preparedness plans.

As proposed throughout this discourse, managing access is both an emergency response and recovery issue for private sector stakeholders and government officials at all levels. A comparative analysis of the advantages and disadvantages associated with access

²¹² NEMA, *Building Operational Public Private Partnerships*, 6.

programs suggests that their use offers a broad range of benefits to state and local jurisdictions. These benefits include improved incident management coordination with the private sector before, during, and after emergencies; enhanced utilization of private sector response capabilities in support of community lifeline stabilization; and a reduction in the overall cost of recovery. These advantages seemingly outweigh potential impediments to implementation. Thus, implementation of statewide access programs would bolster recent updates to national incident management guidance seeking to expand existing incident management principles to better integrate private sector capabilities into disaster response efforts.

However, the research also suggests that access programs in themselves are not a complete answer to the challenge of effectively integrating the private sector into disaster management efforts, but rather a key component of the whole solution. Another part of the solution may entail use of the Cybersecurity and Infrastructure Security Agency's *Guidance on the Essential Critical Infrastructure Workforce* (or ECIW guidance). Similar to how the catastrophic effects of the 2017 Hurricane and Wildfire Season prompted changes to the *National Response Framework*, the 2019 coronavirus pandemic precipitated development of the ECIW guidance, which increased awareness of common post-disaster access-related challenges, expand the preconceived definition of critical essential workers, and emphasized the need for access management during emergencies. To this end, statewide access programs coupled with the methodology outlined in the *Crisis Event Response and Recovery Access Framework*, effective use of the Cross-Sector Business and Infrastructure Emergency Support Function (i.e., ESF #14), and tailored use of the ECIW guidance may provide the necessary components to mitigate the majority of existing access management challenges.

B. RECOMMENDATIONS

Further development of the following recommendations may encourage more states to implement access programs. These recommendations can build off one another to enhance states' ability to integrate private sector capabilities into disaster management

efforts, improve community resilience, and effectively execute the concept of community lifeline stabilization.

1. Enact Change through Statute

State legislatures should consider enacting statutes to explicitly address the issue of access management and coordination with the private sector following a disaster. Although industry and government officials alike often oppose official mandates, some states have benefited from enacting statutes that directly support the concept of access management. For example, Florida’s Emergency Management statute (Fla. Stat. § 252.359) directed the state’s Division of Emergency Management to develop a statewide system to facilitate the transportation and distribution of critical commodities or required resources for restoration of essential services in support of disaster response and recovery efforts.²¹³ Similarly, South Carolina’s statute (S.C. Stat. § 25–1-445) directed creation of a system to enable reentry of private sector assets transporting critical goods and services, or supporting restoration of utilities or other essential services.²¹⁴ These types of statutes can provide both guidance and direction to state emergency management agencies, regarding required coordination with private sector stakeholders and establishment of formal access programs in support of disaster management efforts. However, few states appear to have implemented such laws. Thus, further enactment of well-defined, access management-related statutes may enhance state and local disaster preparedness through public-private sector coordination and consideration of private sector access and re-entry procedures for varying types of disasters.

2. Expand Existing Number of BEOCs and PPP Programs

Government and private sector partners should consider expanding the existing number of state Business Emergency Operations Centers (BEOC) and formal public-private partnership (PPP) programs. As discussed in Chapter IV, the National Emergency

²¹³ “2019 Florida Statutes,” Florida Senate, accessed August 23, 2020, <https://www.flsenate.gov/Laws/Statutes/2019/252.359>.

²¹⁴ “Title 25—Military, Civil Defense and Veterans Affairs,” South Carolina Legislature, accessed August 23, 2020, <https://www.scstatehouse.gov/code/t25c001.php>.

Management Association has promoted the utility of formal PPP programs and BEOCs in assisting states to improve their incident management planning and coordination with members of the private sector. However, as noted, not all states have an established PPP program or BEOC capability.²¹⁵ In addition, following an open source review of all fifty states' emergency management agency websites, it was difficult to discern the level of capability of existing BEOCs and PPP programs. As the number of PPP programs and BEOCs increase, government and private sector partners should consider devising a minimum level of operating capability. In this way, a well-designed national network of PPP program offices or BEOCs could assist with critical infrastructure cross-sector information sharing, management of private sector access requests, and mitigation of common post-disaster access challenges by directly connecting those who require access with those who grant it.

3. Design Interoperable Access Programs

Senior state government officials should consider designing interoperable access programs. As the number of statewide access programs increase, the need for interoperability will accompany it, too. As discussed in Chapter III, state and local access programs are often not interoperable across jurisdictional lines, and typically do not account for response and recovery assets coming from outside the affected jurisdiction.²¹⁶ This lack of interoperability can lead to confusion among incident management stakeholders, overburden responding private sector assets, and delay restoration efforts. In addition, private sector organizations often must register as participants in multiple state or locally implemented access programs. Ideally, the criteria for granting access should be based on a common process approach. Although various states conduct access management differently, they all tend to rely upon similar attribute-based access control criteria and data sets to grant access approval.²¹⁷ For example, as discussed in Chapter IV, verification of an individual's identity, qualifications, organizational affiliation, and deployment

²¹⁵ NEMA, *Building Operational Public Private Partnerships*, 6.

²¹⁶ Jim Byrne, personal communication, December 6, 2016.

²¹⁷ DHS, *Crisis Event Response and Recovery Access*, 7.

authorization are frequently used by government officials to make the access decision.²¹⁸ The challenge, however, is not only implementing access policies that reduce operating restrictions across cross-jurisdictional lines, but also enabling differing government-run access program databases to recognize program participants.

The National Information Exchange Model (NIEM) may offer a solution to the need for interoperability. NIEM is a community of interest (COI) driven, standards-based approach to exchanging information. The NIEM model provides both the methodology and associated digital platforms to enable a COI to agree upon a common set of data elements and definitions when developing a data information exchange between multiple organizations.²¹⁹ In essence, NIEM provides a reference vocabulary for consistent, reusable information and data exchange independent of how that information is stored in individual systems. In reference to state access programs, the NIEM model could be used to develop a “Clearing House” for the various states’ access control requirements. The Clearing House would integrate the varying access programs’ attribute-based access control criteria and data sets per agreed upon definitions that would be incorporated into NIEM’s reference vocabulary. Per the NIEM’s model, each state would be allotted its own sub-domain within the overall COI domain to enable the data information exchange. In this way, NIEM could be used to achieve the required interoperability between states’ access programs by creating a universal reference vocabulary for consistent, reusable information and data exchange.

4. Increase Program Development through Grant Funding

The federal government should consider modifying federal hazard mitigation, preparedness, or homeland security grant programs to allow for financial assistance in support of access management and PPP capability development. Although access management and the need to increase public-private coordination during emergencies are both recognized challenges, neither activity is eligible for financial assistance under

²¹⁸ FEMA, *National Incident Management System Guideline*, 27.

²¹⁹ “NIEM Model,” National Information Exchange Model, accessed October 20, 2019, <https://www.niem.gov/about-niem/niem-model>.

existing federal grant programs.²²⁰ However, greater capacity in both areas would seemingly support the federal incident management concept of community lifeline stabilization. One avenue to affect this change may be FEMA’s new Building Resilient Infrastructure and Communities (BRIC) grant program, whose guiding principles include “supporting communities through capability- and capacity-building; encouraging and enabling innovation; and promoting partnerships.”²²¹ In this way, states could be encouraged to incorporate access management as part of their all-hazards preparedness planning, improve their PPP capabilities, and develop innovative methods to support communities before, during, and after disasters.

²²⁰ FEMA, “Grants.”

²²¹ “Building Resilient Infrastructure and Communities (BRIC),” Federal Emergency Management Agency (FEMA), accessed August 13, 2020, <https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities>.

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