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THESIS

CHAIN OF EVENTS: MITIGATING ACTIVE SHOOTERS AND HOSTILE EVENTS

by

Robert N. Goplin

September 2022

Co-Advisors:

Lauren S. Fernandez (contractor)
Kathryn J. Aten

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**CHAIN OF EVENTS: MITIGATING ACTIVE SHOOTERS AND HOSTILE
EVENTS**

Robert N. Goplin
Assistant Chief-Operations, Green Bay Metro Fire Department
BAS, University of Wisconsin, Oshkosh, 2010

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September 2022**

Approved by: Lauren S. Fernandez
Co-Advisor

Kathryn J. Aten
Co-Advisor

Erik J. Dahl
Associate Professor, Department of National Security Affairs

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ABSTRACT

Agencies responding to an active shooter/hostile event (ASHE) need to recognize opportunities to capitalize on one another's actions. This thesis answers the research question: What shared action points can law enforcement and fire rescue personnel identify, prior to an incident, to improve response coordination and collaboration? The research included ASHE case analysis, agency policy analysis, and a focus group of law enforcement and fire rescue subject matter experts. I conducted the research through the lens of the recognition primed decision making (RPDM) framework because it specifically relates to decisions made under severe time constraints. The policy analysis showed that agencies expect shared action points to be recognized and acted on. The case analysis found that shared action points similar to those found in policy occur during responses. The focus group participants provided insights into actions expected of responders and actions directed in policy. The subsequent mitigation action chain conceptual model and identified shared action points can be incorporated into a training program to help ensure critical on-scene interactions and improve incident outcomes.

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LIST OF ACRONYMS AND ABBREVIATIONS

AAR	after-action reports
ALERRT	Advanced Law Enforcement Rapid Response Training Center
ASIM	Active Shooter Incident Management
BCSO	Brown County Sheriff's Office
CCP	casualty collection points
EMS	emergency medical services
FBI	Federal Bureau of Investigation
GBMFD	Green Bay Metro Fire Department
GBPD	Green Bay Police Department
IAFC	International Association of Fire Chiefs
ICP	incident command post
ICS	Incident Command System
IPSA	International Public Safety Association
NFPA	National Fire Protection Association
OFD	Orlando Fire Department
OODA Loop	Observation, Orientation, Decision, Action
PSAP	public safety answering points
RPDM	recognition primed decision making
RTF	Rescue Task Force
SME	subject matter experts
SOG	standard operating guidelines
SRO	school resource officer
USFA	United States Fire Administration

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EXECUTIVE SUMMARY

Active shooter/hostile events (ASHE) cause major damage, significant injuries, or death so rapidly that responders may be overwhelmed. Responders must quickly identify the immediate needs, what decisions need to be made, and what actions to take during the initial phase of an ASHE to move the incident from a chaotic phase toward one of order.¹ My observation of stalls, or brief pauses, in action by responders during an ASHE training exercise conducted in the summer of 2021 served as the inspiration for this study. During the exercise, I witnessed responders occasionally stall when they encountered something that should have prompted them to act. The stalls involved law enforcement, fire department, and emergency medical services (EMS) personnel and included situations in which agencies did not respond to the actions of other agencies.

This thesis answers the research question: What shared action points can law enforcement and fire rescue personnel identify, prior to an incident, to improve response coordination and collaboration? Shared action points are recognizable events that occur during an incident. Recognition of these events can enable responders to quickly act on them to establish, maintain, or build momentum.

Due to concurrent and sometimes conflicting response priorities, law enforcement and fire rescue interactions can be challenging during the initial phase of crises. Fire rescue responders coordinate their actions and work in teams to achieve established, common objectives set by a person attempting to consider all aspects of the incident. However, those objectives may not be known to law enforcement responders. By the same token, law enforcement responders work as individuals to accomplish objectives beneficial to the incident but not necessarily known to other police officers or fire rescue responders. For example, law enforcement needs to neutralize the shooter during an active shooter incident, while fire rescue responders prioritize lifesaving treatment and transport of victims.

¹ The author defines the order phase of an incident as occurring when the situation has stabilized to the point that the harm occurring—either to people, property, or the environment—is not growing in magnitude or scope. For example, a fire inside a building is controlled by the fire department. It may not be extinguished, but it is not growing.

However, fire rescue personnel need coordination with, and assistance from, law enforcement to have access to victims. Groups of fire rescue personnel need to be escorted under the protection of groups of police officers to access victims. This course of action requires coordination between fire rescue and law enforcement and the formation of law enforcement groups rather than individual operators.

Responders must quickly identify the immediate needs, what decisions need to be made, and what actions to take during the initial phase of an ASHE to move the incident toward mitigation. No universally understood and shared factors exist between law enforcement and fire rescue responders to trigger action at an ASHE. Knowing what factors support and drive the responders' actions during an ASHE could improve coordination and collaboration, especially early in the incident response. Shared action points between the disciplines would result in common and relevant priorities. Understanding how agencies can build on each other actions would help responders quickly establish common objectives to address the incident's complex and possibly conflicting priorities. Ultimately, improved coordination through shared priorities and objectives should lead to improved victim outcomes.

A. RESEARCH PHASES AND FINDINGS

The research consisted of three phases. In the policy review and analysis phase, I analyzed the policies of three agencies that respond to ASHE incidents in the same county. The case analysis phase examined after-action reports (AAR) of four prominent ASHE responses that occurred in various locations throughout the United States to identify common occurrences that responders could recognize. In the focus group phase, I worked with six subject matter experts (SME) to validate my findings from the previous phases and to provide additional findings and conclusions. The research was conducted through the lens of recognition primed decision making (RPDM). The RPDM framework was used

because it specifically related to decisions made under severe time constraints similar to those encountered during an ASHE.²

1. Policy Analysis

The objective of the policy analysis was to determine what actions in department policies could be considered shared action points. If actions found in a policy would or should cause additional action by another responder or agency, those actions were deemed a shared action point. Additionally, the analysis of current agency policies provided the opportunity to consider whether shared action points found in AARs should be written into policy if they were not already there.

I analyzed each policy to identify eight specific elements relevant to actions taken at an ASHE. As trends appeared during the analysis process, I categorized each policy directive based on the overall reason for the action using categories I developed. I analyzed each policy to determine if certain policy-directed actions could serve as shared action points that responders could be trained to recognize. Finally, I analyzed the interactions found in policy to understand how frequently and in what ways agencies are expected to interact during an ASHE.

2. Policy Analysis Findings

The policy analysis found that several shared action points exist in agency policies. Moreover, individual agency policies call for action to be taken based on the actions of another agency. This finding indicates that agencies expect shared action points to be recognized and acted on. The expectation that shared action points are recognized and acted on demonstrates the importance of identifying them and communicating them to responders to ensure that critical on-scene interactions occur.

² Gary Klein and Beth Crandall, *Recognition-Primed Decision Strategies* (Alexandria, VA: Army Research Institute for the Behavioral and Social Sciences, 1996), 4, <https://apps.dtic.mil/sti/citations/ADA309570>.

3. Case Analysis

The objective of the case analysis was to identify possible shared action points that occur during an actual ASHE. Additionally, I sought to determine if those action points resulted in action by other agencies or responders that positively affected the incident. Identifying shared action points in an actual ASHE is important because they represent real occurrences rather than training events. Once identified, real circumstances that could serve as shared action points can be simulated in training environments to add realism, which may improve decision-making and decrease stall time. Finally, I looked for shared action points that occurred in several cases to find any identifiable trend. Shared action points that occurred in all or most of the cases should be a focal point of future training exercises.

I selected the four ASHEs analyzed for this research for specific reasons. I chose the shootings at the Inland Regional Center in San Bernardino, California; the Harvest Music Festival attack in Las Vegas, Nevada; the Pulse nightclub shooting in Orlando, Florida; and the Marjory Stoneman Douglas High School in Parkland, Florida, because of unique circumstances at each incident. Moreover, the extreme nature of the Harvest Music Festival shooting precipitated a significant policy and operational reaction from the three agencies whose policies were analyzed in this study.

I collected the seven data points from each case concerning the actions taken, who took them, the interactions that occurred, and the results of the actions taken. I hypothesized shared action points based on the actions reported and any corresponding actions that were taken, or because they were recommended in the report. Corresponding actions were also categorized by the person taking them and the response component. The results of the action were documented to the extent possible and categorized as either positive, neutral, or negative. I also analyzed the interactions occurring on scene to identify which agencies or people interacted.

Additionally, I analyzed the policy and case data to understand which response component was most affected by actions taken on an ASHE. I define the “response component” as one of three major response elements to achieve the objectives of the

incident: strategy, tactics, and tasks. The data was also used to compare and contrast the effect of policy-directed actions and on-scene actions on response components.

4. Case Analysis Findings

The case analysis found that shared action points similar to those found in policy occur during ASHE responses. Additionally, I found that if responders recognize the shared action points, they can take further action based on the actions of another agency. The interactions occurring at an ASHE are also important. Understanding where interactions occur will allow for increased understanding of whether actions by one agency or actor drive or influence actions by other agencies or actors. The case analysis also revealed that action taken by one agency or person often results in a corresponding action by someone else. Moreover, I found that when action is initiated by law enforcement during an ASHE, a positive outcome is likely. Finally, I found that an action chain consisting of shared action points exists, which may be useful to ASHE responders.

5. Focus Group Sessions

To validate my research, I asked the SMEs to analyze my case and policy analysis findings and provide feedback as well as any additional findings. During this focus group discussion, SMEs participated in a brainstorming exercise to establish situations that responders should react to at an ASHE incident. In the exercise, focus group participants were asked to respond to the following questions: What stimulus at ASHE incidents should cause a reaction? and What stimulus at ASHE incidents should not cause a reaction?

Focus group SMEs also discussed the driving force concept described by the Advanced Law Enforcement Rapid Response Training Center (ALERRT) as it relates to RPDM.³ Focus group SMEs concluded that ALERRT's driving forces are tightly linked to Klein's RPDM theory.⁴ Based on the focus group's discussion on driving force and its relationship to RPDM, SMEs posited that when a specific driving force is encountered, it

³ Advanced Law Enforcement Rapid Response Training and Federal Bureau of Investigation, *ALERRT Train-the-Trainer: Active Shooter Response Level 1*, Version 7.2 (San Marcos, TX: Texas State University, 2020), INST 4-3.

⁴ Klein and Crandall, *Recognition-Primed Decision Strategies*, 2.

engages the decision-making process by either causing a mental simulation or the recall of an analog as Klein discusses in RPDM theory.⁵

In the focus group discussions, SMEs provided their feedback on my findings. SMEs participated in a second exercise where they were asked to provide expected responses from law enforcement officers and fire rescue/EMS to the stimulus that they provided in the first exercise. Finally, participants engaged in a Force Field analysis exercise to weigh the merits of incorporating RPDM concepts and findings discussed in the focus group in to agency training plans.⁶

6. Focus Group Findings

The focus group discussions gathered valuable insights from agency SMEs. The first focus group discussion generated a list of driving forces that SMEs would expect responders to react to. The second focus group discussion provided a prioritized list of actions that SMEs expected responders would take during an ASHE. Finally, SMEs provided their input on whether the findings of this research should be incorporated into agency training in a scored exercise.

B. SYNTHESIS OF FINDINGS

A key finding of this research is that the outcome of actions taken by an individual may serve as the next driving force during an ASHE response. The outcomes of each action create new “actionable intelligence,” which is how ALERRT describes a driving force.⁷ Following this logic, the outcome serves as the next driving force, but only if it is recognized as such. This process starts with the first driving force encountered and forms an action chain that flows through the incident until it breaks or the incident is mitigated. I refer to this process as the mitigation action chain or mitigation action chain.

⁵ Klein and Crandall, 3.

⁶ Mind Tools Content Team, “Force Field Analysis: Analyzing the Pressures for and against Change,” Mind Tools, accessed May 29, 2022, http://www.mindtools.com/pages/article/newTED_06.htm.

⁷ Advanced Law Enforcement Rapid Response Training and Federal Bureau of Investigation, *ALERRT Train-the Trainer*, INST 2–26.

C. DEVELOPMENT OF A CONCEPTUAL MODEL

As a result of this research, I developed a conceptual model called the mitigation action chain. The mitigation action chain depends on responders recognizing and acting on driving forces encountered during an ASHE (Figure ES-1). In terms of this conceptual model, I refer to the process of recognizing and responding to each driving force as the ASHE recognition process. As this process plays out, it creates a new link in the mitigation action chain. Each individual link in the mitigation action chain is made up of driving forces, processing, actions, and outcomes. The links connect to each other to form the mitigation action chain, which moves the incident toward mitigation. Figure ES-2 shows an example of the mitigation action chain.

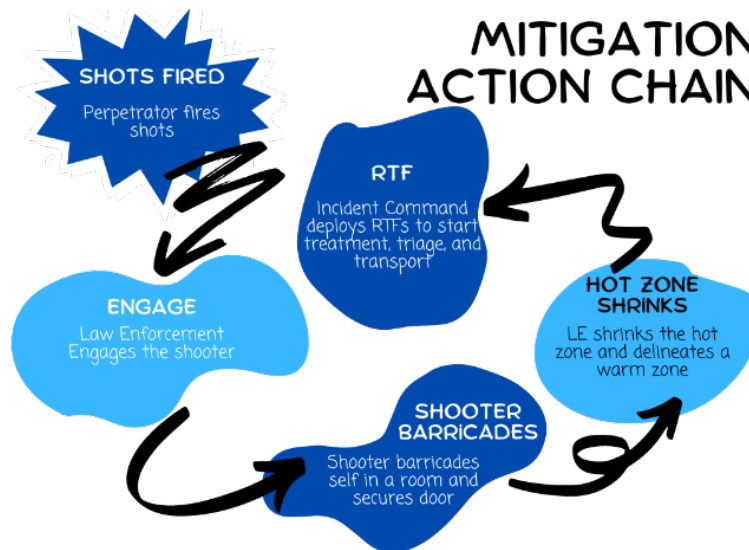


Figure ES-1. Mitigation Action Chain

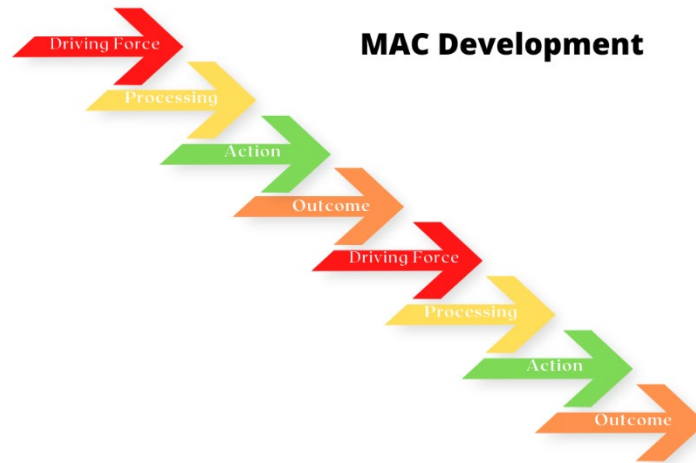


Figure ES-1. Mitigation Action Chain (MAC) Development

The case analysis of the actions taken during actual ASHE responses demonstrated that responders do recognize those points and often respond appropriately to them. In many cases, the actions taken in response to a driving force generated an outcome that served as another driving force. Each of these driving forces and outcomes is a potential shared action point. Each iteration of driving force, processing, action, and outcome—where the outcome serves as a new driving force—causes another action. Every time the ASHE recognition process runs its course, it forms a new link in the mitigation action chain and sets a course toward mitigation of the incident. However, the chain is broken when an action is not taken in response to any single driving force. The fracture of this chain may either slow or completely stop the march toward mitigation.

If responders recognize that outcomes of certain actions provide the opportunity for another action, then each action functions as a shared action point. In turn, as the actions build new mitigation action chain links, they form the mitigation action chain, which leads to the mitigation of the incident. The process is not rigid or linear and may be messy and circuitous, like a chain that is not under tension. The chain may branch out in different directions, all eventually merging at mitigation. Regardless of how the chain forms, if it remains intact, it leads to mitigation. If stalls in decision-making time are reduced or eliminated, the time to mitigation will likely be shortened.

Shared action points are important to responders because they help build or maintain momentum during an ASHE. Shared action points are similar to the tactical benchmarks used in the fire service. Benchmarks serve as an indicator of progress and incident status to all firefighters on the scene.⁸ When the incident commander announces a benchmark over the radio, it signals a transition phase in the incident where different priorities develop and different actions are required. The critical element of benchmarking is the shared understanding of what they mean and what actions are expected in the new phase of the incident.

D. CONCLUSION

This research resulted in 26 shared action points, shown in Table ES-1, that may occur at an ASHE. It could be argued that some shared action points are more critical for positive outcomes than others. Because this research is specific to the agencies involved and not generalizable, researchers would need to establish their own shared action points based on their policies.

To improve response coordination and collaboration, these action points can be incorporated in a cross-discipline training plan that introduces the mitigation action chain conceptual model. The training plan would explain how shared action points can decrease stall time and improve incident outcomes. Training would also explain how the RPDM process, driving forces, and the mitigation action chain are related.

⁸ John Coleman, *Incident Management for the Street-Smart Fire Officer* (Saddle Brook, NJ: Fire Engineering, 1997), 298–99.

Table ES-1. Shared Action Points

An ASHE incident has been dispatched
An ASHE incident is actually occurring
Shots fired by perpetrator
Viable victims are present
A need to increase coordination
Triage area is too close to the hot zone
Rescue/mobility is limited by some condition
Equipment is not working
Equipment is missing
A suspicious object or package is present
A suspected explosive device is present
A responder has critical information
A responder is wounded/injured
A role or function is already filled or completed
A role or function is not already filled or completed
A command role or function is not effective
Learning the perpetrator's location or location changed
The perpetrator is neutralized
Shooting or other mechanism of wounding victims has stopped
The perpetrator is monitoring responder's actions
Communication problems exist
Unprotected personnel are too close to the hot zone
Assuming command
Arriving at an ASHE incident
Transporting a patient to the hospital (LE officer)
Encountering a room of people hiding from perpetrator

LE = law enforcement

Evaluating the criticality of each shared action point could be another area of future research. The findings of such evaluation might help responding agencies focus more intently on these critical points during training exercises. Additional future research could include conducting timed experiments to determine the effectiveness of shared action points during all phases of an ASHE incident.

ASHE responses are complex, chaotic events that require significant coordination between law enforcement and fire rescue responders to ensure the most positive outcome possible for victims. The ASHE recognition process will help responders recognize shared action points that allow responders to build on each other's actions without delay. As responders act in response to driving forces, the mitigation action chain forms a path toward mitigation. Responders trained to recognize shared action points and seize the opportunities they present will likely increase effectiveness during ASHE responses and thereby increase the likelihood of victim survivability.

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I. INTRODUCTION

A. PROBLEM STATEMENT

During active shooter/hostile events (ASHE), law enforcement and fire rescue personnel respond together to mitigate crises.¹ The interaction between these personnel, especially at the initial stages of an incident, can significantly affect the outcome for the victims.² ASHEs happen rapidly and cause major damage, significant injuries, or death so quickly that responders may be overwhelmed. The chaos may also stem from not knowing the cause of the harm. When an incident is caused by a person or group, more chaos results from trying to determine whether that person or group is finished wreaking havoc or if they are moving on to other locations. Until that is known, the police and fire personnel themselves could be at risk of becoming victims of the incident.

Responders struggle to comprehend the sheer scope of an incident. Fractured pieces of information and intelligence will reach responders by various means, including radio, phone, text messages, dispatch computers, and verbal reports. Some information may be accurate, but much of it will be inaccurate or partially accurate. This barrage of information adds to the chaos until it can be filtered and vetted.

A cooperative and collaborative law enforcement and fire rescue response, planned in advance but flexible enough to adapt, is critically important to the safety of the responders, victims or potential victims, and the community's long-term recovery. However, managing chaotic situations is not a simple problem. Although problem-solving theories, concepts, and processes exist, applying them to manage the environment encountered during the onset of an ASHE is challenging. The chaotic nature of these incidents can lead to a loss of coordination because the drive to move on to the next objective is lost in the fog of communication. The circumstances of the incident may be

¹ National Fire Protection Association, *NFPA 3000™: Standard for an Active Shooter/Hostile Event Response (ASHER) Program* (Quincy, MA: National Fire Protection Association, 2021), sec. 1.4, <https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=3000>.

²For the purposes of this paper, the author uses fire rescue to refer to fire *and* Emergency Medical Services (EMS) personnel, including emergency medical technicians (EMT) and paramedics.

changing so rapidly that the responder does not have sufficient time to mentally process and react to the situation before it changes again.

The divergent cultures of command and control between law enforcement and fire rescue responders present another challenge to these institutions' interaction and response to incidents. Police officers typically operate as single-person response units, functioning independently of direct command and oversight on most day-to-day responses. Law enforcement agencies do not routinely use the Incident Command System (ICS) during normal operations.³ While there is limited acceptance of the ICS in the law enforcement discipline, there are efforts to turn that around⁴; the ICS provides a structured yet flexible command-and-control element to emergency responses. In contrast, fire rescue personnel respond as multi-person response units, with each unit having a ranked person in command. Additionally, all significant fire department responses have a command-and-control element dispatched immediately to provide operational oversight.⁵ This is usually a high-ranking and experienced person responsible for assessing the scope and needs of the incident and directing resources to accomplish tasks. Fire rescue personnel typically operate as teams under the control of, and at the direction of, either the ranking person on a specific unit or as groups of units under a single command-and-control element. These differences can create conflicting expectations and responses in an emergency incident.

Another challenge to law enforcement and fire rescue interaction during the initial phase of a crisis arises from concurrent and sometimes conflicting response priorities. Fire rescue responders coordinate their actions and work in teams to achieve established, common objectives set by a person attempting to consider all aspects of the incident. However, those objectives may not be known to law enforcement responders. By the same token, law enforcement responders work as individuals to accomplish objectives

³ All Hazards Incident Management Team Association, *Law Enforcement Implementation of the Incident Command System* (Long Beach, CA: All Hazards Incident Management Team Association, 2020), 5, https://ahimta.org/resources/Documents/AHIMTA_LawEnforcementImplementationICS.pdf.

⁴ All Hazards Incident Management Team Association, 5.

⁵ Significant responses are those involving reports of mass casualties, incidents involving weapons, severe damage to buildings or critical infrastructure from natural disasters, people who are trapped in some way, or other incidents with the high potential for injury or loss of life.

beneficial to the incident but that are not necessarily known to other police officers or fire rescue responders. For example, law enforcement needs to neutralize the shooter during an active shooter incident, while fire rescue responders prioritize lifesaving treatment and transport of victims. However, fire rescue personnel need to be escorted under the protection of groups of police officers to access victims. This course of action requires coordination between fire rescue and law enforcement and the formation of law enforcement groups rather than individual operators.

Responders must quickly identify the immediate needs, what decisions need to be made, and what actions to take during the initial phase of an ASHE to move the incident from a chaotic phase toward one of order.⁶ Currently, there are no universally understood and shared factors between law enforcement and fire rescue responders to trigger action at an ASHE. The initial chaos and the differences between law enforcement and fire rescue organizational and response methods lead to conflicting priorities, ineffective communication, poor coordination, and delays in potentially life-saving interventions.⁷ Knowing what factors support and drive responder's' actions during an ASHE—before it occurs—could improve coordination and collaboration, especially early in the incident response. Shared action points between the disciplines would result in common and relevant priorities. Understanding such forces would help responders quickly establish common objectives to address the incident's complex and possibly conflicting priorities. Ultimately, improved coordination through shared priorities and objectives should lead to improved outcomes for victims.

This research was motivated by my observation of stalls, or brief pauses, in action during a joint training exercise conducted in the summer of 2021. During the exercise,

⁶ The author defines the order phase of an incident as occurring when the situation has stabilized to the point that the harm occurring—either to people, property, or the environment—is not growing in magnitude or scope. For example, a fire inside a building is controlled by the fire department. It may not be extinguished, but it is not growing.

⁷ The lack of coordination between enforcement and fire rescue responders at the Pulse nightclub shooting in Orlando, Florida, in 2016 led to confusion about whether fire rescue responders could safely operate and provide medical treatment to victims at the incident scene. Frank Straub et al., *Rescue, Response, and Resilience: A Critical Incident Review of the Orlando Public Safety Response to the Attack on the Pulse Nightclub* (Washington, DC: Office of Community Oriented Policing Services, 2017), 47, <https://cops.usdoj.gov/RIC/Publications/cops-w0857-pub.pdf>.

responders sometimes stalled when a driving force that should have caused them to take action occurred. These stalls were common among all disciplines and included agencies failing to react to other agencies' actions.

This thesis examines what shared action points responders can use to maintain momentum in the response to best save lives during an ASHE. For the purposes of this thesis, shared action points are recognizable events that occur during an ASHE response. The event may signal a transition to a new phase of the incident or the opportunity for another responder or agency to take another action. Recognition of these events can enable responders to quickly act on them in order to build, establish, or maintain momentum in pursuit of neutralizing the perpetrator and rescuing victims. If responders recognize shared action points and use them to take further coordinated actions intended to keep the momentum of the response going, the incident could be mitigated more quickly, with more lives saved.

B. RESEARCH QUESTION

What shared action points can law enforcement and fire rescue personnel identify, prior to an incident, to improve response coordination and collaboration?

C. CONTRIBUTION

The intent of this work is to contribute to the mental repository of experiences and practiced simulations that responders' reference to make decisions and drive action at an ASHE.⁸ The analysis in this research was used to create a conceptual model for recognizing and acting on shared action points. These shared action points could be incorporated into realistic training scenarios to create a mental repository that enable responders to make decisions and take action at an ASHE. Recognizing shared action points experienced during training sessions should enable responders from multiple agencies to build on each action taken to effectively mitigate the threat. Shared action

⁸ The concept of RPDM includes taking action based on rapid mental simulation or previous experiences while applying those simulations or experiences to the current situation. Gary A. Klein, ed., *Decision Making in Action: Models and Methods* (Norwood, NJ: Ablex Pub, 1993), 139.

points may also be incorporated into policy or standard operating guidelines once they are validated through training exercises.

D. OVERVIEW OF CHAPTERS

Chapter II provides the background of several key concepts related to the preparation for and response to an ASHE, including recognition primed decision making (RPDM), driving force, and cooperation and collaboration of law enforcement, fire, and emergency medical responders. Chapter III details the research design and methods, including the selection criteria and analysis approach of policies and cases as well as focus group data collection and analysis. Chapters IV, V, and VI explain the findings of a detailed analysis of agency policies, actual ASHE cases, and two focus group discussions. Chapter VII provides the mitigation action chain conceptual model. Chapter VIII includes the conclusion, recommendations, and areas for future research.

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II. LITERATURE REVIEW

This chapter reviews the current literature relevant to law enforcement and fire rescue collaboration at various levels. Consolidation of public safety agencies represents the highest degree of operational integration while coordination, cooperation and collaboration involve less integration. Literature related to human decision making and what drives decisions and actions is also reviewed. Specifically, this chapter addresses RPDM. A significant amount of literature covers this topic, and the review focuses on making decisions under stress. Another area reviewed concerns the concept of “driving force” at incident scenes: the observations, assumptions, instincts, and trained recollections that cause responders to move from objective to objective or step to step during an incident.⁹ Driving forces during an ASHE are considered in comparison to what drives human behavior in daily life.

A. INDUSTRY VIEWS ON PUBLIC SAFETY CONSOLIDATION

On the degree of consolidation, coordination, and collaboration that should exist between law enforcement, fire, and medical professionals, scholars are divided. The way in which departments are organized can influence how the law enforcement and fire rescue disciplines will interact. Full consolidation represents the highest degree of integrated law enforcement, fire, and EMS. One school of thought debates the advantages and disadvantages of full consolidation of public safety services at the municipal level. Scholars note that departments that had consolidated at one time have deconsolidated for various reasons, including little or no cost savings, resistance from personnel, and decreased fire insurance ratings, while others have remained consolidated.¹⁰ Gomez, Perez, and Smith concluded that the communities considering consolidation must weigh many factors, including public perception of service changes, actual service changes, and

⁹ Advanced Law Enforcement Rapid Response Training and Federal Bureau of Investigation, *ALERRT Train-the Trainer*, INST 2–25.

¹⁰ Jeremy M. Wilson, Alexander Weiss, and Clifford A. Grammich, *Public Safety Consolidation: A Multiple Case Study Assessment of Implementation and Outcome* (Washington, DC: Office of Community Oriented Policing Services, 2016), 3–5, <https://www.hsdl.org/?abstract&did=794132>.

budget effects to determine whether consolidation would be worthwhile.¹¹ The authors found that the public perception of how consolidation affects service is mixed and should be evaluated.¹² They also suggested that officials will need to reevaluate consolidations occasionally to determine whether the department is meeting the needs of the community and realizing the benefits identified prior to consolidation.¹³

The International Association of Fire Chiefs (IAFC), having opposed the consolidation of law enforcement, fire, and EMS departments since 1877, reaffirmed its position in 2009.¹⁴ The IAFC cited the timing of its statements against consolidation as proof that the concept arises from cost-saving concerns rather than service improvement or efficiencies.¹⁵ Additionally, the organization listed numerous reasons that it opposed consolidation, including the diverse mission of the fire/EMS service, mission confusion in consolidated agencies, differences in response methods (individuals versus teams), diminished efficiency, and decreased job satisfaction.¹⁶ The International Union of Police Associations agreed, saying that consolidation of fire and police departments is “a false economy that will impair the operation of both these essential services.”¹⁷

In contrast, Mata contended that police and fire that are not consolidated—such as Green Bay, Milwaukee, and Chicago—lack the adaptiveness required by the modern

¹¹ Victoria Gomez, Janet Perez, and Timothy Smith, *Public Safety Consolidation* (Fullerton, CA: California State University Fullerton Center for Public Policy, 2015), 25, http://cpp.fullerton.edu/Faculty/Dixie_CPP/Public_Safety_Consolidation_2015.pdf.

¹² Gomez, Perez, and Smith, 25.

¹³ Gomez, Perez, and Smith, 23–25.

¹⁴ IAFC Board of Directors, “IAFC Position: Consolidation of Fire/Emergency and Law Enforcement Departments and the Creation of Public Safety Officers,” International Association of Fire Chiefs, January 23, 2009, <https://www.iafc.org/topics-and-tools/resources/resource/iafc-position-consolidation-of-fire-emergency-and-law-enforcement-departments-and-the-creation-of-public-safety-officers>.

¹⁵ IAFC Board of Directors, para. 3.

¹⁶ IAFC Board of Directors, “IAFC Position.”

¹⁷ International Union of Police Associations, “The International Union of Police Associations Position Statement” (Sarasota, FL: International Union of Police Associations), 1, accessed October 12, 2021, <https://view.officeapps.live.com/op/view.aspx?src=http%3A%2F%2Fwww.policefireconsolidation.org%2FOrganization%2520Position%2520Letters%2FThe%2520International%2520Union%2520of%2520Police%2520Associations%2520Position%2520Statement.doc>.

homeland security environment because of the breadth of the enterprise and advises that they consider consolidation.¹⁸ In summary, the debate regarding full consolidation of law enforcement fire, and EMS continues and will likely remain a topic of debate when communities face financial woes and incidents continue to drive increased collaboration between disciplines on incident scenes.

B. INDUSTRY VIEWS ON PUBLIC SAFETY COORDINATION, COLLABORATION, AND COOPERATION

While scholars' opinions differ on full consolidation, they concur more regarding coordination, collaboration, and cooperation for certain events. Collaboration and coordination between fire/EMS and law enforcement is visible on routine incidents every day. Scholars advise, though, that incidents that go beyond the routine would benefit from increased cooperation. For example, Onieal cited "excellent fire, police, and EMS coordination" while investigating the response to an apartment building explosion in New York City.¹⁹ A key finding of the investigation is that planning and collaboration before and during the incident formed a "cohesive organization" at the incident.²⁰ From a disaster and emergency management vantage point, Sylves asserted that, in many cases, local authorities are responsible for emergency management unless they are overwhelmed.²¹ He argued that because emergency response and management are bottom-up affairs, meaning that the response starts locally, the need for "multiagency and multijurisdictional coordination" is imperative.²² Teeter supported Sylves's bottom-up description of the incident response management and posited that it is particularly important in the early

¹⁸ Vinicio R. Mata, "The Contribution of Police and Fire Consolidation to the Homeland Security Mission" (master's thesis, Naval Postgraduate School, 2010), 64, <http://hdl.handle.net/10945/5400>. Interestingly enough, Mata wrote the thesis supporting consolidated departments while serving as a lieutenant of the Sunnyvale Department of Public Safety and therefore has firsthand experience with consolidated public safety agencies.

¹⁹ Denis Onieal, *Fire, Police, and EMS Coordination at Apartment Building Explosion: Harlem, New York City*, USFA-TR-068 (Emmitsburg, MD: U.S. Fire Administration, 1992), 2, <https://www.usfa.fema.gov/downloads/pdf/publications/tr-068.pdf>.

²⁰ Onieal, 10.

²¹ Richard Sylves, *Disaster Policy and Politics: Emergency Management and Homeland Security* (Washington, DC: CQ Press, 2008), 135.

²² Sylves, 135.

stages of major incidents.²³ Building explosions and natural disasters are arguably not routine incidents. Likewise, despite their unfortunate frequency, active threat incidents are anything but routine.

C. COORDINATION AND COLLABORATION DURING ASHE RESPONSES

Some agreement exists regarding fire/EMS and law enforcement collaboration during an ASHE, but disagreement on specifics remains. A technical report by the United States Fire Administration (USFA) on the Columbine High School shooting specifically called for “law enforcement escorts during hostile, interior operations” and “rapid rescue and medical intervention for tactical teams.”²⁴ The report justified its call for this type of collaboration by suggesting that any jurisdiction could be faced with an incident similar to Columbine.²⁵ The report also concluded that “joint operations and unified command between law enforcement and fire/EMS are critical to successfully manage response to incidents ranging from natural disasters to acts of terror.”²⁶ Moody agreed that law and fire/EMS need to work collaboratively and postulated that police and fire/EMS agencies in the United States are not prepared for complex, coordinated attacks because they lack a coordinated response.²⁷ Moody held that “organizational paradigms that exclude fire and medical personnel from hot zone operations are naïve and will not stand up to the test of a Mumbai or Beslan visited upon the United States.”²⁸ The recommendations and claims of the USFA and Moody have law enforcement and fire rescue personnel operating

²³ Andrew C. Teeter, “On A Clear Day, You Can See ICS: The Dying Art of Incident Command and the Normal Accident of NIMS - Policy Analysis” (master’s thesis, Naval Postgraduate School, 2013), 43, <http://hdl.handle.net/10945/32908>.

²⁴ United States Fire Administration, *Wanton Violence at Columbine High School*, USFA-TR-128 (Emmitsburg, MD: Federal Emergency Management Agency, 1999), 32, <https://rib.msb.se/Filer/fema/tr-128.pdf>.

²⁵ United States Fire Administration, 32.

²⁶ United States Fire Administration, 32–33.

²⁷ Theodore J. Moody, “Filling the Gap between NIMS/ICS and the Law Enforcement Initial Response in the Age of the Urban Jihad” (master’s thesis, Naval Postgraduate School, 2010), 55, <http://hdl.handle.net/10945/5182>.

²⁸ Moody, 56–57.

in “hostile, interior operations” and “hot zone operations.”²⁹ However, practitioners may disagree on where law enforcement and fire rescue personnel can or should operate together. The USFA recommendation calling for “escorts during hostile operations” were made in the 1999 report *Wanton Violence at Columbine High School*.³⁰ Moody’s statement that fire and medical personnel should not be “excluded from hot zone operations” were from a 2010 master’s thesis.³¹ Neither the USFA nor Moody offer a definition of “hostile operations” or “hot zone operations.” However, the public safety training and consulting firm C3 Pathways and FEMA’s *Active Shooter Incident Management* (ASIM) participant guide defined three incident operating zones at an ASHE: hot, warm, and cold:

The Hot Zone is an area that’s under direct threat. Bullets are flying or we’re expecting them to fly at any moment.

The Warm Zone is an area where we have security measures in place. It’s not perfectly safe. It hasn’t been cleared. It’s not been declared secure. But, there are some security measures in place by law enforcement to bring that threat level from the Hot Zone down to a lower risk.

The Cold Zone where no threat is reasonably expected. The Command Post, the Staging Area, the support locations, these are all intended to be in the Cold Zone where no threat would reasonably occur.³²

Furthermore, the same guide defined Rescue Task Force (RTF) as “a mixed discipline, ad hoc unit with security and medical elements, that operates in the *Warm Zone*” [emphasis added].³³ It is unclear if these disparities in operating location represent disagreement or results of the evolving response model for ASHE. Although the debate has no clear outcome, scholarly literature is beginning to provide more clarity on where responders work and how incident specific terms are defined during an ASHE.

²⁹ United States Fire Administration, *Wanton Violence at Columbine*, 32; Moody, “Filling the Gap,” 56.

³⁰ United States Fire Administration, *Wanton Violence at Columbine*, 32.

³¹ Moody, “Filling the Gap,” 56–57.

³² Federal Emergency Management Agency et al., *Active Shooter Incident Management (ASIM)*, 3rd ed. (Washington, DC: Federal Emergency Management Agency, 2019), 88.

³³ Federal Emergency Management Agency et al., 102.

Another corpus of literature discusses the specifics of collaboration between law enforcement and fire/EMS. Atwater presented several reasons why law enforcement and fire rescue collaboration may be challenging—including culture, politics, rivalries, and competition for scarce resources—yet strongly recommended collaboration during an ASHE. He argued that the fire service is more than capable of taking on the mission of RTF operations in the warm zone.³⁴ Johnson agreed, recommending that law enforcement and fire rescue “implement joint operational procedures to support the cross-disciplinary team concept” by creating ASHE policies or standard operating procedures.³⁵ Likewise, Billings built on this idea, specifically recommending the development of a standard operating guideline for a “rescue team” consisting of police and fire personnel, a comprehensive training plan, and relationship building to foster collaboration.³⁶ In the same way, the International Public Safety Association (IPSA) advised that jurisdictions integrate operations and use the RTF model. However, IPSA expanded the integration beyond law enforcement and fire rescue agencies. Cotter proposed that agencies are not wholly prepared for an ASHE unless they have a fully integrated response that includes law enforcement, fire rescue, and public safety answering points (PSAP), also referred to as 911 centers.³⁷ Although these scholars and organizations support the need for collaboration between law enforcement and fire rescue agencies, they also point to the need for collaboration beyond on-scene responders.

Beyond the scholarship, professional associations document standards that could guide joint agency collaboration with law enforcement. The National Fire Protection

³⁴ Paul A. Atwater, “Force Protection for Fire Fighters: Warm Zone Operations at Paramilitary Style Active Shooter Incidents in a Multi-Hazard Environment as a Fire Service Core Competency” (master’s thesis, Naval Postgraduate School, 2012), 79–82, <http://hdl.handle.net/10945/6764>.

³⁵ Keith H. Johnson, “Changing the Paradigm: Implementation of Combined Law Enforcement, Fire, and Emergency Medical Service (EMS) Cross-Disciplinary Response to Hostile Events” (master’s thesis, Naval Postgraduate School, 2014), 89–90, <http://hdl.handle.net/10945/44587>.

³⁶ David C. Billings, *EMS under Fire: Developing an Active Shooter Incident Response Plan* (Emmitsburg, MD: National Fire Academy, 2014), 51–69, <https://nfa.usfa.fema.gov/pdf/efop/efo48437.pdf>.

³⁷ Heather Cotter, *Rescue Task Force Best Practices Guide* (Goodyear, AZ: International Public Safety Association, 2017), 3, <https://www.joinipsa.org/resources/Documents/International%20Public%20Safety%20Association%20Rescue%20Task%20Force%20Best%20Practices%20Guide%20October%202017.pdf>.

Association (NFPA) published a consensus standard regarding active threat incidents titled “NFPA 3000, Standard for an Active Shooter/Hostile Event Response (ASHER) Program.”³⁸ Varone wrote that “NFPA standards are evidence of what the reasonably prudent fire department would have done under the circumstances.”³⁹ NFPA 3000 provided common terminology and definitions for ASHE components, including operating zones, RTFs, a complex coordinated attack, and many others, providing clarity for responders.⁴⁰ NFPA 3000 directed the development of “multi-agency and multidiscipline relationships” and agency policies for collaboration between law enforcement and fire rescue and other organizations responding to an ASHE.⁴¹ Furthermore, the standard calls for the establishment of unified command comprised of fire, EMS, law enforcement, emergency management, and other agencies under section 8.4.2.⁴² NFPA 3000 added the specific requirement that law enforcement and fire rescue, and other agencies, share information and intelligence to improve response coordination.⁴³ As the first standard of its kind, NFPA 3000 may influence future literature and practice.

D. DRIVING FORCES DURING ASHE INCIDENT RESPONSE

The concept of driving forces that maintain or build momentum in a response and compel responders to take actions that lead to the mitigation of an incident is not well

³⁸ NFPA 3000TM.

³⁹ Curt Varone, “Can a Fire Department Be Sued for Not Meeting NFPA Standards?,” *Lexipol* (blog), August 19, 2019, <https://www.lexipol.com/resources/blog/can-a-fire-department-be-sued-for-not-meeting-nfpa-standards/>. The National Fire Protection Association is recognized as the body of guiding consensus standards for the United States fire service. Compliance is not mandatory, but fire departments are judged by their willingness and ability to meet NFPA standards. NFPA 3000, *Standard for an Active Shooter/Hostile Event Response (ASHER) Program*, was developed by a technical committee of over 70 fire, EMS, security, and law enforcement professionals from around the country. NFPA 3000, the “first and only consensus standard” on the subject, was originally released in 2018 and revised and reissued in 2021. See: National Fire Protection Association, *NFPA 3000TM: Standard for an Active Shooter/Hostile Event Response (ASHER) Program* (Quincy, MA: National Fire Protection Association, 2021), 1–7, <https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and->

⁴⁰ National Fire Protection Association, *NFPA 3000TM*, sec. 3.2.

⁴¹ National Fire Protection Association, sec. 6.2.

⁴² National Fire Protection Association, sec. 8.4.2.

⁴³ National Fire Protection Association, sec. 6.9.1.

documented. In response to a prominent mass shooting in the United States, the Federal Bureau of Investigation (FBI) was charged with establishing an active shooter training program that was common to all law enforcement agencies.⁴⁴ The FBI partnered with the Advanced Law Enforcement Rapid Response (ALERRT) at Texas State University to promote their program.⁴⁵ The ALERRT instructor guide explained driving force this way: “A Driving Force, also known as *actionable information*, is information that indicates an active killing is taking place and leads responders to the attacker’s location. This may be the sound of gunshots, screams, or information provided by dispatch or evacuees.”⁴⁶ Driving force determines the tempo a law enforcement officer will use when responding to an ASHE.⁴⁷ As the ASHE response evolves, the driving force also evolves, changing the focus of the response.⁴⁸ I am unaware of any other literature discussing the concept of driving force in public safety responses.

E. PSYCHOLOGICAL AND PHYSIOLOGICAL ELEMENTS OF DECISION MAKING

Identifying the highest-priority problems, deciding in what order and how to address them, and taking action to address them are essential functions of responders during the early phase of an ASHE. Understanding the process responders use to do this is difficult. Decision-making models and frameworks that can be used to identify priorities exist, but public safety agencies have not formally adopted a specific framework. Additionally, the industry has no consensus regarding what framework or approach is best or if responders should even apply a framework to the early phase of an incident. Ordering priorities or recognizing a shift in them does not seem like it should be complicated.

⁴⁴ Advanced Law Enforcement Rapid Response Training and Federal Bureau of Investigation, *ALERRT Train-the Trainer*, 3.

⁴⁵ Advanced Law Enforcement Rapid Response Training and Federal Bureau of Investigation, 3.

⁴⁶ Advanced Law Enforcement Rapid Response Training and Federal Bureau of Investigation, INST 2–26.

⁴⁷ Advanced Law Enforcement Rapid Response Training and Federal Bureau of Investigation, INST 2–25-INST 2–26.

⁴⁸ Advanced Law Enforcement Rapid Response Training and Federal Bureau of Investigation, INST 2–33-INST 2–34.

However, there may be times when concurrent or conflicting priorities have equal weight but must be addressed by different disciplines. Taking action to address established and ordered priorities again requires decision-making to determine which people with what resources will be best suited to address the problem. Recognizing specific events that trigger additional or new action is essential for responders and incident commanders during an ASHE.

Identifying the highest priority problem and deciding in what order and how to address them are tightly coupled. Klein posited that in real-life situations where decisions must be made quickly, people decide on an action that will work but is not necessarily perfect.⁴⁹ In *Sources of Power*, Klein explained that responders, particularly firefighters, rely on the recollection of previous circumstances to recognize the problems facing them during the initial phase of an incident and as conditions change throughout the incident. Klein referred to this as RPDM. Using RPDM, firefighters can recognize a complex situation as something familiar to them by breaking it into its component parts and recognizing each part individually.⁵⁰ Klein and his partners later studied military commanders and determined that they also used the RPDM model. The use of RPDM in law enforcement is not well documented, though renowned risk management expert Gordon Graham alluded to its use in the field.⁵¹

Making sense of a complex and chaotic incident is critical to understanding how to respond to it. Renaud explained that making sense of chaotic situations is how incident commanders can continue moving an incident toward resolution because it helps drive behaviors and actions on the scene.⁵² She further stated that sensemaking is part of how an incident commander evaluates whether an incident is progressing how they want it

⁴⁹ Klein, *Decision Making in Action*, 144.

⁵⁰ Gary A. Klein, *Sources of Power: How People Make Decisions* (Cambridge, MA: MIT Press, 1998), 17.

⁵¹ Gordon Graham, “The Power of Recognition-Primed Decision-Making in Public Safety,” *Lexipol* (blog), November 6, 2019, <https://www.lexipol.com/resources/blog/the-power-of-recognition-primed-decision-making-in-public-safety/>.

⁵² Cynthia E. Renaud, “Making Sense in the Edge of Chaos: A Framework for Effective Initial Response Efforts to Large-Scale Incidents” (master’s thesis, Naval Postgraduate School, 2010), 21, <http://hdl.handle.net/10945/5138>.

to.⁵³ Klein's findings are similar to Renaud's explanation that sensemaking helps break the incident into individual and "understandable" parts.⁵⁴ Klein's studies demonstrate that responders make decisions based on recollection of past, familiar experiences.⁵⁵

LeDoux related that the emotional part of the brain acts as an "appraisal mechanism," allowing it to understand specific inputs as a call to action.⁵⁶ On a most basic level, the brain understands what LeDoux referred to as "natural triggers." These include primal responses such as recognizing danger. However, he asserted that "learned triggers" also drive action. These learned triggers are similar to Klein's finding that responders' experiences allow them to make rapid decisions. Either type of trigger causes one to take steps that have successfully dealt with the situation in the past.⁵⁷ While LeDoux's discussion is related to emotion, primarily fear and anxiety, the influence of emotion on decision-making is also present. Fear and anxiety are particularly relevant to the responder's state of mind during an ASHE incident.

The idea of a specific response to a particular event or circumstance is not new. Nobel Prize-winning physiologist Ivan Pavlov discovered this type of conditioning through experiments conducted in the late 1800s and early 1900s.⁵⁸ Pavlov determined that dogs fed soon after being exposed to the sound of a metronome would begin to salivate upon hearing the metronome. The food served as a natural stimulus for the dog, but the metronome did not stimulate the dog at all, at least initially. Pavlov theorized that the dog's response to the sound of a metronome changed because it learned that food

⁵³ Renaud, 94. Renaud uses Weick's definition of sensemaking. Weick explains that sensemaking is a process of understanding what is occurring by applying frameworks to events and constructing understanding based on that framework and the environment the event is occurring in. Renaud, 8; Karl E. Weick, *Sensemaking in Organizations* (Thousand Oaks, CA: Sage Publications, 1995), 6.

⁵⁴ Renaud, "Making Sense in the Edge of Chaos," 49–50.

⁵⁵ Klein, *Decision Making in Action*, 142.

⁵⁶ Joseph E. LeDoux, *The Emotional Brain: The Mysterious Underpinnings of Emotional Life* (New York: Simon & Schuster, 1998), 127.

⁵⁷ LeDoux, 127.

⁵⁸ Saul McLeod, "Pavlov's Dogs Study and Pavlovian Conditioning Explained," Simply Psychology, 2021, <https://www.simplypsychology.org/pavlov.html>.

followed the sound.⁵⁹ While the experiments were on animals and did not involve humans, they are regarded as some of the most important psychological discoveries. LeDoux equates the stimuli from Pavlov's experiments to his own triggers in humans. Where Pavlov discusses unconditioned stimulus, LeDoux discussed natural triggers, and Pavlov's conditioned stimulus is LeDoux's learned trigger.⁶⁰

Fear can have a paralyzing or "freezing" effect on humans. Stress caused by fear or anxiety can cause a person to stop acting and appear to stop thinking. During this time of inactivity, the brain is gathering information and preparing for action.⁶¹ Schauer and Elbert referred to this as the orienting response.⁶² Anxiety is the human reaction to situations that the brain finds unpleasant or scary, even though the situation is not being experienced when the anxiety occurs.⁶³ Research by McAllister et al. has shown that responders experience stress and anxiety when training for ASHE situations.⁶⁴ While the study did not involve actual law enforcement personnel and only looked at training scenarios, the results are still relevant given that the subjects were human and the results were scientifically obtained.⁶⁵ Mowrer noted that the human mind has the capacity to learn to take steps that protect it from the effects of anxiety.⁶⁶ When fear and anxiety cause a responder to stop acting or thinking, momentum may be lost.

The previously discussed concept of driving forces in an ASHE may correlate to what drives people in general. Miller noted that several factors drive human behavior,

⁵⁹ Ivan Pavlov, *Conditioned Reflexes* (Petrograd: Cambridge University Press, 2013), 34, Kindle.

⁶⁰ LeDoux, *The Emotional Brain*, 143.

⁶¹ Maggie Schauer and Thomas Elbert, "Dissociation Following Traumatic Stress: Etiology and Treatment," *Zeitschrift Für Psychologie / Journal of Psychology* 218, no. 2 (January 2010): 112, <https://doi.org/10.1027/0044-3409/a000018>.

⁶² Schauer and Elbert, 111.

⁶³ LeDoux, *The Emotional Brain*, 228.

⁶⁴ Matthew J. McAllister, M. Hunter Martindale, and Liliana I. Rentería, "Active Shooter Training Drill Increases Blood and Salivary Markers of Stress," *International Journal of Environmental Research and Public Health* 17, no. 14 (2020): 7, <https://doi.org/10.3390/ijerph17145042>.

⁶⁵ McAllister, Martindale, and Rentería, 3.

⁶⁶ O. H. Mowrer, "A Stimulus-Response Analysis of Anxiety and Its Role as a Reinforcing Agent," *Psychological Review* 46, no. 6 (1939): 558, <https://doi.org/10.1037/h0054288>.

some of which are “fear, or desire for money, approval, or status”; these drives are learned through socialization.⁶⁷ Miller studied the behavior of rats when subjected to the fear-inducing stimulus of an electric shock. Ultimately, the rats learned new behaviors that allowed them to escape the shocks. Miller pointed out that his work “confirms Mowrer’s hypothesis that fear (or anxiety) can play a role in learning similar to that of a primary drive such as hunger.”⁶⁸ Miller offered: “One hypothesis is that neurotic symptoms, such as compulsions, are habits which are motivated by fear (or anxiety as it is called when its source is vague or obscured by repression) and reinforced by a reduction in fear.”⁶⁹

Although Miller’s study was conducted on rats rather than humans, he began the study by explaining how the results are connected to human psychology. Furthermore, Miller noted that another study by Dollard relates the findings to humans.⁷⁰ The source information was provided for the Dollard study, but it could not be located. Harnessing the power of anxiety to serve as a driving force could prove helpful to responders during an ASHE or any incident.

If the freeze or orienting response is a stage where humans gather information, it relates to Boyd’s “orientation” stage of the Observation, Orientation, Decision, Action (OODA) Loop.⁷¹ The OODA Loop is a process in which a person observes the environment around them, seeks to understand it, determines what to do about it, test their decision by taking action, and then re-observing the effect.⁷² Boyd posited that the orientation stage is where past experiences, education, and training all converge to create

⁶⁷ Neal E. Miller, “Studies of Fear as an Acquirable Drive: I. Fear as Motivation and Fear-Reduction as Reinforcement in the Learning of New Responses,” *Journal of Experimental Psychology: General* 121, no. 1 (March 1992): 6, <https://doi.org/10.1037/0096-3445.121.1.6>.

⁶⁸ Miller, 10.

⁶⁹ Miller, 11.

⁷⁰ Miller, 11.

⁷¹ John A. Boyd and Grant Tedrick Hammond, *A Discourse on Winning and Losing* (Maxwell AFB, AL: Air University Press, 2018), 384–85.

⁷² Boyd and Hammond, 383.

a series of options for a person to choose from.⁷³ It is in this area of cognition and synthesis that the works of Boyd and Klein converge.

F. SUMMARY

The review of existing literature discussed various forms of collaboration between fire, EMS, and law enforcement, as well as the driving forces and decision-making. Full consolidation continues to be a contentious issue among scholars and practitioners. Agreement on how certain incidents should be managed, particularly an ASHE, is also mixed. However, more recent research has shifted in support of the RTF model, which requires close collaboration and coordination between law enforcement and fire rescue. The recent publication and swift revision of a consensus standard related to active threat responses demonstrate that the literature is evolving as rapidly as the response methodology. I have not located current scholarly literature criticizing the use of RTFs or the current model of collaboration between law enforcement and fire rescue.

How responders make decisions and take action during non-ASHE incidents is similar to how they will function during an ASHE. The threats and injuries experienced in non-ASHE responses are similar to those experienced at an ASHE, though the cause is different. In the case of an ASHE, specific driving forces will compel responders to react. Research conducted by scholars to explain how people, including responders, make decisions about what action to take is relevant to an ASHE response. The research demonstrates that a responder's recollection of previous experiences will affect decisions regarding actions at an ASHE. The analysis of an ASHE through the lens of RPDm may reveal prototypical responses to common conditions experienced during these incidents and allow for the development of standard, shared action points intended to maintain or build momentum during a response.

⁷³ Boyd and Hammond, 384–85.

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III. RESEARCH DESIGN AND METHODS

This thesis answers the question: What shared action points can law enforcement and fire rescue personnel identify, prior to an incident, to improve response coordination and collaboration? The overall intent of the research was to identify commonalities in agency policy and actual ASHE incidents that could be used as shared action points. Shared action points would be used to help responders recognize when to take action and reduce stall time.

The research consisted of three phases. In the policy review and analysis phase, I analyzed the policies of three agencies that respond to ASHE incidents in the same county to determine if there were actions directed in policy that could serve as shared action points. In the case analysis phase, I examined after-action reports (AAR) of four ASHE incidents to identify common occurrences that could be recognized by responders. In the focus group phase, I conducted a focus group with six subject matter experts (SME) to validate findings from the first two phases and to provide additional findings and conclusions.

A. POLICY REVIEW AND ANALYSIS

The objective of the policy analysis was to determine what actions in department policies could be considered shared action points. If actions found in a policy would or should cause additional action by another responder or agency, those actions were deemed to be a shared action point. Additionally, the analysis of current agency policies provided the opportunity to consider whether shared action points found in AARs should be written into policy if they were not already there.

1. Data Collection and Sources

The policies selected for this review are related explicitly to ASHE incidents and from three cooperating agencies that respond to ASHE incidents in our jurisdiction and throughout the county. The Brown County Sheriff's Department provided me the

Integrated Threat Standard Operating Guidelines.⁷⁴ Policy 414, the Green Bay Police Department provided Policy 414, “Rapid Response and Deployment.”⁷⁵ The Green Bay Metro Fire Department’s standard operating guideline 0204.11, *Response to Active Threat Incidents*, is my agency’s policy and therefore immediately available.⁷⁶ The MABAS Division 112 *Response to Violent Incidents* policy was available as part of a county-wide mutual aid organization affiliated with the Green Bay Metro Fire Department.⁷⁷

I specifically chose these policies because they outline the overall response plan for law enforcement, fire department, and EMS services to an ASHE incident. The policies are particularly relevant because all three agencies cooperatively wrote and trained on them together. If an ASHE incident were to occur in any of the communities protected by these agencies, all three agencies would be the primary responders required to work collaboratively to mitigate the incident.

2. Data Analysis Approach

Each policy was reviewed to identify the elements in Table 1.

Table 1. Policy Elements and Descriptions

Policy Element	Description
Actions expected of responders (policy directive)	Actions written in policy that responders are expected to take
Reason for the action	The intent of the action (commander’s intent/agency intent)
Expected outcome of the action	The desired outcome of the action

⁷⁴ Brown County Sheriff’s Office, *Brown County Law Enforcement Agencies-Integrated Threat Standard Operating Guidelines* (Green Bay, WI: Brown County Sheriff’s Office, 2019).

⁷⁵ Green Bay Police Department, *Rapid Response and Deployment*, Green Bay PD Policy Manual, Policy 414 (Green Bay, WI: Green Bay Police Department, 2020).

⁷⁶ Green Bay Metro Fire Department, *Response to Active Threat Incidents*, Standard Operating Guideline 0204.11 (Green Bay, WI: City of Green Bay, 2019).

⁷⁷ Mutual Aid Box Alarm System Division 112, *Response to Violent Incidents* (Green Bay, WI: Mutual Aid Box Alarm System Division 112, 2019), http://wimabas112.org/uploads/3/4/6/4/3464448/division_112_response_to_violent_incidents.docx.

Policy Element	Description
Response component of the action	Classifies the action in the strategic, tactical, or task response component
Agency or agencies initiating the action	The agency or agencies expected to initiate the action based on policy
Who was involved in interactions resulting from the actions taken	Identify which agencies are interacting based on the action being directed in policy
Potential shared action points derived from each policy directive	Identify the shared action point that was derived from the action directed in policy

I documented the reason for each action found in policy if it was stated in the policy or known to me personally. I have been employed by the Green Bay Metro Fire Department since 1997 and at the time of this writing have been a chief officer for 15 years. In my role, I am responsible for writing or approving all standard operating guidelines (SOG). In this capacity, I wrote our agency's ASHE response SOGs and collaborated with the Green Bay Police Department and Brown County Sheriff's Department to establish their policies. In writing those policies, the objective was to ensure that all three policies addressed the same objectives and integrated response operations across agencies.

I categorized each policy directive based on the overall reason for the action. These categories were developed and applied iteratively as trends developed during the analysis process. Categories include communication with other agencies, victims, and hospitals; medical care for victims; resource coordination; direction of personnel; and direct action. Resource coordination involves someone either requesting, moving, or allocating resources. Direction of personnel includes giving an order or assigning a task to emergency personnel. Direct action consists of a person taking direct action, such as engaging the perpetrator or applying a tourniquet. Each identified action, reason, and outcome were documented on a standardized data collection form created for that purpose. Table 2 shows each category and definition.

Table 2. Action Categories and Definitions

Category of Action	Definition
Communication with other agencies	An agency or individual is directed to communicate with other agencies or individuals
Communication with victims	An agency or individual is directed to communicate with victims
Communication with hospitals	An agency or individual is directed to communicate with hospitals
Medical care for victims	An agency or individual is directed to provide medical care for victims
Resource coordination	An agency or individual is directed to request, move, or allocate resources
Direction of personnel	An agency or individual is directed to provide direction and oversight of emergency responders
Direct action	An agency or individual is directed to take a direct action, such as apply a tourniquet or engage the perpetrator

I also analyzed the policies to understand how frequently and in what ways agencies are expected to interact during an ASHE. I applied a series of codes to policy-directed actions that involved interactions with other agencies. The codes were then analyzed using Dedoose, a data analysis software platform. Table 3 shows the codes used to analyze interactions found in agency policies.

Table 3. Analysis Codes, Definitions, and Notes

Code:	Definition	Note
Fire◇All Agencies	Interaction between fire and all public safety agencies	
Fire◇EMS	Interaction between fire and EMS agencies	Includes interaction between the fire division and EMS division in a combined fire/EMS agency.
Fire◇Fire	Interaction between fire department personnel	Includes interaction between personnel of different fire departments
LE◇All Agencies	Interaction between law enforcement and all public safety agencies	
LE◇Dispatch	Interaction between law enforcement and a dispatch center	
LE◇EMS	Interaction between law enforcement and EMS	Includes interaction between LE and the EMS element of a combined fire/EMS agency.
LE◇Fire	Interaction between law enforcement and fire department	Includes interaction between LE and the fire element of a combined fire/EMS agency.
LE◇LE	Interaction between law enforcement personnel	Includes interaction between personnel of different law enforcement agencies.
LE◇Perpetrator	Interaction between law enforcement officer(s) and the perpetrator	
Perpetrator◇Victim	Interaction between the perpetrator and the victim	

LE = law enforcement

Potential shared action points derived from the expected actions, reasons, and outcomes found in the policies were also documented on the data collection form. I hypothesized these action points based on either an action to be taken based on policy or in response to an action taken or expected to be taken by someone else, including the perpetrator, other responders, or victims. Once all the data collection forms were

compiled, I uploaded them into Dedoose. After being coded and sorted into categories in Dedoose, the data was then exported to a spreadsheet, where I looked for commonalities that could be used as shared action points.

B. CASE ANALYSIS

The objective of the case analysis was to identify possible shared action points that occur during actual ASHE. Additionally, I sought to determine if those action points resulted in actions by other agencies or responders that had a positive effect on the incident. Identifying shared action points in an actual ASHE is important because they represent real occurrences rather than training events. Once identified, real circumstances that could serve as shared action points can be simulated in training environments to add realism, which may improve decision-making and decrease stall time. Finally, I looked for shared action points that occurred in several of the cases to find any sort of identifiable trend. Shared action points that occurred in all or most of the cases should be a focal point of future training exercises.

1. Data Collection and Sources

I selected four ASHEs for analysis to consider actions taken in real situations. I analyzed these incidents using publicly available after-action reports compiled by various agencies and organizations. The ASHEs selected for analysis include:

1. The Inland Regional Center in San Bernardino, California. This was a unique event in that it involved two shooters, one of which was a female, and a high-speed chase in which the perpetrators were neutralized at a separate crime scene.⁷⁸
2. The Harvest Music Festival in Las Vegas, Nevada. The Harvest Music Festival attack was chosen for two reasons. First, the incident generated

⁷⁸ Rick Braziel et al., *Bringing Calm to Chaos: A Critical Incident Review of the San Bernardino Public Safety Response to the December 2, 2015, Terrorist Shooting Incident at the Inland Regional Center* (Washington, DC: Office of Community Oriented Policing Services, 2016), 1; Braziel et al., 38; Federal Bureau of Investigation, *A Study of Active Shooter Incidents in the United States between 2000 and 2013* (Washington, DC: United States Department of Justice, 2013), 12, <https://eric.ed.gov/?id=ED594362>.

an extremely high number of fatalities and wounded victims.⁷⁹ Second, the extreme nature of the incident precipitated a significant policy and operational reaction from the three agencies whose policies were analyzed in this study.

3. The Pulse nightclub in Orlando, Florida. The Pulse nightclub shooting was selected because it was a long-duration event compared to most ASHE incidents.⁸⁰
4. The shootings at the Marjory Stoneman Douglas High School in Parkland, Florida. This incident was selected because of the highly publicized actions, or lack of action, by certain responders resulted in one responder being prosecuted.⁸¹

2. Data Analysis Approach

I analyzed AARs to determine the actions of responders and perpetrators. I documented responders' individual actions along with any corresponding actions if any were either noted or obvious. I also documented actions taken by perpetrators and corresponding actions from either responders or victims. As with the policy review, I captured various other data points. Table 4 shows data points gathered during the review of cases.

⁷⁹ Joseph Lombardo, *1 October After Action Review* (Las Vegas, NV: Las Vegas Metropolitan Police Department, 2018), 1.

⁸⁰ Federal Bureau of Investigation, *Active Shooter Incident 2000 and 2013*, 8; Straub et al., *Rescue, Response, and Resilience*, 7–12.

⁸¹ Manuel Bojorquez, "Florida Deputy Charged after Staying Outside during Parkland School Shooting," CBS News, June 5, 2019, <https://www.cbsnews.com/news/scot-peterson-florida-deputy-charged-parkland-marjory-stoneman-douglas-high-school-shooting-2019-06-05/>.

Table 4. Case Review Data Points

Response Component (strategic, tactical, or task)
Who initiated the action
Whether a corresponding action occurred
What the corresponding action was
Who was involved in interactions resulting from actions taken
The result of the actions taken
The outcome of the result (positive, negative, or neutral)
Whether the action caused a delay in neutralizing the perpetrator
Whether the actions caused a delay in victims receiving medical care
Whether the actions moved the incident toward resolution

I also documented shared action points derived from the actions taken and outcomes found in the after-action reviews on the form. Again, I hypothesized these action points based on the actions reported in the AAR and the corresponding actions taken or because they were recommended in the report. In some cases, the actions were expected to be taken by someone else, including the perpetrator, other responders, or victims. Once all the forms had been compiled, they were uploaded into Dedoose.

I applied a series of codes to the data to identify initial actions taken, any corresponding action resulting from the initial action, which agencies or people were involved in an interaction, and the results of an action. Initial actions taken were categorized by who took the action, what response component the action fit, and whether or not that action triggered a corresponding action either by the same person or someone else. I also categorized corresponding actions by the person taking them and the response component. I documented the results of the action to the extent possible and categorized as either positive, neutral, or negative. Table 5 shows the codes used to analyze actions in AARs.

Table 5. AAR Codes and Definitions

Code	Definition
Initiating Actions	
Dispatch (IA)	Action initiated by a dispatch center
EMS (IA)	Action initiated by EMS
Fire (IA)	Action initiated by fire
LE (IA)	Action initiated by law enforcement
Perpetrator (IA)	Action initiated by a perpetrator
Victim (IA)	Action initiated by a victim
Corresponding Actions	
No (CA)	The initiating action did not result in a corresponding action
Unknown (CA)	There was no discernable corresponding action to the initiating action
Yes (CA)	The initiating action did result in a corresponding action
Dispatch (CA)	Corresponding action initiated by a dispatch center
EMS (CA)	Corresponding action initiated by EMS
Fire (CA)	Corresponding action initiated by Fire
LE (CA)	Corresponding action initiated by law enforcement
Perpetrator (CA)	Corresponding action initiated by a perpetrator
Victim (CA)	Corresponding action initiated by a victim

IA = initiating action; CA = corresponding action

Interactions between agencies and individuals were coded to identify which agencies or people interacted. For this purpose, I defined “interaction” to mean direct face-to-face or person-to-person interaction, but also the reaction of a person or agency based on the known or perceived actions of a different person or agency, regardless of their proximity to each other. Some level of inference from the available context of the situation was used to determine what perception a person or agency may have had at the time. Table 6 shows the codes used to analyze interactions found in AARs.

Table 6. AAR Interaction Codes

Code	Definition	Note
Fire◇All Agencies	Interaction between fire and all public safety agencies	
Fire◇EMS	Interaction between fire and EMS agencies	Includes interaction between the fire division and EMS division in a combined fire/EMS agency.
Fire◇Fire	Interaction between fire department personnel	Includes interaction between personnel of different fire departments
Law Enforcement◇All Agencies	Interaction between law enforcement and all public safety agencies	
Law Enforcement◇Dispatch	Interaction between law enforcement and a dispatch center	
Law Enforcement◇EMS	Interaction between law enforcement and EMS	Includes interaction between Law Enforcement and the EMS element of a combined fire/EMS agency.
Law Enforcement◇Fire	Interaction between law enforcement and fire department	Includes interaction between Law Enforcement and the Fire element of a combined fire/EMS agency.
Law Enforcement◇Law Enforcement	Interaction between law enforcement personnel	Includes interaction between personnel of different law enforcement agencies.
Law Enforcement◇Perpetrator	Interaction between law enforcement officer(s) and the perpetrator	
Law Enforcement◇Victim	Interaction between law enforcement officer(s) and victim(s)	
Perpetrator◇Victim	Interaction between the perpetrator and the victim	

I classified the results of actions taken during an ASHE incident as either positive, negative, or neutral. Results were classified as positive if the action taken positively affected efforts to mitigate the incident. If the action taken did not affect mitigation efforts, it was considered neutral. Neutral results include those that had both negative and positive effects, which were presumed to cancel or mute the opposite enough to render the action irrelevant. Table 7 shows the codes used to analyze the resulting outcome.

Table 7. Result Outcome Codes

Code	Definition	Note
Negative	Results of actions taken negatively affected efforts to mitigate the incident	
Neutral	Results of actions taken did not affect efforts to mitigate the incident	Includes results that had both negative and positive effects that presumably canceled out or muted each other.
Positive	Results of actions taken positively affected efforts to mitigate the incident	

I defined the “response component” as one of three major response elements to achieve the objectives of the incident. The three components are strategy, tactics, and tasks. Strategy is the overarching plan for the entire response.⁸² Tactics are the steps necessary to execute the plan.⁸³ Tasks are the unique functions performed by individuals to achieve tactical objectives. I then analyzed the data to determine which response component was most discussed in policy. Additionally, I used the data to understand which response component was most affected by actions taken on ASHE scenes. I also used the data to compare and contrast the effect of policy-directed actions and on-scene

⁸² Robert C. Barr and John M. Eversole, eds., *The Fire Chief's Handbook*, 6th ed. (Tulsa, OK: PennWell Corp, 2003), 859.

⁸³ Barr and Eversole, 860.

actions on response components. Table 8 shows the codes used to analyze actions by response component.

Table 8. Response Component Codes

Strategic	Relates to the overarching plan to achieve response objectives
Tactical	Relates to the steps to execute the strategic plan
Task	Relates to the individual functions to execute tactics.

C. FOCUS GROUP DISCUSSIONS

I held two focus group discussions with different objectives for each. The objectives of the first focus group discussion were to:

- Introduce my research to a panel of SMEs and present my findings from the case and policy analysis.
- Validate or adapt my observations at a training exercise.

The objectives of the second focus group discussion were to:

- Collect SME feedback on my findings.
- Have the SMEs determine whether current agency training practices should be changed to incorporate the findings of this research.
- Have the SMEs summarize their conclusions based on research and discussions.

1. Data Collection and Sources

Focus group participants consisted of six local SMEs. The SMEs were from the agencies that developed the policies that were analyzed as part of this research. The SMEs were a captain and a lieutenant from the Brown County Sheriff's Department, a lieutenant and an officer from the Green Bay Police Department, and a battalion chief and assistant chief from the Green Bay metro fire department. The first focus group meeting was held on March 17, 2022, and the second on March 25, 2022.

Answers to all questions asked during the discussions were captured and documented as close to verbatim as possible. The Crawford Slip and Force Field exercises held during the focus group discussion utilized whiteboards and sticky notes to collect participant responses. The Crawford Slip exercise involves participants writing their ideas or responses on a sticky note and posting it along with responses from other participants.⁸⁴ The Force Field exercise also uses sticky notes and has participants writing forces for or against making a change and posting them with responses from other participants. Participants also rate the strength of each force to calculate the overall score of forces for and against the change.⁸⁵ Each phase of the exercises was logged by taking a photograph. Additionally, the actual sticky notes were secured in their final positions at the conclusion of each exercise. Finally, the actual notes and photographs were used to re-create a graphic displaying the results.

I asked focus group participants to hand write their closing thoughts at the end of the discussion. The original handwritten documents were scanned and saved as a PDF file. I read the handwritten documents into transcription software, exported them to a document, and converted them to a PDF file to preserve the original content.

2. Data Analysis Approach

This section explains the data analysis approach used in the two separate focus group discussions.

⁸⁴ "The Crawford Slip," Expert Program Management, accessed May 29, 2022, <https://expertprogrammanagement.com/2010/10/the-crawford-slip/>.

⁸⁵ Mind Tools Content Team, "Force Field Analysis."

a. Focus Group Discussion 1

I presented my findings from the analysis of after-action reviews and department policies to the SMEs. After viewing the findings, SMEs were asked to interpret those findings. Their interpretation was logged as previously described. Additionally, I provided SMEs with copies of my original findings for their review in the nine days between the two focus group discussions. The participants were asked to thoroughly review and provide feedback on the findings and note any additional findings they may have.

To validate my research, I asked the SMEs to analyze my case and policy analysis findings and provide feedback as well as any additional findings. During this focus group discussion, SMEs participated in a Crawford Slip writing brainstorming exercise intended to establish situations that responders should react to at an ASHE incident.⁸⁶ In this slip-writing exercise, focus group participants were asked to respond to the following questions: What stimulus at ASHE incidents should cause a reaction? and What stimulus at ASHE incidents should not cause a reaction? Law enforcement SMEs were directed to write their responses on blue sticky notes and firefighter/EMS SMEs on yellow sticky notes. Participants were given 10 minutes to write down as many responses they could think of. Each response was created independent of any other participant, and duplicate responses were allowed.

After all responses had been posted, I asked participants to rank their responses using a consensus-ranking exercise. Participants first grouped all duplicate responses. Three ranking tiers were established: Tier 1 meant a response was critical and must happen; Tier 2 meant a response was required but it was less time-sensitive or less costly if it did not happen; and Tier 3 meant a response would be helpful but there would be no negative effect if it did not occur. Participants engaged in discussion about which tier each stimulus belonged in and were required to agree on the final rankings.

In a second exercise, I asked participants to view a word cloud created from the excerpts of the AARs. After viewing the word cloud, the SMEs were asked to provide

⁸⁶ Expert Program Management, “The Crawford Slip.”

their interpretation of what it conveyed. The participants initially viewed the word cloud in its raw form and, after providing feedback, were shown the word cloud with the most prominent words highlighted. After showing the highlighted cloud, I observed any change in the participant's response.

b. Focus Group Discussion 2

In the second discussion, SMEs provided their feedback on my findings. SMEs participated in a second slip-writing exercise where they were asked to provide expected responses from law enforcement officers and firefighter paramedics to the stimulus that they provided in the first focus group exercise. Similar to the first exercise, law enforcement provided responses on blue sticky notes and fire/EMS personnel on yellow. Responses were created independently and posted on the board by each participant. Duplicate responses were allowed, and the group was allotted 10 minutes to generate their responses.

Again, three ranking tiers were established: Tier 1 actions were described as the most likely to be effective, most likely going to have a positive outcome, and was the most preferred action; Tier 2 actions would be effective, the outcome may be neutral, and the action was preferred; and Tier 3 actions would be the least effective, most likely to have a negative outcome and the action was least preferred. Consensus was required from all participants during the ranking exercise.

Participants engaged in a Force Field analysis exercise to weigh the merits of incorporating RPDM concepts and findings discussed in the focus group into agency training plans.⁸⁷ SMEs provided reasons, or forces, for incorporating RPDM concepts and focus group findings on blue sticky notes. Forces against incorporating what was learned through the analysis and discussions were written on yellow sticky notes. A whiteboard was divided in half, with one side labeled "For" and the other labeled "Against." For each response, participants rated the strength of each force using a number scale of 1 through

⁸⁷ Mind Tools Content Team, "Force Field Analysis."

5, with 1 being a weak reason and 5, strong.⁸⁸ The sticky notes were then posted on the appropriate side of the board in their corresponding place on the number scale. After all forces had been posted, the strength of the forces for and against was tallied to determine the overall strength of the argument for or against.

The focus group discussions gathered valuable insights from agency SMEs. The first focus group discussion generated a list of driving forces that SMEs would expect responders to react to. The second focus group discussion provided a prioritized list of actions that SMEs expected responders would take during an ASHE. Finally, SMEs provided their input on whether the findings of this research should be incorporated into agency training in a scored exercise.

⁸⁸ Mind Tools Content Team.

IV. POLICY ANALYSIS AND FINDINGS

This chapter includes the analysis and findings of agency policies related to ASHE events. I reviewed two law enforcement policies and two fire and EMS policies within the same county. The purpose of the policy analysis was to determine what actions directed in policy could be considered shared action points at an ASHE. I also sought to understand who was responsible for each action and what outcomes were expected. Finally, because these agencies respond to and train together for ASHE responses, I sought to identify on-scene interactions related to the actions taken. In this Chapter I also analyze the interrelationship between the policies.

During an initial review of the policies, I noted seven specific elements that would be useful to analyze in each of the policies. Each element is important to the research in that they relate to the overall intent of the policy and the expected outcomes of certain actions, whether explicitly stated, implied, or inferred. The seven policy elements identified are

1. the actions expected of responders (policy directive)
2. the reason for the actions
3. the expected outcome of the action
4. the response component the action fit
5. the agency or agencies initiating the action
6. the individuals involved in interactions resulting from the actions taken
7. the potential action points derived from each policy directive

Each of the actions directed or expected in the policies was categorized based on the intent of the action. I developed the categories during the analysis in an iterative process as I recognized trends. For example, direct action means that the actor personally takes action, such as engaging the shooter or applying a tourniquet to a victim's wound. Direction of personnel means that a person directs another person to do something by giving an order or assigning a task. Resource coordination involves requesting a particular

type of resource to the scene or moving resources already at the scene. Communications with hospitals, other agencies, or victims may be direct (face-to-face), by radio or phone, or electronic. It should be noted that some of the actions directed in policy could be placed into more than one of the seven categories. The following seven types of actions are found in agency policies:

1. direct action
2. direction of personnel
3. medical care for the victim(s)
4. resource coordination
5. communications with hospitals
6. communications with other agency (agencies)
7. communications with the victim(s)

A. LAW ENFORCEMENT POLICY REVIEW

I reviewed two law enforcement policies: Brown County Sheriff's Office (BCSO) *Integrated Threat Standard Operating Guidelines* and Green Bay Police Department's (GBPD) Policy 414: "Rapid Response and Deployment" policy. The sheriff's integrated threat policy was developed in 2018 and 2019 in conjunction with all law enforcement agencies in Brown County. The policy's stated purpose is to "establish guidelines and outline procedures for effective law enforcement response to active threats which is integrated with fire and EMS."⁸⁹ GBPD's rapid response and deployment policy is specific to the department and references Brown County's procedures.⁹⁰ The policy directly addresses responses to violent incidents where one or more perpetrators intend to harm or kill a large number of people.⁹¹ As stated in the document, "The purpose of this policy is to identify guidelines and factors that will assist officers in situations that call for

⁸⁹ Brown County Sheriff's Office, *Integrated Threat SOG*, sec. A.

⁹⁰ Green Bay Police Department, *Rapid Response and Deployment*, sec. 414.3 a.

⁹¹ Green Bay Police Department, 414.1.

rapid response and deployment.”⁹² The BCSO guideline provides overarching guidance for all law enforcement agencies in the county, while GBPD’s policy provides agency-specific direction and augments the countywide guideline.

The city of Green Bay resides entirely within Brown County. Brown County’s population in the 2020 census was 268,740.⁹³ With a population of 107,395 in the same census, Green Bay is the largest city in the county and the third largest city in Wisconsin.⁹⁴ Though BCSO has jurisdiction throughout the county, the city’s primary law enforcement agency is the GBPD. Figure 1 shows a map of the municipalities within Brown County.⁹⁵

⁹² Green Bay Police Department, sec. 414.1.

⁹³ Census Bureau, “Brown County, Wisconsin,” QuickFacts, accessed May 2, 2022, <https://www.census.gov/quickfacts/browncountywisconsin>.

⁹⁴ Census Bureau, “Green Bay City, Wisconsin,” QuickFacts, accessed May 2, 2022, <https://www.census.gov/quickfacts/greenbaycitywisconsin>; Tom Giffey, “Census: E.C. Growing Faster Than Most Big Wisco Cities,” VolumeOne, August 12, 2021, <https://volumeone.org/articles/2021/08/12/281370-census-ec-growing-faster-than-most-big-wisco>.

⁹⁵ Brown County, “Official GIS Map of Brown County WI,” BrownDog, 2022, <https://browncounty.maps.arcgis.com/apps/webappviewer/index.html?id=61fba3fd419045e48aa6ba759838387c>.

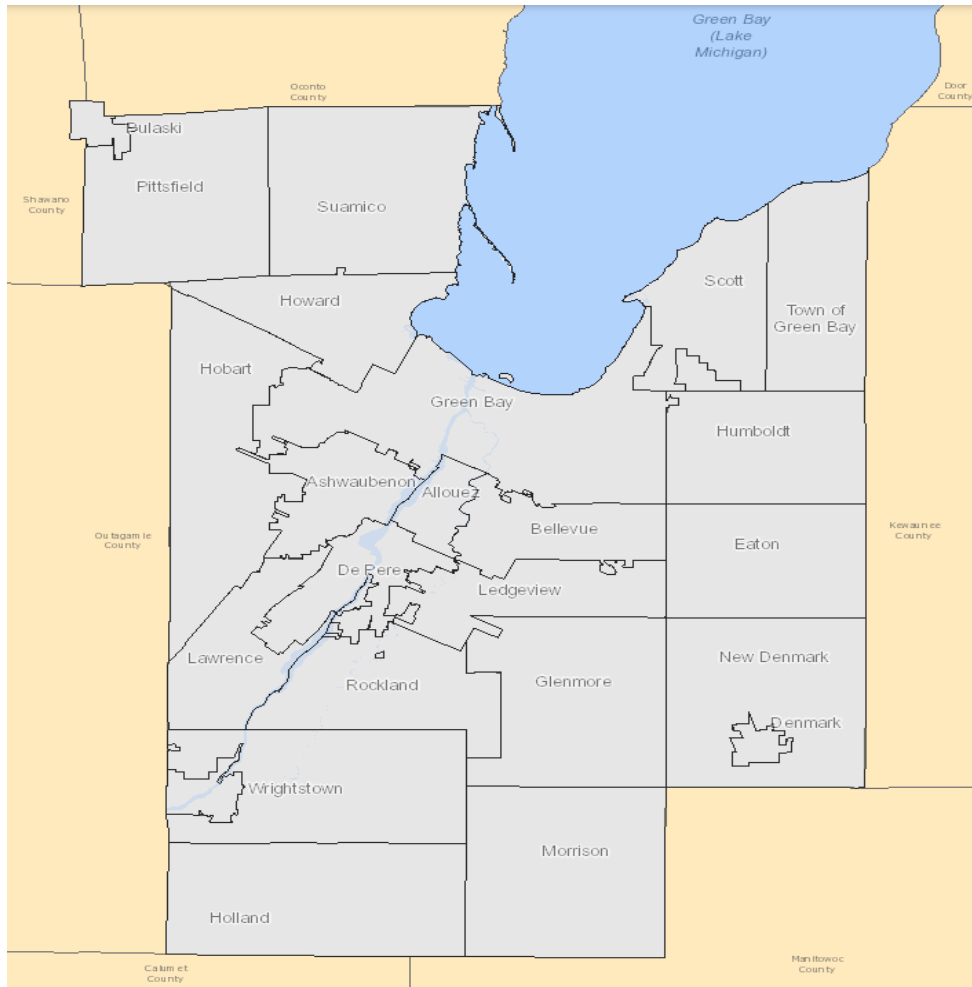


Figure 1. Brown County, WI, Municipality Map

1. Brown County Law Enforcement Agencies – Integrated Threat Standard Operating Guidelines

BCSO’s integrated threat policy directs officers to call for a “tactical alert” when an ASHE incident occurs.⁹⁶ A tactical alert is a response level determined by the sheriff’s office that directs all available law enforcement officers in the county to respond to the scene.⁹⁷ The tactical alert level also directs the communications center to alert fire and

⁹⁶ Brown County Sheriff’s Office, *Integrated Threat SOG*, 2.

⁹⁷ Brown County Sheriff’s Office, *Brown County A.L.E.R.T.* (Green Bay, WI: Brown County Sheriff’s Office, 2019), 1.

EMS agencies.⁹⁸ The recognition of an ASHE incident should result in a shared action point of requesting a “tactical alert.” This shared action point is critical because it begins the response and is shared between all response enforcement agencies.

Section D3, Initial Law Enforcement Response, of the integrated threat policy directs the officer to engage the subject if a driving force is present.⁹⁹ The same section defines driving force as “action, information, intelligence or conditions which drive the decision-making process.”¹⁰⁰ This guideline section further identifies two primary driving forces: stop the killing and stop the dying.¹⁰¹ If no driving force indicates the assailant is actively engaged in harming people, the policy directs that the officer “must perform tactical emergency casualty care on injured victims and prioritize rapid casualty evacuation.”¹⁰² This section of the policy provides two shared action points. The first is that on recognizing a driving force indicating the assailant is active, the officer should engage the assailant and communicate the situation to other responding law enforcement officers. The second point is recognizing that driving forces indicate the need for medical care.

Section D3 further directs the first officer arriving on the scene to “give a size-up report and identify the hot zone.”¹⁰³ Identifying the hot zone is critical information for other responding personnel, particularly fire and EMS. Additionally, identifying the hot zone affects decisions regarding what areas RTFs can operate in, placement of the staging area, and routes used by incoming responders. An officer recognizing that they are the first to arrive on the scene should take the action of giving a size-up report and communicating the existence of, and boundaries of, the hot zone. This shared action point is also critical because it directly affects all responding agencies.

⁹⁸ Brown County Sheriff’s Office, 1.

⁹⁹ Brown County Sheriff’s Office, *Integrated Threat SOG*, sec. D3.

¹⁰⁰ Brown County Sheriff’s Office, sec. D3.

¹⁰¹ Brown County Sheriff’s Office, sec. D3, 1.; Brown County Sheriff’s Office, sec. D3, 2.

¹⁰² Brown County Sheriff’s Office, *Integrated Threat SOG*, sec. D3, 2.

¹⁰³ Brown County Sheriff’s Office, sec. D3.

Section D4 of the integrated threat guideline directs the officer assuming the role of tactical group supervisor to identify themselves as “tactical” on the radio.¹⁰⁴ The use of this terminology on the radio communicates to all other personnel that a particular officer is commanding law enforcement tactical operations. The identified shared action point is that on assuming the role of tactical group supervisor, the officer recognizes the need to change their radio ID to tactical. Additional action points are identified for the tactical group supervisor, including forming and directing contact teams, establishing a joint staging area, coordinating with the rescue group supervisor, identifying tactical objectives, coordinating resources, and accounting for personnel in the hot zone.¹⁰⁵ Another critically important shared action point defined in section D4 is the early establishment of unified command. The policy directs that the tactical group supervisor will work with the rescue group supervisor to form unified command.¹⁰⁶ The formation of unified command during an ASHE is vital, and recognizing the need for it early in the incident is imperative.

The integrated threat guideline further defines actions to be taken by the staging area manager. The first law enforcement officer to arrive at the staging location is to assume the role of staging manager and use the radio ID of “staging.”¹⁰⁷ In addition, the guideline further directs all officers who are not part of the initial response to report to the staging area.¹⁰⁸ One shared action point identified here is for the first officer to arrive in the staging area to recognize that, assume the role of staging, and communicate it by radio. Additionally, all incoming officers should recognize that a staging area has been established and report to that location. Another essential directive identified concerning the staging area is to maintain scene access by ensuring vehicles are parked properly.¹⁰⁹

¹⁰⁴ Brown County Sheriff’s Office, sec. D4.

¹⁰⁵ Brown County Sheriff’s Office, sec. D4, i-vi.

¹⁰⁶ Brown County Sheriff’s Office, D4.

¹⁰⁷ Brown County Sheriff’s Office, sec. D5.

¹⁰⁸ Brown County Sheriff’s Office, sec. D6.

¹⁰⁹ Brown County Sheriff’s Office, sec. D6.

Personnel responding to an ASHE incident must recognize the importance of scene access and take action to position vehicles accordingly.

Section D7, Rapid Casualty Evacuation, of the guideline directs officers to prioritize the evacuation of casualties in coordination with the tactical group supervisor.¹¹⁰ Officers operating in the warm zone and recognizing that casualties are present need to communicate with the tactical and rescue group supervisors to coordinate an evacuation.¹¹¹ Law enforcement officers are directed to establish casualty collection and ambulance exchange points, a security cordon between the two, and permanent security for both.¹¹² The policy expects officers to communicate victim counts and statuses and the need for RTFs by radio so that casualty evacuation occurs as quickly and efficiently as possible.

Section D8, Rescue Task Force, of the BCSO guideline provides direction on the actions of law enforcement officers assigned to work as part of an RTF. This section indicates that the driving force for the RTF is rescuing victims.¹¹³ However, the policy provides that officers assigned to an RTF can suspend the rescue operation or hold in place to protect the RTF.¹¹⁴ The identified shared action point is that on recognizing a threat or potential threat to an RTF exists, officers should direct the RTF to a safer location or stop the RTF from moving closer to the threat.

One of the final directives in the guideline provides shared action points related to the command of an ASHE incident. The policy directs that the first law enforcement supervisor on the scene should form unified command with the fire supervisor and use the radio ID of “command.”¹¹⁵ A series of responsibilities are outlined for the law enforcement incident commander including establishing unified command, verifying that

¹¹⁰ Brown County Sheriff’s Office, sec. D7.

¹¹¹ Brown County Sheriff’s Office, sec. D7.

¹¹² Brown County Sheriff’s Office, sec. D7, i-iv.

¹¹³ Brown County Sheriff’s Office, sec. D8, v.

¹¹⁴ Brown County Sheriff’s Office, sec. D8, v.

¹¹⁵ Brown County Sheriff’s Office, sec. D9.

staging and rescue groups have been established, and assigning several other groups and functions. While not all these responsibilities are necessarily shared action points, recognizing that the supervisor is responsible for establishing and clearly communicating command is a shared action point.

2. Green Bay Police Department Rapid Response and Deployment Policy

Section 414.3, First Response, GBPD's Rapid Response and Deployment policy directs officers to directly engage and request assistance if an assailant is "actively engaged in the infliction of serious bodily harm or other life-threatening activity towards others."¹¹⁶ The expectation is that the action taken will stop the assailant from harming or killing additional people. The policy specifically states that an officer should "request through a supervisor to initiate the Brown County Alert procedures."¹¹⁷ Similar to BCSO's policy, the officer should recognize that the perpetrator is engaging in injuring or killing people and engage the suspect while calling for assistance from additional law enforcement officers. The section also directs officers to consider the available equipment when deciding when and how to engage the suspect.¹¹⁸ It is expected that law enforcement will use all available weapons and tools to gain an advantage over the perpetrator of an ASHE. This provides the shared action point of recognizing that an ASHE will require the officer to use different or alternative weapons, tools, or other devices that they may not use regularly.

GBPD policy specifically addresses a transition point in an ASHE as well as dispatch actions. The policy directs that if a subject has barricaded themselves or is otherwise trapped in a manner that makes them no longer a threat, the officer should change tactics. The policy outlines such tactics as "covering escape routes and evacuating persons as appropriate while summoning and waiting for additional assistance."¹¹⁹

¹¹⁶ Green Bay Police Department, *Rapid Response and Deployment*, sec. 414.3.

¹¹⁷ Green Bay Police Department, sec. 414.3 (a).

¹¹⁸ Green Bay Police Department, sec. 414.3 (h).

¹¹⁹ Green Bay Police Department, sec. 414.3.

Recognition that the incident has transitioned from one that poses an active threat to one that allows for prioritization of victim rescue is a pivotal shared action point. By incorporating Brown County’s alert policy, GBPD’s policy also directs the use of the “HOSTIL” computer-aided dispatch code by the dispatch center.¹²⁰ Use of this code creates the shared action point of recognizing that a 911 caller is reporting an ASHE incident and using the proper code so that the appropriate fire and EMS resources are dispatched.

These two law enforcement policies provide significant guidance to all law enforcement agencies in Brown County and specifically to the Green Bay Police Department. The analysis of the policies offered several shared action points that influence all agencies involved in an ASHE. The integrated nature of these policies demonstrates the importance of analyzing and understanding the actions taken by individuals and agencies and how they may drive the actions of a different individual or agency. Table 9 summarizes the shared action points identified in law enforcement policies.

Table 9. Law Enforcement Shared Action Points from Policy

Shared Action Point	Category of action
Call a tactical alert	Communications with other agency
Consider alternative weapons	Direct action
Engage the subject	Direct action
Communicate updates	Communications with other agency
Identify the hot zone	Communications with other agency
Assume tactical group supervisor	Direction of personnel
Subject barricades, change tactic	Direct action
Form contact teams	Resource coordination
Establish joint staging area	Resource coordination
Identify tactical objectives	Direction of personnel
Establish unified command	Resource coordination/direction of personnel
Report to staging	Direct action
Prioritize evacuation of casualties	Direct action

¹²⁰ Green Bay Police Department, 5.

Shared Action Point	Category of action
Communicate victim count/status	Communications with other agency
Suspend/hold RTF	Direction of personnel

B. FIRE AND EMERGENCY MEDICAL SERVICE POLICY REVIEW

The Green Bay Metro Fire Department (GBMFD) serves the city of Green Bay, the village of Allouez, and the village of Bellevue. Based on the 2020 census, the department serves a combined population of 137,486 and covers a land area of 64.42 square miles.¹²¹ GBMFD provides fire and emergency medical services and responds and trains regularly with GBPD. The Green Bay Fire Department merged with the village of Allouez Fire Department and village of Bellevue Fire Department in 2012 and 2020, respectively.¹²² Since those mergers, GBMFD also responds and trains with BCSO as the primary law enforcement agency in both villages.

1. Green Bay Metro Fire Department 0204.11 *Response to Active Threat Incidents* Standard Operating Guideline

GBMFD's guideline outlines several specific actions related to communications and notifications. The policy directs the battalion chief to monitor the law enforcement radio channel to establish communication and gather incident information.¹²³ The battalion chief is to use the information to determine what additional resources are needed.¹²⁴ Additionally, the battalion chief is to ensure that all the hospitals are notified

¹²¹ Census Bureau, "Allouez Village, Wisconsin," QuickFacts, accessed May 2, 2022, <https://www.census.gov/quickfacts/fact/table/allouezvillagewisconsin/LND110210>; Census Bureau, "Bellevue Village, Wisconsin," QuickFacts, accessed May 2, 2022, <https://www.census.gov/quickfacts/bellevuevillagewisconsin>; Census Bureau, "Green Bay."

¹²² City of Green Bay and Village of Allouez, *Fire Department Consolidation Agreement City of Green Bay and Village of Allouez* (Green Bay, WI: City of Green Bay, 2012); City of Green Bay and Village of Bellevue, *Fire Department Consolidation Agreement City of Green Bay and Village of Bellevue* (Green Bay, WI: City of Green Bay, 2020).

¹²³ Green Bay Metro Fire Department, *Response to Active Threat*, sec. 1b.

¹²⁴ Green Bay Metro Fire Department, sec. 1b, ii.

to prepare for multiple trauma patients.¹²⁵ All of these actions should happen as soon as the battalion chief recognizes that an ASHE is occurring.

Standard Operating Guideline 0204.11 also directs action concerning incident command. The guideline states that the first fire unit to arrive on the scene will assume the role of the rescue group supervisor and link up with law enforcement's tactical group supervisor.¹²⁶ This linkup establishes immediate coordination between law enforcement and fire/EMS and starts the formation of unified command. GBMFD then directs that a unified command post should be established as soon as possible, either by the first arriving law enforcement unit or, if law enforcement is engaged in emergency tactical operations, the first arriving fire unit.¹²⁷ Once the incident command post (ICP) is established, the dispatch center is directed to announce its location.¹²⁸ These shared action points require the first arriving fire unit to recognize that they are the first on scene and, as a result, must link up with law enforcement and form unified command. Additionally, the dispatch center must recognize that the ICP has been established and take the action of communicating its location.

Section 4 of the guideline directs the formation and use of RTFs. A rescue group supervisor must be assigned to coordinate the functions of RTFs.¹²⁹ RTFs should be formed and ready to respond to the warm zone as soon as units arrive in staging.¹³⁰ The incident commander will then direct the RTFs into the warm zone as necessary to provide medical care to victims.¹³¹ Several actions in this section would occur based on the recognition of other actions or incident factors. First, there must be recognition that there are victims in need of medical care, which would initiate the formation of RTFs. Second, recognition that the perpetrator has been neutralized or contained triggers the declaration

¹²⁵ Green Bay Metro Fire Department, sec. 1d.

¹²⁶ Green Bay Metro Fire Department, sec. 1e; Green Bay Metro Fire Department, sec. 1f.

¹²⁷ Green Bay Metro Fire Department, *Response to Active Threat*, sec. 3c.

¹²⁸ Green Bay Metro Fire Department, sec. 3e, i.

¹²⁹ Green Bay Metro Fire Department, sec. 4a.

¹³⁰ Green Bay Metro Fire Department, sec. 4a.

¹³¹ Green Bay Metro Fire Department, sec. 4b.

of a warm zone and delineation of its boundaries. Finally, there must be recognition that a warm zone exists, meaning that the RTFs can be deployed to render aid.

Sections 6 and 7 of GBMFD's guideline direct the management of victims, including evacuation, casualty collection points (CCP), triage, treatment, and transport operations. Establishing a CCP is directed if the incident warrants it.¹³² The CCP may be set by law enforcement before the arrival of RTFs or by the first arriving RTF.¹³³ If a CCP is created, the RTF creating it is directed to communicate its location and the reason for forming it to the incident commander.¹³⁴ The role of medical group supervisor will be assigned to oversee the treatment, triage, and transport of patients.¹³⁵ Any law enforcement officer transporting a patient is directed to contact the transport officer to coordinate which hospital to take the patient to.¹³⁶ Again, several shared action points depend on recognition of other actions or incident factors. Establishing a CCP and assigning a medical group supervisor first requires recognizing that victims are present and need medical care. Personnel must also recognize that establishing a CCP requires the action of notifying the incident commander so that the incident commander can support it. Finally, any law enforcement officer who decides to transport a patient must recognize the need to coordinate that transport with medical personnel.

The final two policy directives that provide shared action points are found in sections 8 and 11. Section 8 directs that fire and EMS personnel be assigned to check the cold zone for victims who may have fled the incident site to ensure that they receive aid.¹³⁷ Section 11 directs personnel to operate in priority radio traffic mode during the active phase of an ASHE to limit radio communications to only what is necessary.¹³⁸ Assigning personnel to check the cold zone for victims first requires recognition that a

¹³² Green Bay Metro Fire Department, sec. 6b.

¹³³ Green Bay Metro Fire Department, sec. 6b; Green Bay Metro Fire Department, sec. 6c.

¹³⁴ Green Bay Metro Fire Department, *Response to Active Threat*, sec. 6f.

¹³⁵ Green Bay Metro Fire Department, sec. 7a.

¹³⁶ Green Bay Metro Fire Department, sec. 7e, iii.

¹³⁷ Green Bay Metro Fire Department, sec. 8a.

¹³⁸ Green Bay Metro Fire Department, sec. 11a.

cold zone has been established. Operating in priority radio traffic mode requires recognition that an ASHE is occurring. Table 10 summarizes the shared action points identified in fire and EMS policies.

Table 10. Fire/EMS Shared Action Points from Policy

Shared Action Point	Category of action
Monitor LE radio channel	Communications with other agency
Check cold zone for victims	Direct action
Link up with LE tactical group supervisor	Communications with other agency
Report victim count and status	Communications with other agency
Direct RTFs to warm zone	Direction of personnel
Form RTFs	Direct action
Request additional resources	Resource coordination
Communicate LE transport of patient	Communications with Hospitals
Establish unified command	Resource coordination/direction of personnel
Form CCP	Direct action
Communicate ICP location	Communications with other agency
Evacuate victims	Direct action
Notify hospitals of ASHE response	Communications with hospitals

2. MABAS Division 112 Response to Violent Incidents

The MABAS policy pertaining to violent incident responses is a policy that covers all fire departments in Brown County. The policy provides very generalized guidance meant to augment agency-specific policies. The varied nature of fire department operations and the services provided require this guideline to be overarching and less directive. As a result, this guideline did not yield any potential shared action points for this research.

C. ASHE POLICY INTERRELATIONSHIPS

The responsibility for specific action defined within policies is skewed heavily based on how the policies are written and the policy analysis found significant differences in how agency policies are written. How policy is written influences the findings of who is responsible for actions directed in the policy. Law enforcement policies were found to be overarching conceptual documents compared to fire and EMS policies, which were more directive and less conceptual. Law enforcement policies did not assign specific actions as frequently or explicitly as fire rescue policies did. For example, GBPD’s “Rapid Response and Deployment” policy provided a list of considerations an officer should think about to decide on a course of action.¹³⁹ In contrast, GBMFD’s *Response to Active Threat Incidents* policy listed specific tasks to be carried out by the first arriving fire officer.¹⁴⁰ While the format and style of the policy may skew the assignment of responsibility findings, the intent of the policies is not altered. Table 11 provides examples of actions directed in agency policies.

Table 11. Driving Forces, Policy Actions, and Agency Responsible

Driving Force	Policy Directed Action	Agency Responsible
Dispatched to ASHE	Monitor PD radio channel	Fire
Dispatched to ASHE	Request TAC alert	LE
Dispatched to ASHE	Notify all local hospitals	Fire/EMS
First to arrive at ASHE	Seek out LE “tactical command”	Fire/EMS
Hear that ICP is established	Announce ICP location	Dispatch
Warm zone established	Direct RTFs into Warm zone	LE
Driving force indicates threat	Engage the threat	LE
Fire/EMS arrive in staging	Immediately start forming RTFs	EMS

I found that agency policies focused very heavily on the tactical and strategic response components. Figure 2 shows that 55% of policy-directed actions were

¹³⁹ Green Bay Police Department, *Rapid Response and Deployment*, 1.

¹⁴⁰ Green Bay Metro Fire Department, *Response to Active Threat*, 3.

categorized as tactical, while 10% of the actions directed in policy are in the task response component. Given that tasks are the individual actions employed to carry out tactics, this disparity in policy direction is an unexpected finding. Despite being unexpected, the finding does not necessarily indicate a policy problem. Policies should not be so specific as to attempt to address every possible situation, though agencies may want to evaluate whether more balance between tactical and task direction is needed in the future.

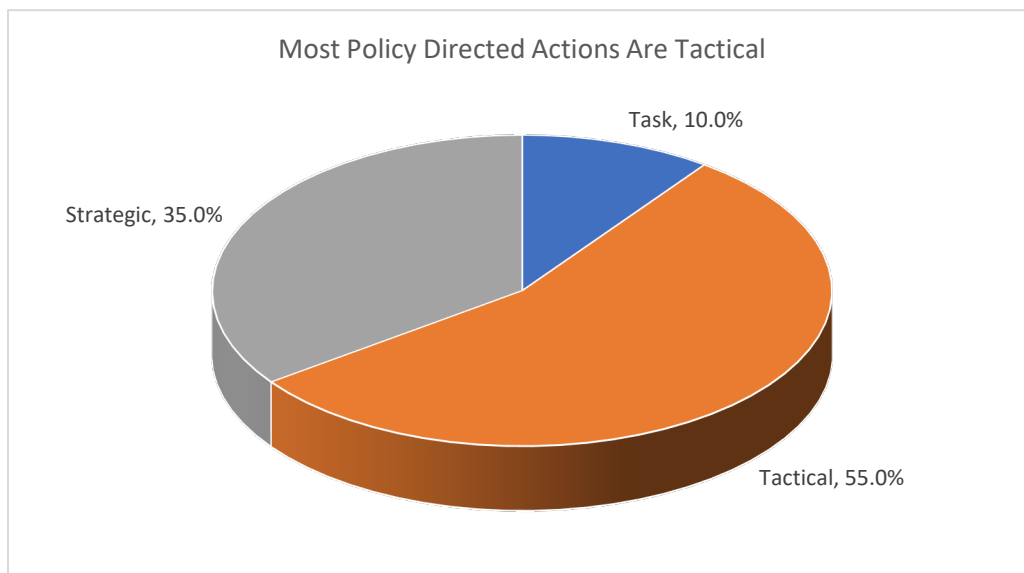


Figure 2. Policy Directed Actions by Response Component

As demonstrated earlier in this chapter, agency policies assign certain actions to the agency's personnel. If a certain agency's policy assigned an action, I considered that agency to be responsible for initiating that action. In some cases, the action was assigned in more than one policy, indicating that either agency could assume responsibility. It should be noted that the directed action may be indicated in another agency's policy. In other words, a fire rescue policy may state that law enforcement will do "X," which I considered a law enforcement-initiated action. The data from all policies showed that law enforcement appears to initiate most actions at ASHE incidents. Of the 40 directed actions found in policy, 28 are either *only* initiated by law enforcement or *may* be initiated by law

enforcement. Figure 3 demonstrates how frequently each agency initiates an action based on policy direction.

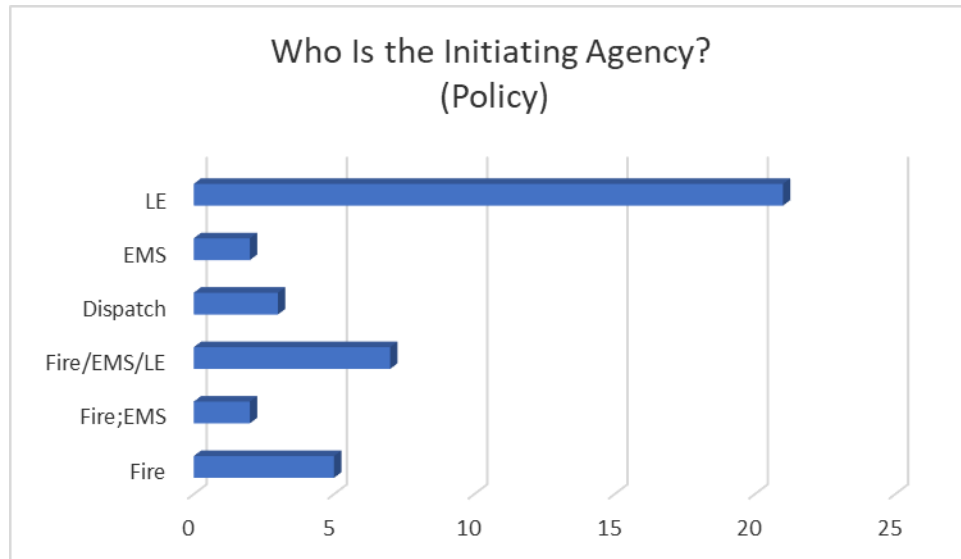


Figure 3. Initiating Agency by Policy

It is not surprising that law enforcement, as the agency initiating most actions, is the predominant agency in on-scene interactions. Figure 4 shows the most frequent interactions during an ASHE incident according to policy. Larger lines indicate more interaction, and lines pointing back at the same entity indicate interaction within that same entity or agency of the same discipline. Law enforcement is involved in 86% of the exchanges. An unexpectedly low amount of policy indicated an interaction between fire rescue personnel and victims. However, interactions between fire rescue and victims are accounted for in other policies that relate specifically to patient care for all types of incidents, not just ASHE.

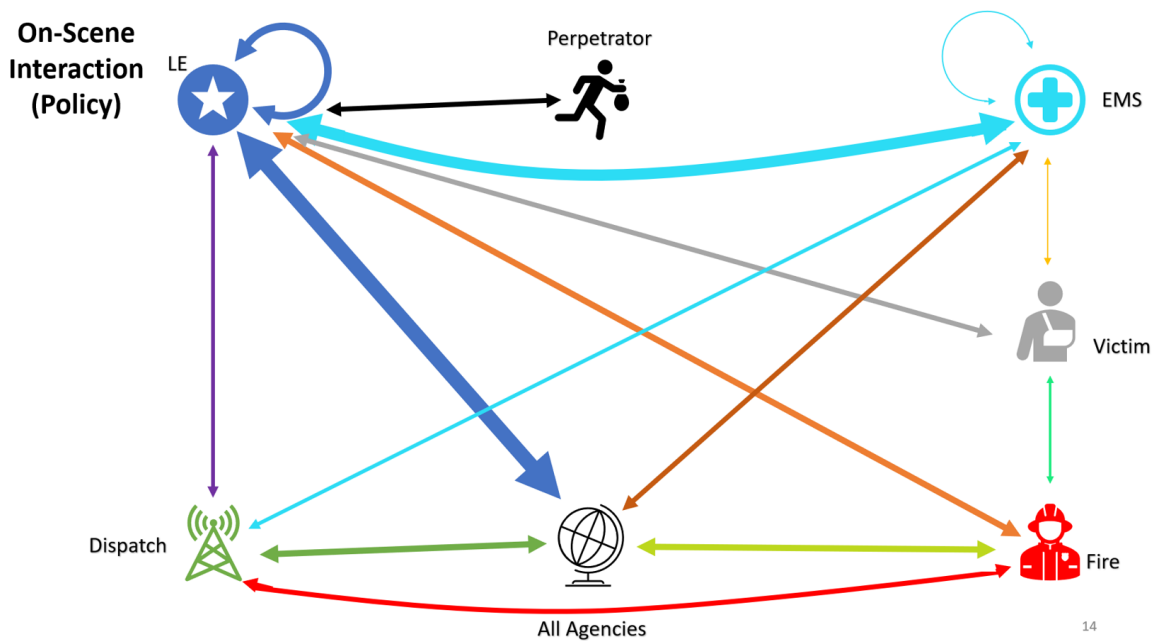


Figure 4. Frequent Interaction during ASHE Incidents Based on Policy

The interrelationship between the policies is evident in that each policy refers to actions that are to be taken by other agencies or directs interaction with other agencies and disciplines. The actions and interactions revealed in this analysis are the foundation for the shared action points between agencies explored by this thesis. For example, fire rescue policy directs that the first arriving fire unit will seek out the law enforcement person who has assumed the role of “tactical command.”¹⁴¹ Fire rescue policy also states that RTFs formed at the direction of fire rescue policy will be directed by law enforcement into the warm zones established by law enforcement.¹⁴² The BCSO requirement that the first arriving law enforcement officer give a size-up report and identify the hot zone is intended to set the stage for all other agencies.¹⁴³ In turn, fire rescue commanders should hear the size-up report as their policy directs the responding battalion chief to monitor law enforcement radio traffic as soon as they are dispatched to an ASHE.¹⁴⁴ BCSO’s policy

¹⁴¹ Green Bay Metro Fire Department, 3.

¹⁴² Green Bay Metro Fire Department, 6.

¹⁴³ Brown County Sheriff’s Office, *Integrated Threat SOG*, 4.

¹⁴⁴ Green Bay Metro Fire Department, *Response to Active Threat*, 2.

indicates that law enforcement officers operating as part of an RTF should hold or redirect the RTF if a threat or potential threat develops.¹⁴⁵ The GBPD policy directs that if the perpetrator barricades themselves or becomes trapped, law enforcement policies direct that law enforcement officers cover escape routes and begin evacuating people. Law enforcement actions in that situation allow the hot zone to shrink and the warm zone to grow, allowing RTFs to start treating and extracting victims.¹⁴⁶

The linkages between these policies establish that all responding agencies are dependent on one another's actions to carry out their ultimate mission. The interrelationship between policies should be revisited to ensure that when an agency is assigned responsibility for action in a different agency's policy, it is also assigned in their own. Given the cross-disciplinary dependency, the agencies involved must continue to train together and emphasize the importance of the shared action points.

D. SUMMARY OF POLICY ANALYSIS FINDINGS

The policy analysis found that several shared action points exist in agency policies. Moreover, individual agency policies call for action to be taken based on the actions of another agency. This finding indicates that agencies expect shared action points to be recognized and acted on. The expectation that shared action points are recognized and acted on demonstrates the importance of identifying them and communicating them to responders to ensure that critical on scene interactions occur.

¹⁴⁵ Brown County Sheriff's Office, *Integrated Threat SOG*, 7.

¹⁴⁶ Green Bay Police Department, *Rapid Response and Deployment*, 2.

V. CASE ANALYSIS AND FINDINGS

This chapter discusses the analysis and findings of after-action reviews from four ASHEs. The incident analysis used publicly available after-action reports. The four incidents used for data collection were:

1. Inland Regional Center in San Bernardino, California
2. Pulse nightclub in Orlando, Florida
3. Harvest Music Festival in Las Vegas, Nevada
4. Marjory Stoneman Douglas High School in Parkland, Florida

The purpose of analyzing these incidents was to determine if actions taken at an actual ASHE could serve as shared action points for agencies during future responses. I analyzed each case to identify what actions an agency or individual took and who/what agency those actions affected. I also documented the reason the action was taken. The documented reason is assumed to be the specific driving force that was recognized, or should have been recognized, by a responder. Understanding what driving force the responder reacted to is important within the context of an RPDM framework.

The analysis and findings of the AARs include both individual and agency actions taken at each incident. The actions taken, or not taken, are considered in the light of what driving force was recognized, whether a corresponding action resulted, and whether the actions had a positive, negative, or neutral result. Positive outcomes aided in moving the incident toward mitigation, while negative actions delayed mitigation. Neutral actions may have resulted from an action having both positive and negative outcomes or no discernable effect on outcomes.

Additionally, the chapter examines the interactions between agencies, victims, and the perpetrator in actual incidents. Example driving forces, actions, corresponding actions, and outcomes are shown in Table 12.

Table 12. Driving Forces, Actions, and Outcomes

Driving Force	Action Taken	Corresponding Action	Outcome
Recognize suspicious package	Clear the room	Bomb technician finds explosive device	Positive
Recognize triage tag would not work in a wet environment	Improvise use of colored tape	N/A	Positive
Recognize location of shooter	Transmit location over radio	LEOs respond to shooter's location	Positive
Recognize presence of victims	Transmit information over radio	Responders make plans and notifications, and form RTFs on arrival	Positive
Arrive on scene	Did not assume Command	Called more resources to the scene	Neutral
LEO recognizes subject has barricaded self	Begins treating victims	Victims moved to EMS for care	Positive
LEO hears shooting in a school	Does not engage shooter, directs other LEOs to stay back	Shooter continues firing at victims	Negative

LEO = law enforcement officer

A. CASE 1: SAN BERNARDINO INLAND REGIONAL CENTER

The shooting at the Inland Regional Center in San Bernardino, California, provides a unique opportunity for analysis because it involved two shooters, two crime scenes, and a non-traditional response from law enforcement utilizing probation officers. The actions taken by responders had both positive and negative effects on the incident outcome. The actions initiated by responders often generated a corresponding action and provided several possible shared action points. The analysis found 14 actions and 10 corresponding actions. The results of those actions were classified as positive nine times and negative five times, with no outcomes classified as neutral.

One of the first identifiable action points at the Inland Regional Center occurred shortly after the officers' arrival. While the officers approached the building, they immediately noted three deceased people. Immediately upon approaching the door, officers could hear people calling for help and moaning inside the building.¹⁴⁷ It is unknown whether recognizing three deceased people initiated an action or a corresponding action, such as transmitting critical information over the radio. Transmitting such information over the radio provides situational awareness for other responders by confirming that an active shooter is occurring and that there are injuries at the scene. The change in situational awareness starts a chain of events wherein each responder's mindset changes, specific equipment is made ready, and distinct strategic actions take place. For example, a responder now knows that they are responding to an actual active shooter, not just the report of an active shooter. They prepare specific weaponry and body armor and begin to form RTFs in the staging area on arrival, all potentially based on one radio transmission.

Another potential shared action point occurred in the early phase of the response, as officers were arriving on the scene. Officers parked their squad cars as close as possible to the building to quickly engage the shooters.¹⁴⁸ The cars cluttered the scene to the point that fire and EMS vehicles could not access the building, making the transport of patients difficult. When dispatched to an ASHE, there must be recognition that fire and EMS access to victims is imperative. The shared action point is that on recognition of being dispatched to an ASHE incident, incoming responders must establish and utilize a staging area.

While engaging the shooters from IRC, one law enforcement officer recognized that one of the shooters was donning a vest that may have been loaded with explosives or body armor.¹⁴⁹ The officer transmitted this information via radio to all other officers, making them aware that the perpetrator may be more difficult to neutralize. Shortly after

¹⁴⁷ Braziel et al., *Bringing Calm to Chaos*, 29, 30.

¹⁴⁸ Braziel et al., 31.

¹⁴⁹ Braziel et al., 38.

noticing this, officers stopped the vehicle with the vested suspect inside, and a shootout ensued, which was also transmitted over the radio. The action point identified here is again transmitting critical information over the radio to other responders.

While working inside the building, an officer recognized a suspicious bag. The officer cleared the room and called in bomb technicians, who ultimately determined the bag to be a secondary explosive device.¹⁵⁰ Recognition of a potential secondary device and the corresponding decision to evacuate the area and call bomb technicians is an example of RPDm. The shared action point is that any suspicious package recognized by an agency should be called in and cleared to ensure the safety of victims and responders.

There were additional instances of responders deciding to initiate particular action based on things they recognized on the scene. In one case, this involved improvising methods to carry patients who were soaking wet because of the fire sprinkler system functioning.¹⁵¹ Another was the improvised use of tape in place of triage tags after recognizing that the triage tags would not work in the wet environment.¹⁵² Additionally, fire and law enforcement personnel recognized that the triage area was too close to the hot zone and took action to move it so that responders and victims were better protected.¹⁵³ Finally, responders recognized that no system was used to identify rooms that had already been cleared of victims.¹⁵⁴ It is unknown whether a corresponding action was taken to resolve the situation, but it identifies that shared action point. The following list summarizes the action points from this case:

1. On recognizing that victims exist, whether deceased or not, transmit over the radio to verify the extent of the incident.
2. On recognizing that living, viable victims exist, immediately call for RTFs for rescue.

¹⁵⁰ Braziel et al., 36.

¹⁵¹ Braziel et al., 34.

¹⁵² Braziel et al., 35.

¹⁵³ Braziel et al., 34.

¹⁵⁴ Braziel et al., 33.

3. On recognizing that an ASHE incident is occurring, form and use a staging area.
4. On recognizing the need to increase coordination, ensure that ICS is being utilized (i.e., assume command if no one has).
5. On recognizing that doors are not being marked when rooms are cleared, communicate the need to mark doors, begin marking doors.
6. On recognizing that triage is too close to the hot zone, relocate it to a safer position.
7. On recognizing that mobility or rescue is limited by a condition, improvise methods to improve mobility/rescue.
8. On recognizing that triage tags do not work, improvise an alternative.
9. On recognizing a suspicious bag or object, report it, clear the area, and call bomb technicians.
10. On recognizing that a responder has critical information, transmit critical information over the air (perpetrator [s] may be wearing ballistic gear or explosive vest).
11. On recognizing that a responder has critical information, transmit the information over the radio (shots fired at officers).
12. On recognizing that an officer has been shot, render aid if possible.
13. On recognizing that equipment is missing, improvise use of other equipment or available objects.
14. On recognizing that one part of the operation is sufficiently staffed, re-assign personnel to unfilled roles.

B. CASE 2: HARVEST MUSIC FESTIVAL

The Harvest Music Festival shooting in Las Vegas, NV, is notable because of the massive number of people killed or wounded during the event. Additionally, the shooter

was in an elevated position, separated from the venue he was shooting at. The analysis yielded 24 identified actions with 19 corresponding actions. The result of these actions was classified as positive 17 times, negative four times, and neutral four times.

As the shooting at this incident started, an officer recognized that the perpetrator was in an elevated firing position at a separate location and transmitted this information over the radio.¹⁵⁵ The corresponding action taken by responding officers was to respond to the respective location to engage the shooter rather than the venue where the victims were located. The shared action point is recognizing critical information and transmitting it over the radio.

Officers in the same building as the shooter could hear gunfire on the 32nd floor. The officers staged in the stairwell landing because they were unsure what was happening due to poor radio signal.¹⁵⁶ The perpetrator continued firing. The shared action point is that law enforcement doctrine indicates that officers should engage once the shooter's location is determined. Radio communication problems also plagued SWAT officers operating in the building, who began communicating through the fire department personnel they were paired up with.¹⁵⁷ The fire department radios worked better, but fire dispatchers receiving the information were unsure what to do with it.¹⁵⁸ There are two shared action points identified here. First, when recognizing that communications equipment is not working effectively, take action to resolve the problem. Second regarding the fire dispatchers, if you recognize that you are receiving important information, take action to ensure that it gets to the correct place.

Law enforcement quickly noted several wounded or deceased victims. An officer transmitted the situation over the radio to the dispatch center.¹⁵⁹ The transmission of this information confirmed that victims were present and demonstrated the need for RTFs to

¹⁵⁵ Lombardo, *1 October AAR*, 19; Lombardo, 24.

¹⁵⁶ Lombardo, *1 October AAR*, 28.

¹⁵⁷ Federal Emergency Management Agency, *1 October After-Action Report* (Washington, DC: Federal Emergency Management Agency, 2018), 45.

¹⁵⁸ Federal Emergency Management Agency, 45.

¹⁵⁹ Lombardo, *1 October AAR*, 41.

incoming responders. The shared action point is that immediately upon recognizing the presence of victims, the information should be transmitted over the radio so that responders can begin formulating rescue plans, making notifications, and creating RTFs in the staging area.

Another officer noted the shooter's position and used binoculars to confirm what he saw.¹⁶⁰ Recognizing that he had critical information, he broadcast the shooter's location over the radio. Broadcasting the shooter's location allows other law enforcement officers to respond to the correct place to engage. The shared action point is the transmission of critical information over the radio.

The first fire department units to arrive on the scene did not take action to assume command; however, they did upgrade the alarm level of the response.¹⁶¹ The upgrade brought several additional responding units into an incident where an ICS had not yet been established. The shared action point is that on recognizing a unit is the first to arrive on the scene, they should establish incident command per standard ICS doctrine.

A responding Las Vegas Metro Police Department captain assumed command of the incident and changed his radio ID to Incident Command.¹⁶² The assumption of command indicates to other responders that a chain of command is established and efforts are being coordinated through a central point. The shared action point is that upon recognizing the need for command and assuming it, change your radio ID to incident command. Once a command post was established, the location was announced over the radio.¹⁶³ Additional law enforcement personnel and other agencies responded to that location. Fire department staff arrived and formed unified command with law enforcement.¹⁶⁴ There are two shared action points here. First, upon assuming command,

¹⁶⁰ Lombardo, 41–42.

¹⁶¹ Federal Emergency Management Agency, *1 October After Action*, 16.

¹⁶² Lombardo, *1 October AAR*, 21.

¹⁶³ Lombardo, 35.

¹⁶⁴ Lombardo, 35.

announce the command post location, and second, form unified command with other agencies as soon as possible.

As officers noted wounded victims, they began medical treatment immediately. The same officers coordinated care with medical personnel.¹⁶⁵ These actions allowed wounded victims to receive medical care quickly. Additionally, officers set up CCPs to provide care and eventually transport victims.¹⁶⁶ The shared action points are that medical care should begin as soon as the need for it is recognized, it should be coordinated with medical personnel, and CCPs should be established quickly.

As law enforcement officers encountered wounded victims, they placed them in their squad cars and transported them to hospitals.¹⁶⁷ While this resulted in rapid transport and treatment of victims, there is no indication that it was coordinated with local EMS providers or hospitals. The treatment and transport of victims in a mass casualty incident need to be coordinated with hospitals so that no single hospital is overwhelmed, which may result in the victim not receiving treatment. The shared action point identified is that if law enforcement officers transport victims, they must coordinate with EMS. However, law enforcement did recognize the need to provide security for and coordinate information with the hospitals and LVMPD Captain's responded to hospitals to perform these functions.¹⁶⁸ The shared action point is to dispatch law enforcement personnel to hospitals in the event of an ASHE incident.

During this incident, the perpetrator committed suicide. Once law enforcement entered the shooter's room and recognized that he was deceased, officers announced over the radio that there was no longer a hot zone.¹⁶⁹ Fire rescue personnel will not operate in a hot zone. Declaring that no hot zone existed allowed fire rescue personnel to fully engage

¹⁶⁵ Lombardo, 43.

¹⁶⁶ Lombardo, 43.

¹⁶⁷ Federal Emergency Management Agency, *1 October After Action*, 18.

¹⁶⁸ Federal Emergency Management Agency, 26.

¹⁶⁹ Lombardo, *1 October AAR*, 20.

in the treatment of injured victims without risk of being injured or killed themselves.¹⁷⁰ The shared action point is to recognize and announce that the perpetrator has been neutralized so that rescue efforts can be fully engaged.

Before law enforcement learned that the shooter had committed suicide, they recognized that the shooting had stopped. Accordingly, they transitioned to a barricaded subject protocol.¹⁷¹ The change in incident status can significantly affect rescue efforts. The identified action point is to evaluate the status of the incident when recognizing that shooting, or any other form of attack, is no longer occurring.

Additional shared action points from this incident include locating and communicating the presence of a potential improvised explosive device, a camera system that was monitoring responders' actions, and a responder identifying that he was serving in a duplicate role.¹⁷² In each case, responders recognized the situation and took a corresponding action to mitigate it. In the case of the improvised explosive device, the action was to transmit that it was there, though it ultimately turned out to be part of the camera system. The following list summarizes the shared action points from this case:

1. On recognizing that responder has critical information, transmit critical information over the radio (shooter's location).
2. On recognizing an ASHE incident is occurring, do not attempt to change radio channel.
3. On recognizing an ASHE incident is occurring, assume command.
4. On recognizing that the perpetrator is neutralized, communicate it to incident commander and all personnel via radio.
5. On recognizing that the perpetrator is neutralized, declare no hot zone.
6. On assuming command, broadcast that over the radio.

¹⁷⁰ Lombardo, 27.

¹⁷¹ Lombardo, 44.

¹⁷² Lombardo, 45–46; Lombardo, 46; Federal Emergency Management Agency, *1 October After Action*, 20.

7. On assuming command, immediately announce command post location.
8. On learning their location, engage the perpetrator.
9. On recognizing an ASHE incident is occurring, begin forming strike teams.
10. On recognizing that responder has critical information, transmit critical information over the radio (recognizing there are casualties on scene).
11. On recognizing that responder has critical information, transmit critical information over the radio (determined what floor shooter was on).
12. On recognizing that an officer has been injured, treat and transport wounded officer out of hot zone.
13. On recognizing that people are wounded, start treatment and coordinate with medical personnel (wounded people fleeing scene).
14. On recognizing that people are wounded, establish CCPs.
15. On recognizing that shooting has stopped, evaluate status of the incident.
16. On recognizing a suspected improvised explosive device, transmit information via radio.
17. On recognizing that the perpetrator is using a camera to monitor law enforcement actions, disable the camera.
18. When arriving on scene of an ASHE incident, assume command.
19. When a law enforcement officer is transporting a patient, contact the transport officer or notify the hospital.
20. On recognizing the assigned role is already filled or a task has already been assigned, seek out a new role/task through the chain of command.
21. On recognizing an ASHE incident, dispatch law enforcement to hospitals as soon as possible.

22. On recognizing that a command role or function is not effective, call for additional resources.
23. On recognizing communications problems, take action to solve them (radio channel overloaded).
24. On recognizing communications problems, take action to solve them (poor radio signal).

C. CASE 3: PULSE NIGHTCLUB

The Pulse nightclub shooting in Orlando, Florida, is unique in that it lasted for many hours after transitioning from an active shooter incident to a barricaded subject. Analysis of this incident revealed the least amount of shared action points, with only three readily identifiable. This is likely due to the report being highly focused on the law enforcement functions of a single agency. Each shared action point resulted in a corresponding action, with the result of two actions being classified as positive and one being neutral.

The law enforcement response to the Pulse nightclub incident was immediate because an on-scene officer heard the initial shots and saw injured victims.¹⁷³ That same officer moved aggressively to engage the perpetrator while calling for assistance on the radio.¹⁷⁴ The first shared action point is to engage the shooter on recognizing that an ASHE incident is taking place. The second shared action point is recognizing the need for assistance and transmitting it over the radio.

After being engaged by law enforcement, the perpetrator barricaded himself in a restroom.¹⁷⁵ Law enforcement officers recognized that the shooter was partially neutralized and immediately began treating injuries.¹⁷⁶ The shared action point is to

¹⁷³ Straub et al., *Rescue, Response, and Resilience*, 48.

¹⁷⁴ Straub et al., 48.

¹⁷⁵ Straub et al., 49.

¹⁷⁶ Straub et al., 49.

recognize that the perpetrator is contained and immediately shrink the hot zone to begin triage and rescue victims.

As the Orlando Fire Department (OFD) was dispatched to the incident directly across the street from an OFD station, they could hear gunshots at the nightclub. The officer in charge of the station recognized the risk to personnel and locked down the fire station. The shared action point is recognizing a threat to unprotected personnel and taking action to protect them. While this action was necessary to protect responders, it also caused a delay in fire rescue response, which is why the result is classified as neutral. The following list summarizes the shared action points from this case:

1. On recognizing that responder has critical information, transmit critical information over the radio (shots fired and injuries exist).
2. On recognizing that the perpetrator is contained, immediately shrink hot zone and begin rescue and triage.
3. On recognizing shots fired in proximity to unprotected personnel, lock down and communicate need for protection to respond.

D. CASE 4: MARJORY STONEMAN DOUGLAS HIGH SCHOOL

The incident at Marjory Stoneman Douglas High School in Parkland, Florida, is unique in that it resulted in an officer being charged because he did not act.¹⁷⁷ Also, the perpetrator was not neutralized by law enforcement during the incident but was taken into custody later. The analysis yielded 16 actions and 11 corresponding actions. The results of those actions were classified as positive nine times, negative five times, and neutral two times.

The dispatch center in Coral Springs received a 911 call placed from the school to report the shooting.¹⁷⁸ The dispatcher transmitted the information to the appropriate fire

¹⁷⁷ Bojorquez, “Florida Deputy Charged after Staying Outside.”

¹⁷⁸ MSD Public Safety Commission, *MSD Public Safety Commission Initial Report* (Parkland, FL: Marjory Stoneman Douglas High School Public Safety Commission, 2019), 108, <http://www.fdle.state.fl.us/MSDHS/CommissionReport.pdf>.

and EMS agencies but not law enforcement because Coral Springs did not provide law enforcement services to Parkland. Instead, the dispatch center placed a phone call to Broward County's communication center to dispatch law enforcement resources.¹⁷⁹ This also resulted in the closest police agency other than Broward County Sheriff being delayed an additional four minutes.¹⁸⁰ The shared action point is that on recognizing an ASHE incident is occurring, dispatchers should notify all responders in the immediate area.

At the outset of the shooting incident, the school resource officer (SRO) could hear shots being fired, but he did not move to engage the shooter.¹⁸¹ Rather than take action to confront the shooter, the SRO took action to direct officers to stay away from the school.¹⁸² The corresponding action by the perpetrator was to continue moving through the school and shooting more victims. Multiple officers heard gunfire inside the school as the incident continued but they did not engage the shooter.¹⁸³ Failure to neutralize the shooter resulted in more victims being shot and aid not being rendered to the wounded. The identified shared action point is that responders engage the shooter on recognizing shots being fired.

An officer on the scene reported the shooter's last known location.¹⁸⁴ Several other officers noted this radio transmission as the only reason they knew where to go.¹⁸⁵ Another officer watched video surveillance of the incident and broadcast that the shooter was on the second floor.¹⁸⁶ Officers then began moving toward the last known location of the shooter. Both radio transmissions provide another example of recognizing that critical information must be transmitted over the radio to all other responders.

¹⁷⁹ MSD Public Safety Commission, 108.

¹⁸⁰ MSD Public Safety Commission, 108–9.

¹⁸¹ MSD Public Safety Commission, 90.

¹⁸² MSD Public Safety Commission, 92.

¹⁸³ MSD Public Safety Commission, 33.

¹⁸⁴ MSD Public Safety Commission, 34.

¹⁸⁵ MSD Public Safety Commission, 124.

¹⁸⁶ MSD Public Safety Commission, 35.

As the response continued, the officer watching the video surveillance was notified that the video feed was not live.¹⁸⁷ The officer did not immediately transmit that information to all other officers. As a result, officers continued to function as if the shooter was still on site. Several minutes later, the officer broadcast that the video feed was delayed and that the shooter had left the incident scene approximately 20 minutes prior.¹⁸⁸ Having this information would allow responders on the scene to shift from “hot zone” to “cold zone” operations and focus on victim rescue. One shared action point identified is that on recognizing that intelligence is old or wrong, transmit that information over the radio so that adjustments can be made. A second shared action point is recognizing that the perpetrator is neutralized, based on having left the scene, and transitioning fully to rescue mode.

On campus for a different reason, an off-duty officer encountered a wounded student and immediately began to provide aid.¹⁸⁹ Another responding officer discovered the pair and transmitted their location over the radio.¹⁹⁰ The rapid assistance resulted, at least in part, in the student surviving the ordeal. Similarly, a Coral Springs dispatcher transmitted that there were three victims in room 1216.¹⁹¹ Unfortunately, the Broward sheriff’s personnel did not hear that message on their channel.¹⁹² One shared action point is that responders should render aid immediately upon recognizing a wounded person. A second shared action point is to communicate the known location of victims to all agencies so that fire rescue personnel can rapidly access them.

At one point during the incident, law enforcement encountered a room full of students hiding from the perpetrator. Officers asked if anyone in the room was injured, and the students replied, “yes.”¹⁹³ The officers then asked if the injured people could walk

¹⁸⁷ MSD Public Safety Commission, 35.

¹⁸⁸ MSD Public Safety Commission, 36.

¹⁸⁹ MSD Public Safety Commission, 111.

¹⁹⁰ MSD Public Safety Commission, 122.

¹⁹¹ MSD Public Safety Commission, 125.

¹⁹² MSD Public Safety Commission, 125.

¹⁹³ MSD Public Safety Commission, 141.

to be evacuated from the room quickly.¹⁹⁴ In another instance, law enforcement officers recognized a severe injury to a victim's leg and placed a tourniquet.¹⁹⁵ As a result, the victim survived her injury. Two shared action points are derived from these interactions between law enforcement and victims. The first is to quickly determine if injuries exist when encountering a group of people, and the second is to recognize severe injuries and treat them aggressively.

Officers on the third floor found the perpetrator's weapon and other materials he had discarded.¹⁹⁶ There was no indication that the officers immediately communicated their findings to other responders. Another officer learned the suspect's name and transmitted it to all law enforcement agencies over the radio.¹⁹⁷ In one of these cases, officers may not have shared information they learned, and in the other, they did. The shared action point demonstrated here is recognizing and communicating critical information to all responders. The following list summarizes the shared action points from this case:

1. On recognizing gunfire, engage the shooter and radio for assistance (SRO hears gunfire).
2. On recognizing gunfire, move toward it (multiple deputies hear gunfire).
3. On recognizing that an ASHE incident is occurring, direct incoming officers to where they might engage the shooter.
4. On recognizing that responder has critical information, transmit critical information over the radio (perpetrators last location is known).
5. On recognizing that responder has critical information, transmit critical information over the radio (perpetrators last location is known; different officer).

¹⁹⁴ MSD Public Safety Commission, 141.

¹⁹⁵ MSD Public Safety Commission, 143.

¹⁹⁶ MSD Public Safety Commission, 157.

¹⁹⁷ MSD Public Safety Commission, 164.

6. On recognizing that responder has critical information, transmit critical information over the radio (intel is old or wrong).
7. On recognizing that perpetrator is neutralized, captured, or has left, transmit critical information over the radio (perpetrator left the scene).
8. On recognizing that an ASHE is taking place, notify all responders in the immediate area.
9. On recognizing that victims are present, call for EMS assistance (victim in warm zone).
10. On recognizing victims are present, transmit the location of the victim.
11. On recognizing that dispatchers know information on victim locations, transmit to all agencies on scene.
12. On recognizing that the location of the perpetrator has changed, communicate it to law enforcement.
13. On recognizing a room of people hiding from the perpetrator, immediately ask if anyone is injured.
14. On recognizing a severe injury to an extremity, place tourniquet on the victim.
15. On recognizing that the perpetrator has abandoned a weapon, transmit critical information over the radio.
16. On recognizing that the perpetrator is known to law enforcement, broadcast critical information over the radio.

E. CASE INTERACTION ANALYSIS

I analyzed cases to determine what interactions occur during an ASHE. These interactions were between the responding agencies, the victims subjected to the incident, and the incident perpetrator. Some of the interactions involved multiple participants at the same time. Some interactions were direct face-to-face communication or physical interaction. Additionally, radio communication between two responders was direct

interaction even though it did not occur face to face. Other interactions were indirect, meaning that they occurred through a third party or were a delayed response to an action taken previously. For example, an law enforcement officer receiving information from a person and relaying it to a different agency, which then acts on it, is an example of a third-party interaction. Understanding where interactions occur will allow for increased understanding of whether actions by one agency or actor drive or influence actions by other agencies or actors.

Figures 5 and 6 show the interactions during an ASHE based on after-action analysis. In Figure 6, more prominent lines indicate more interaction, and lines pointing back at the same entity indicate interaction within that same entity or agency of the same discipline. The policy analysis shows that interactions on incident scenes would be spread out somewhat evenly between all actors at the scene, with law enforcement interacting with all agencies and actors more than any other. However, findings from the AAR indicate that law enforcement primarily interacts with law enforcement by a two-to-one margin over the next highest level of interaction. An unexpected result of the AAR analysis is that there is no discernable mention of interaction between fire and EMS agencies. While unexpected, it is not entirely surprising given that the AARs are heavily focused on law enforcement actions and interactions to neutralize the perpetrator. Additionally, in many cases fire and EMS agencies are one and the same.

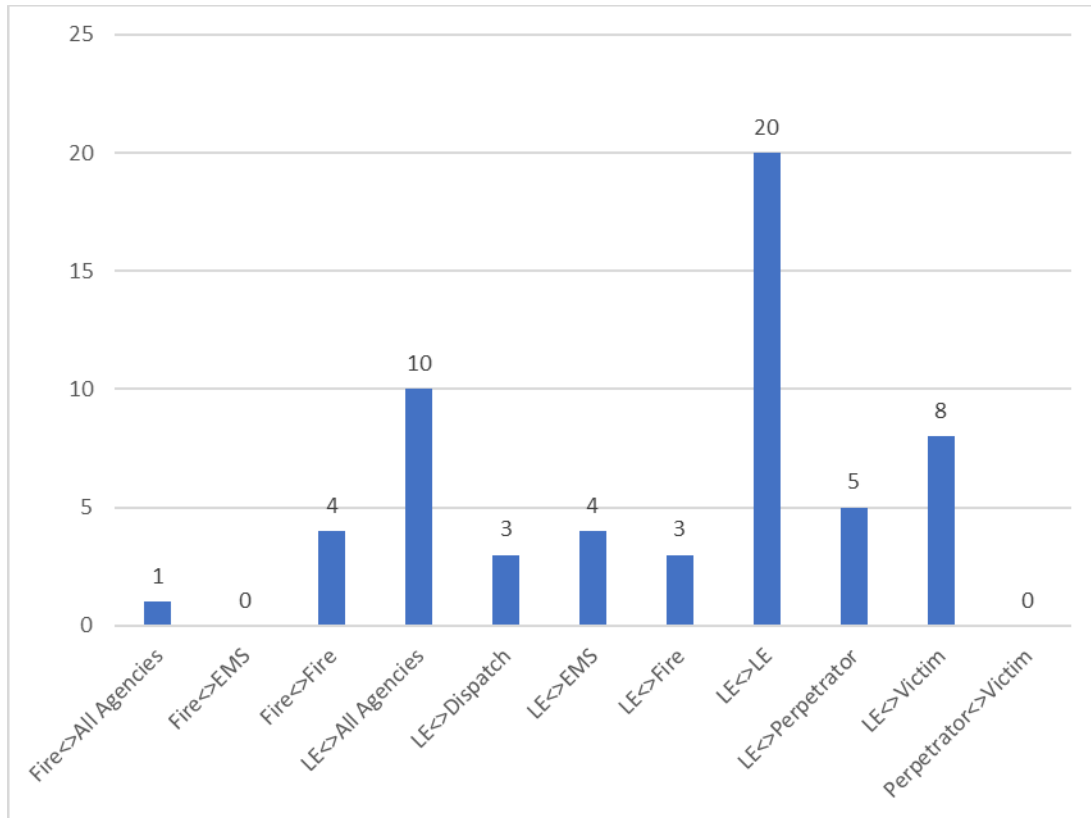


Figure 5. Agency Interactions during ASHE, Graph

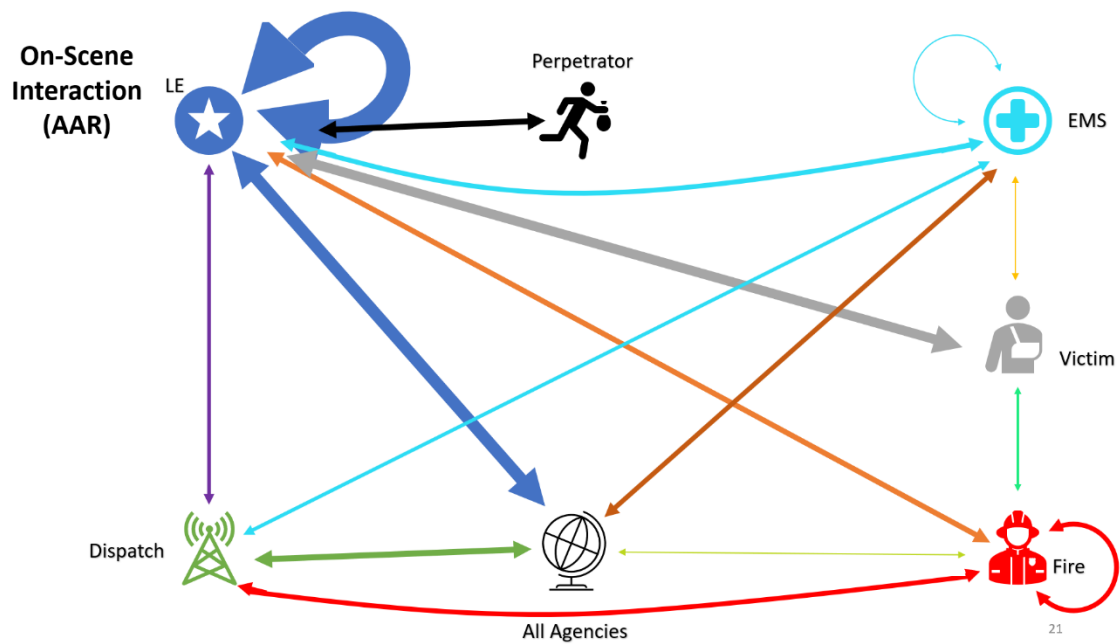


Figure 6. Agency Interactions during ASHE, Image

While analyzing interactions at an ASHE, I also noted who initiated the action. In each case, the person initiating the action was documented whenever possible. Furthermore, whether the initial action resulted in a corresponding action is also important. If an action results in a corresponding action that continues to move the incident toward mitigation, the action is considered positive. Moreover, suppose an action results in additional positive actions. In that case, it demonstrates the importance of recognizing the opportunity to seize on one agency or actor's actions with another action to continue driving the incident toward mitigation. The reason for analyzing who initiated an action is to evaluate the outcome of the action based on who started it. Actions and interactions that generate positive results should be the focus of training and response efforts. Table 13 demonstrates that out of 58 noted actions, 43 generated a corresponding action. Table 14 reflects the frequency with which actions resulted in corresponding actions by the specific agency or actor who took the initial action.

Table 13. Did Action Result in a Corresponding Action?

	Yes	No	Unknown	
Pulse	3	0	0	
Marjory Stoneman Douglas	11	2	3	
Inland Regional Center	10	0	4	
Harvest Music Festival	19	2	4	
Total	43	4	11	58

Table 14. Frequency of Action Resulting in Corresponding Action by Agency/Actor Taking Initial Action

Law Enforcement	68%
Fire/EMS	100%
Dispatch	67%
Perpetrator	100%

The case analysis showed that interactions on the scene of an ASHE predominantly occur in the tactical and task response components. In contrast, the

strategic component experienced less than a quarter of the interactions. Different components of the response may yield more positive outcomes than others because of the interactions found in each component. For example, interactions occurring in the strategic component of the incident will likely be between public safety agencies and not directly with the victims. While there may be positive strategic outcomes, they may be less directly responsible for the survival of victims than task-generated positive outcomes, such as applying a tourniquet. Focusing on rapid, effective decision-making by agencies whose personnel work in the most directly impactful response component should improve overall response outcomes. Table 15 shows the breakdown of interactions by response component.

Table 15. Interactions by Response Component

Strategic	24%
Tactical	47%
Task	29%

To further understand the importance of outcomes, I analyzed which agencies most frequently initiate actions resulting in positive outcomes. The outcome of a particular action or interaction depended on what the action was and who the interaction involved. If the interaction of two certain agencies was found to generate positive outcomes frequently, the interactions of those agencies should be a priority when training and planning for an ASHE. Figure 7 shows the frequency of each outcome, positive, negative, or neutral, based on who initiated the action. It should be noted that when the outcome of a perpetrator-initiated action is recorded as “positive,” it means that the action led to the perpetrator being neutralized, either by their own action (i.e., fleeing the scene, barricading self, or suicide) or a corresponding action by law enforcement.

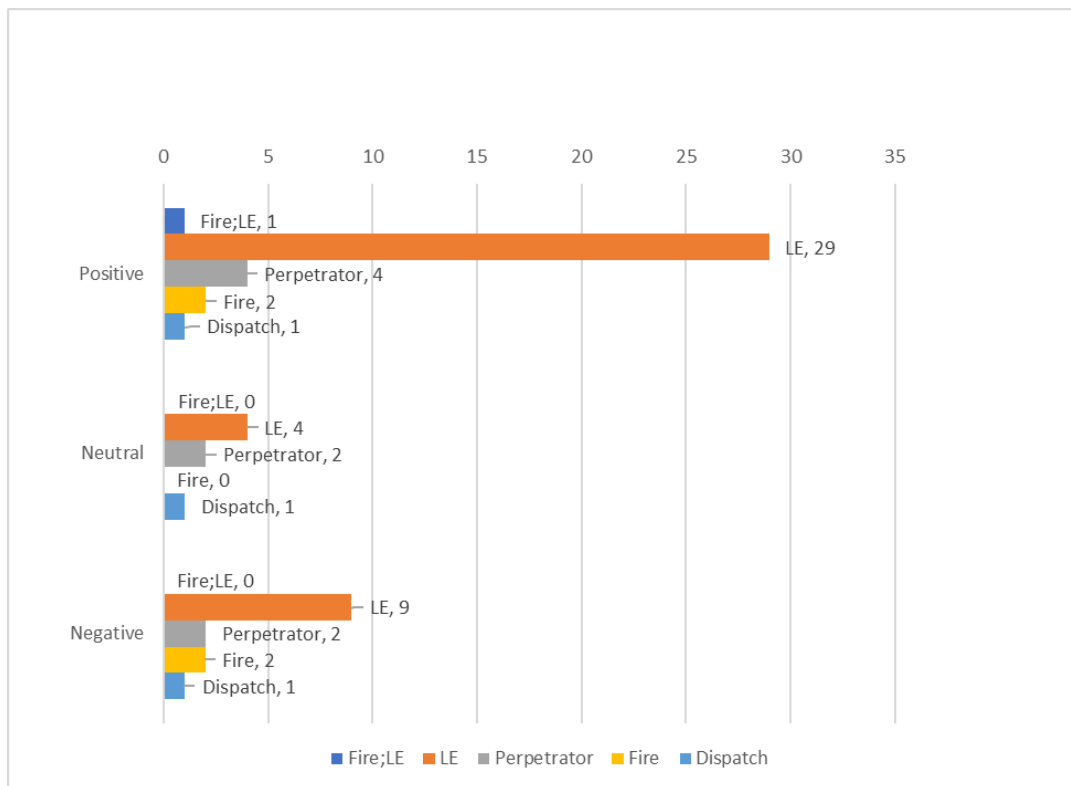


Figure 7. Outcome of Actions by Initiating Entity

As noted in Figure 8, whenever law enforcement initiates an action, a positive outcome is likely. Additionally, Figure 9 shows that when a perpetrator initiates an action, the result is positive half the time and neutral a quarter of the time. I considered these two findings within the context of an action resulting in a corresponding action. I found that if a perpetrator takes an action that an officer recognizes as a driving force and responds appropriately with a corresponding action, the outcome is likely to be positive.

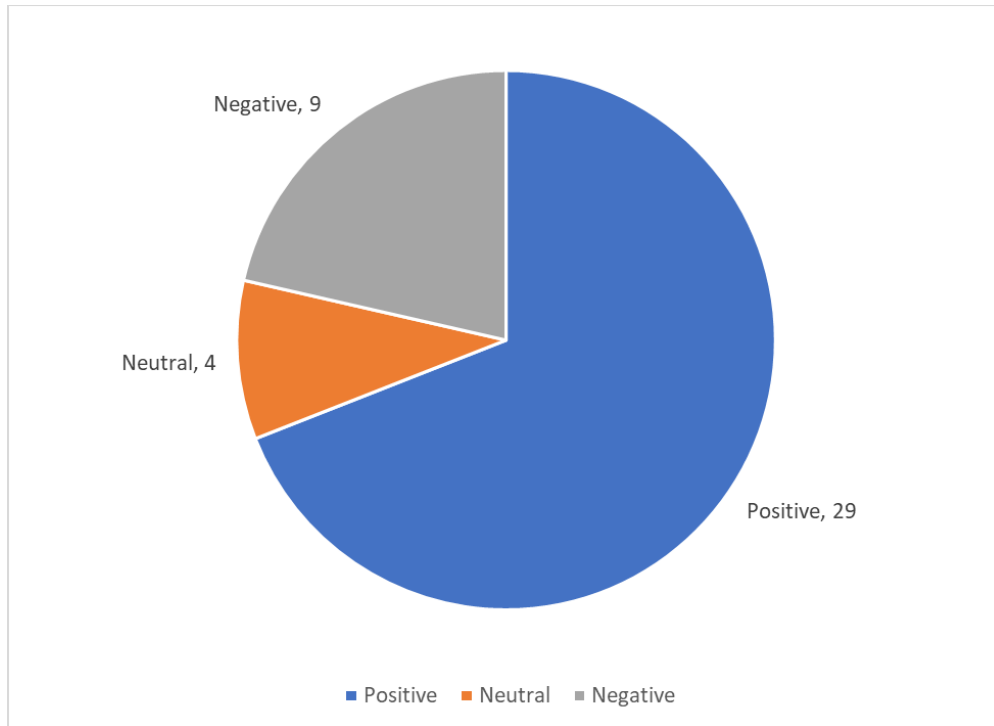


Figure 8. Outcome of Law Enforcement Initiated Actions (AAR)

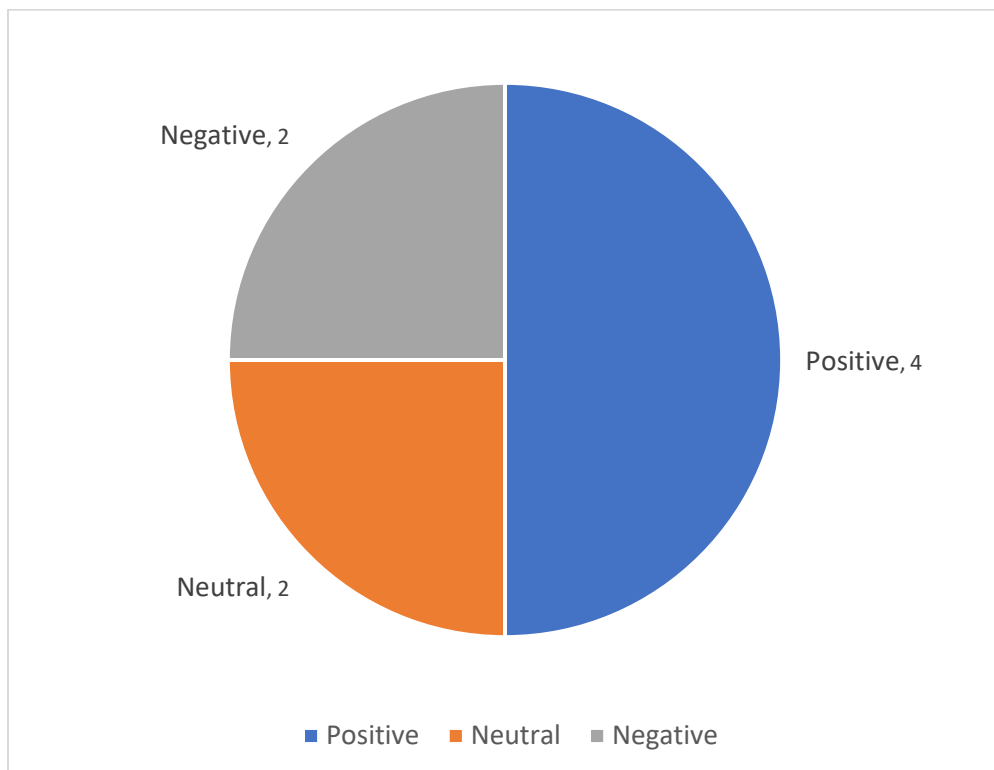


Figure 9. Outcome of Perpetrator Initiated Actions (AAR)

Table 16 shows the outcome of actions by case. Of the 58 total classified actions, 64% resulted in positive outcomes; 24% were negative, and 12% were neutral. However, there are significant differences in each incident that make it difficult to draw conclusions from this data. For example, the size and scope of the Harvest Music Festival shooting make it significantly different from the other incidents. However, it is notable that every incident has more positive outcomes identified than negative or neutral combined.

Table 16. Outcome of Actions by Case

	Positive	Neutral	Negative	
Pulse	2	1	0	
Marjory Stoneman Douglas	9	2	5	
Inland Regional Center	9	0	5	
Harvest Music Festival	17	4	4	
Total	37	7	14	58

The case analysis findings reveal that the policy-directed actions and expected reactions to specific driving forces do occur at ASHE incident scenes, such as the examples shown in Table 17. However, it is difficult to determine if policy expected or directed interactions reflect on-scene interactions the way policymakers intended. This is due in part to data from AARs focused on task level functions more than strategy and tactics. In contrast, policy directives focused more on strategic and tactical actions and interactions.

Table 17. Expected Response to Driving Force: Policy vs. Actual

Driving Force	Policy Expected Response	Actual Response	Action Type
First to arrive at ASHE	Give a size up report ¹⁹⁸	Noted and reported the shooter's location ¹⁹⁹	Communications with other agency
LE supervisor arrives at ASHE	Assume unified command ²⁰⁰	Assumed command and announced the location ²⁰¹	Communications with other agency
Perpetrator engaged in harming victims	Engage perpetrator ²⁰²	Engaged perpetrator ²⁰³	Direct action
Perpetrator barricades or otherwise neutralized	Begin treating patients, evacuating persons ²⁰⁴	Began caring for victims ²⁰⁵	Direct action

Furthermore, regardless of who initiates an action, that action is likely to lead to further actions by other actors, the same actor, or other agencies. This reveals an “action chain” of sorts, wherein one action causes another, and another, and another until the incident is mitigated or the chain breaks. Each of the links in the action chain demonstrates a shared action point that all agencies should be aware of, recognize when it occurs, and decide to react to it.

F. SUMMARY OF CASE ANALYSIS FINDINGS

The case analysis found that shared action points similar to those expected in policy do occur during an ASHE. I also found that if responders recognize shared action

¹⁹⁸ Brown County Sheriff's Office, *Integrated Threat SOG*, sec. D3.

¹⁹⁹ Lombardo, *1 October AAR*, 19; Lombardo, 24.

²⁰⁰ Brown County Sheriff's Office, *Integrated Threat SOG*, sec. D9.

²⁰¹ Lombardo, *1 October AAR*, 20.

²⁰² Green Bay Police Department, *Rapid Response and Deployment*, sec. 414.3.

²⁰³ Straub et al., *Rescue, Response, and Resilience*, 48.

²⁰⁴ Green Bay Police Department, *Rapid Response and Deployment*, sec. 414.3.

²⁰⁵ Straub et al., *Rescue, Response, and Resilience*, 49.

points as they occur, they can take further action to build on the previous action. The case analysis also revealed that actions taken by one agency or person often result in a corresponding action by someone else. Understanding the interaction between individual responders or agencies allows for more understanding of whether the actions of one agency or actor influence others as they build on one another's actions. Furthermore, I found that actions initiated by law enforcement during an ASHE are likely to have a positive outcome. Finally, I found that an action chain consisting of shared action points exists, which may be helpful to ASHE responders.

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VI. FOCUS GROUP ANALYSIS AND FINDINGS

A. INTRODUCTION

I conducted two focus group meetings to discuss the findings of the case and policy analysis with local SMEs from the agencies that developed the policies. The overarching objective for both focus group discussions was to validate my previous observations at a training exercise, validate my research findings, and gather research contributions from SMEs. The focus group discussions also considered how future agency training might use the concept of shared action points to increase agency coordination during ASHE incidents. The findings of the SMEs in the focus group were used to create learning objectives for future training evolutions. A captain and a lieutenant from the Brown County Sheriff's Department participated in the discussions. Additionally, a lieutenant and an officer from the Green Bay Police Department and a battalion chief and assistant chief from the Green Bay Metro Fire Department also served as SMEs.

B. FOCUS GROUP DISCUSSIONS

1. Validating Stalls

The discussions began with an explanation of the goals and objectives for the focus group. I explained that I observed a "stall" in the process of deciding on an action and then taking it. These observations were made at a training event involving all focus group participants. I further explained that I observed responders from multiple agencies and disciplines take longer than expected to make a decision to act based on a stimulus that had occurred. I questioned whether the focus group participants had observed similar stalls in decision-making and acting. All responded in the affirmative. As part of the discussion, I asked participants if a stall was ever reasonable or acceptable in an actual ASHE incident.

Participants related that some stalls may be acceptable. If they are markedly brief, the responder is emotionally in control and designed to better comprehend the situation to make better decisions. One participant framed an acceptable stall as "purpose-driven" and suggested that a purpose-driven stall is not actually a stall but rather a "purpose-driven pause." However, SMEs agreed that if the stall was due to the responder simply not

knowing what to do because of information or sensory overload or being out of control emotionally, it was not acceptable.

SMEs related two examples of stalls they personally witnessed: one was not purpose driven and one was. The first example occurred during a training session and involved an RTF who had been deployed in the building. As the RTF entered the building, they saw a victim holding a simulated infant who was covered in simulated blood. One firefighter in the RTF stated that they should stop and render aid and the leader of the RTF disagreed, saying that they needed to complete their assignment and go to the CCP. The SME relating the situation explained that there was a notable stall in taking either action while information was being processed. Additionally, when the decision was made to continue to the CCP, the RTF did not transmit over the radio that they had encountered the victim so that another RTF could be assigned to assist them. In this situation, the stall was based on having a set assignment and then receiving new information and experiencing a new situation. This likely required more thought processing time as the responders had no analogue to recall. Additionally, more information in the form of a discussion about the two options added additional processing time. However, that situation likely created an analogue for the responders who experienced it, which they may recall in a similar situation in the future.

The second example occurred during an actual response to an ASHE. One of the SMEs related that he purposefully paused because he realized that the amount of information he was receiving was overwhelming. He further related that he knew he had to do something about the overload before critical information was missed. He briefly paused to consider a course of action and quickly found an analogue situation. He related that he recalled previously running mental simulations of himself using a tactical worksheet designed specifically for ASHE incidents.²⁰⁶ He immediately began mentally using the worksheet to capture the incoming information. This is not only an example of

²⁰⁶ A “tactical worksheet” is a document used by responders, usually by personnel working in the command structure, to help them manage an incident. The worksheet often includes a basic incident structure that can be used and a series of possible actions to take or initial objectives to meet. The worksheets are typically designed for specific types of incidents such as structure fires, mass-casualty incidents, ASHE incidents, etc.

the purpose driven pause that SMEs discussed but also an example of the RPDM process at work.

2. Driving Force as It Relates to RPDM

Focus group SMEs discussed the driving force concept described by ALERRT as it relates to RPDM.²⁰⁷ A driving force is a piece of information, a stimulus, received by the responder that may cause them to act. It may be hearing gunfire, seeing a victim, seeing or smelling smoke, or experiencing many other stimuli.²⁰⁸ Participants discussed the value of training on the driving force concept because of its ability to engage the RPDM process. Ultimately, the SMEs concluded that ALERRT's driving forces are tightly linked to Klein's RPDM theory.²⁰⁹ Based on the focus group's discussion on driving force and its relationship to RPDM, SMEs posited that when a specific driving force is encountered, it engages the decision-making process by either causing a mental simulation or the recall of an analogue, as Klein discusses in RPDM theory.²¹⁰ Figure 10 shows the relationship of a driving force with RPDM. Once the analogue is recalled or the mental simulation yields an acceptable outcome, the responder acts on it. If the responder has not experienced that driving force, the response to it creates a new analogue that the responder may recall in a future situation. SMEs theorized that scenario-based training would improve mental simulation time or provide more analogs for the responder to choose from. In either case, the responder should be able to make decisions more quickly.

²⁰⁷ Advanced Law Enforcement Rapid Response Training and Federal Bureau of Investigation, *ALERRT Train-the Trainer*, INST 4-3.

²⁰⁸ Advanced Law Enforcement Rapid Response Training and Federal Bureau of Investigation, INST 4-3.

²⁰⁹ At the beginning of the research, any action that a person may react to at an incident was referred to as "stimulus." As the research progressed, the concept of "driving forces" replaced stimulus. Each individual driving force is a stimulus that another person may decide to react to. Since driving force is familiar to responders, I use it to refer a stimulus that a person may decide to act on.

²¹⁰ Klein and Crandall, *Recognition-Primed Decision Strategies*, 3.

Driving Forces

Any kind of "actionable intelligence" provided by the environment or an actor in the environment.

Driving Force

Processing

Processing of an analogue situation or mental simulation of the potential action

Processing

Action

Action

Taking an action based on accepting the analogue or because the simulation yielded an acceptable result

Figure 10. Driving Force and Its Relationship to RPDM

3. Deciding To Act

SMEs agreed that the actions of one responder or agency affect other responders or agencies at ASHE incidents. As the responder processes incoming driving forces using the RPDM process, they reach a decision to take an action. Each decision to act leads to an outcome. In some cases, that outcome becomes the next driving force, thereby causing a chain reaction that moves the incident toward mitigation. I refer to this as the mitigation action chain. Figure 11 shows that each action and outcome forms a new link in the development of the mitigation action chain.

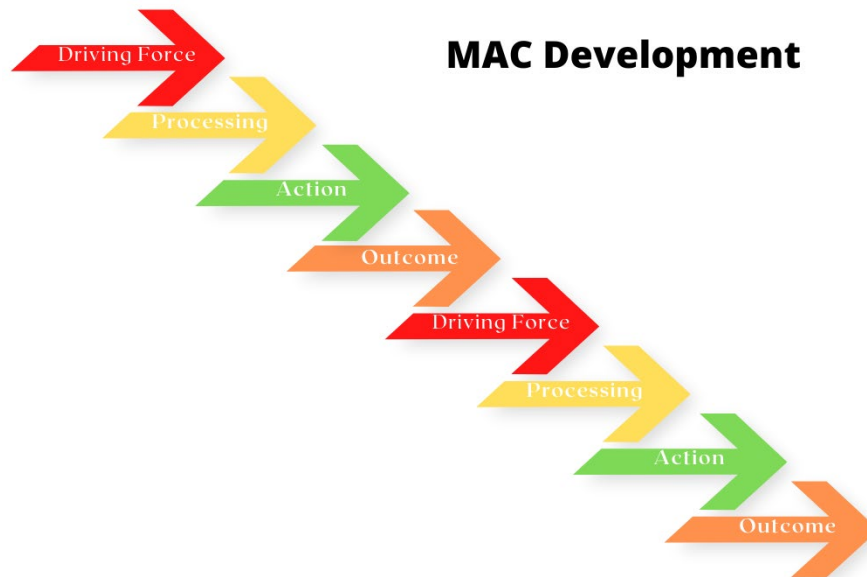


Figure 11. Mitigation Action Chain (MAC) Development

Each link is a shared action point that responders need to be able to recognize and build on as they occur. The agency responsible for initiating an action must recognize that each action affects other parts of the incident and keeps the mitigation action chain intact, particularly in interactions with other agencies or actors. Focus group members evaluated policy direction concerning which agency was most frequently assigned responsibility for a given task or action. Table 18 shows which agency was most frequently assigned responsibility in policy for initiating certain types of action. It should be noted that the results shown from the policy analysis only show the agency *most frequently* assigned responsibility. However, this does not imply that the agency is solely responsible for that type of action.

Table 18. Policy Assigned Responsibility by Action Types

Action Type	Responsible
Initiating direction of personnel	EMS
Initiating medical care for victim	EMS
Initiating communications with other agency	Dispatch/fire & EMS
Initiating resource coordination	Fire/EMS
Initiating communication with victims	LE
Initiating direct action	Fire
Initiating communication with hospitals	Fire/EMS

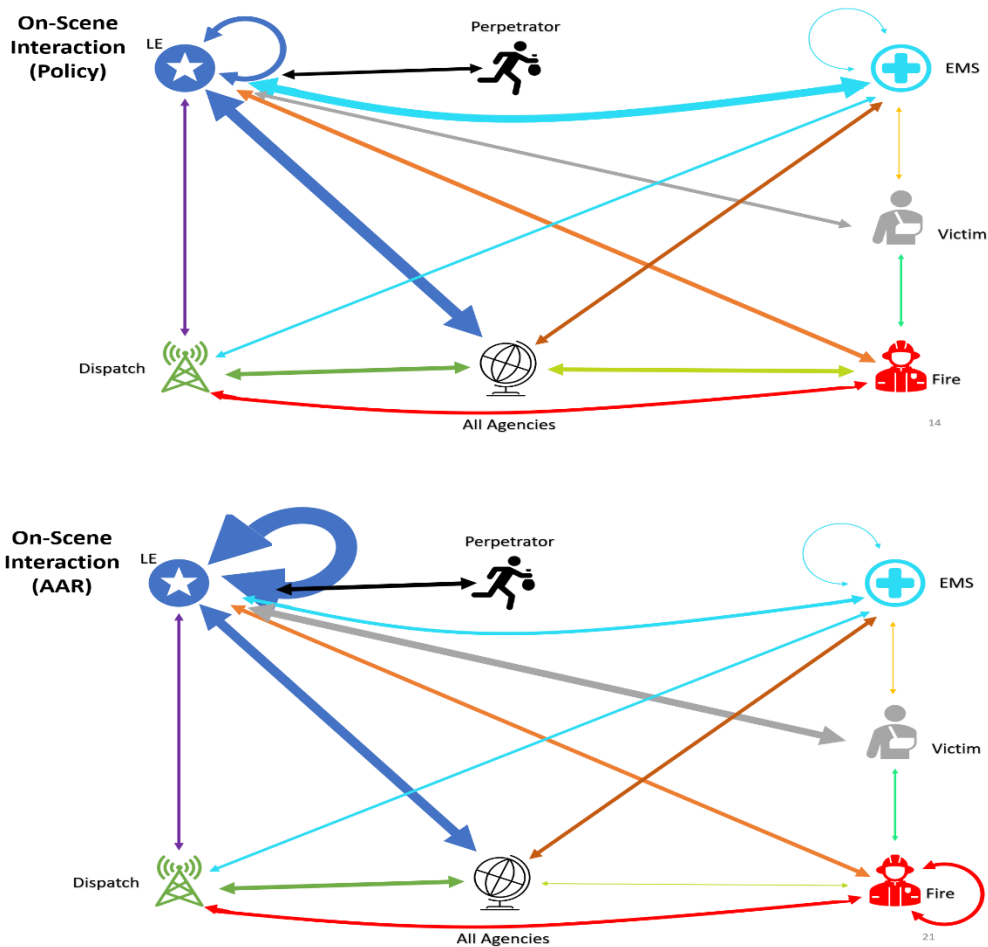
4. Policy Analysis Discussion

Policy discussions first considered how policy direction related to response components and how that correlated with actual ASHE responses. SMEs felt that the policies were appropriately allocated when considering the distribution of policy-directed actions throughout the three response components of strategy, tactics, and tasks. Specifically, one SME suggested that it was logical to see a heavy focus on tactical actions because ASHE responses are a tactical environment. While SMEs noted that actions categorized in the task response component rose from 10% in the policy analysis to 29% in the case analysis, they also indicated that policy should not be overly task oriented. In general, the focus group concluded that the distribution of expected actions found in agency policy did not necessitate further consideration.

SMEs participating in the focus group suggested that agency policy may not accurately reflect who is responsible for initiating certain types of action. For example, one SME related that while communication is primarily assigned to dispatch, the communication is often initiated by law enforcement and carried out by the dispatch center. Another SME noted that medical care for victims is typically initiated by law enforcement since they are the first to encounter the victims. However, law enforcement policies do not address medical care for victims as thoroughly as fire rescue policies do. Finally, the group agreed that fire rescue policies are written with the assumption of having some known conditions on arrival. In contrast, law enforcement policies are more

overarching and broader because law enforcement arrives first at a largely unknown situation. The situation becomes clearer when law enforcement begins communicating with other agencies.

As agencies decide to take action on an ASHE, each action is likely to create an interaction between other agencies or actors on the scene. Focus group participants considered who interacts with each other based on policy direction compared to actual on-scene interactions. While many interactions were discussed, the group focused on the issue of communication between agencies. On-scene communications are critical if the various agencies and actors are expected to build on the actions of each other. SMEs theorized that the main problem with policy-directed interactions is each agency, by default, operates on separate communications channels from the outset. The group discussed that the communication problem is even more evident in on-scene data. The on-scene data from AARs show significantly more law enforcement to law enforcement interaction than policy does. One SME noted that that is critically important because of the multitude of agencies responding to a scene. Coordination of actions and interactions across so many agencies is often incredibly challenging. When the focus group compared the on-scene interaction analysis to the policy interaction analysis, they found that law enforcement was significantly more responsible for many of the actions and interactions than the policy analysis indicated. Figure 12 compares the difference between interactions in policy and on scene.



Note that in policy, LE interactions are more evenly distributed to several agencies as indicated by similarly sized pathways between LE and other agencies. However, in on-scene interactions, the pathways are less evenly distributed and focused largely on LE to LE interactions.

Figure 12. Difference Between Interactions in Policy and On Scene

5. Case Analysis Discussion

The SME's concerns over communications issues are validated by a textual analysis of excerpts captured from the AARs used in the case analysis. An excerpt was captured only if it contained information used as a data point during the case analysis. Excerpts were entered into a word cloud generator that removed standard "non-content" words. The results demonstrated that law enforcement and communications were the dominant themes in the excerpts. The word cloud can be seen in Figure 13.



Figure 13. Word Cloud

The results of the textual analysis matched my observations during a previous training exercise with the agencies involved in the focus group. On visualizing the results of the textual analysis, I concluded that the need for law enforcement officers to communicate critical information over the radio was vital to keeping the mitigation action chain intact. When the focus group SMEs were shown the word cloud, they independently confirmed the conclusion.²¹¹ One SME commented that communications from law enforcement are vital to ensuring that victims receive treatment, including from fire rescue. Providing treatment hinges on communication from law enforcement to fire rescue/EMS that they can enter a warm zone and provide aid. Another SME related that the results demonstrated the importance of law enforcement's ability to communicate with all responding agencies. The significance of this finding associated with RPDm is that responders must recognize when they possess critical information and ensure that information is transmitted to everyone who needs it.

The interaction between agencies and actors is a critical part of keeping the mitigation action chain intact. SMEs reviewed the data related to an action by one agency or actor generating another action. Of the 58 actions noted in the case analysis, 43 (74%) generated a corresponding action. While it is not known if 11 of the actions generated another action, only 4 (7%) failed to cause another action. When asked to comment on these findings, focus group members expressed that every individual action was

²¹¹ It should be noted that SMEs were first shown the word cloud without any words circled and asked to provide their interpretation. After they responded, they were shown the word cloud as shown in Figure 13.

significant because actions were building on other actions. They also suggested that the inverse is likely valid. If one action is not taken, many others will also not happen. These findings demonstrate the importance of recognizing the driving force, considering and validating a possible action, and taking action to keep the mitigation action chain intact.

The term “right of bang,” wherein “bang” is the start of an incident, refers to a theoretical timeline that starts before the incident begins, progresses through the incident, and terminates sometime after the incident has been mitigated.²¹² Anything “right of bang” on this timeline occurs after the incident has started and preventative measures are no longer an option. Anything “left of bang” happens before the incident starts and may involve prevention efforts, planning, and training. RPDM concepts and theory will not prevent an ASHE from occurring. Still, they would be incorporated “left of bang” during training evolutions to help responders better recognize when specific actions are important and decide to take those actions more quickly. The focus group findings demonstrate that each action will likely lead to another action and add more links to the mitigation action chain until the incident is fully mitigated.

6. Training and Experience

SMEs discussed policy and case analysis findings in comparison to agency training and actual experience with an ASHE. SMEs found that our initial ASHE training exercises demonstrated issues parallel to some of the problem areas found in the AARs used in the case analysis. One SME stated that as we have continued to train, personnel are provided with a “mental blueprint” that aids them during the RPDM process. Another SME related that the areas we have focused our training on resulted in better decision-making at an actual ASHE in our county, but the areas we have not focused on revealed room for improvement. Another SME agreed, stating that there were noticeable areas during the ASHE response where training provided recognition of what steps should be taken. However, there were other areas where recognition of needs was less evident

²¹² Patrick Van Horne, “Getting Left of Bang: The Next Level of Tactical Awareness,” Police1, November 13, 2015, para. 3, <https://www.police1.com/officer-safety/articles/getting-left-of-bang-the-next-level-of-tactical-awareness-weFrGYNy50cZwdPd/>.

because there had not been a focus on those areas. When specifically asked if there was evidence that RPDM was present in our incident and training sessions, SMEs agreed that it was. As evidence, SMEs cited that the tactical elements of our ASHE response, which we train on regularly, went well. The strategic elements, which had received less attention during training, showed room for improvement.

7. Focus Group Exercises

Throughout the focus group discussions, a series of group exercises gathered additional information as part of the research and for potential use in training exercises. The focus group SMEs participated in an exercise to compile a list of driving forces they believe should provoke a decision to act. Next, each driving force was ranked collectively by the SMEs to determine which required an immediate response versus those less critical. Only the highest-priority (Tier 1) driving forces were used for the second exercise. During the second focus group discussion, SMEs participated in a similar exercise to generate expected responses to the driving forces they compiled in the first exercise. Again, SMEs ranked the responses to determine which response was most preferred, effective, and likely to have a positive outcome. Blue sticky notes were posted by law enforcement personnel, while yellow notes were posted by fire/EMS. A graphical representation of the second exercise's results is shown in Figures 14 and 15.

Should Cause a Reaction										
Tier 1: an action/reaction is critical and must happen										
Stack 1	Stack 2	Stack 3	Stack 4	Stack 5	Stack 6	Stack 7	Stack 8	Single	Single	Single
Gunfire or Actionable Intelligence	Victim-Civilian	Threat is stopped	Arriving on Scene LCAN	Reports of multiple victims	Actionable Intel about shooter	No stimulus at all	Encounter subject, no gunfire	Direct Intel from fleeing people	Explosion	Smoke or Flames
First Arriving Unit on scene	Victim-Officer	Visual of Victims	LCAN	Victims on ground	Dispatch notification of active shooter	Officer seeing other officers inside at ASHE	Encounter subject, gunfire			
Report of gunfire	Victim-Another officer	Report of Victims	No Driving Force			Other officers arriving near your location	Shooter down, not cuffed			
gunfire or no gunfire	Visuals of victims	Seeing injured patients					Shooter displaying imminent threat			
Shots fired	Yelling-Screaming	Mix of injured and uninjured in a room								
Gunshots	Injured victims									

LCAN = Location, Conditions, Actions, Needs

Figure 14. Driving Forces That Should Cause a Reaction

Driving Force						
Hear Gunfire on Arrival		Dispatched to ASHE Incident	Learns shooter is down/contained	See victims	No driving force	See Smoke & Flames on Arrival
Tier 1: Most effective; likely positive outcome; most preferred						
Expected Actions	Go towards sound of gunfire	Call TAC Alert	Transition to slow & deliberate	Report to dispatch and tactical	LCAN	Request additional alarm
	LCAN*	If responsible for it, call TAC Alert	Treat victims if no gunfire	report number of patients	Hold and wait for more resources	First in report
	Communicate what you hear; LCAN	Request proper radio channels (BInOp/Staging)	Shift priority to Tactical Emergency Casualty Care (TECC)	Request a life safety card (upgrade incident level)	Communicate with supervisor	LCAN
	Respond to gunfire to stop shooter	Stay off radio; listen	Coordinate with RTF's	Treat if no other driving force	Slow & deliberate	Communicate observations
	Move to sound of gunfire	Change frequency if necessary	Assemble RTF's	Move to next objective (perimeter, CCP)	Communicate LCAN	Evacuate area if possible & advise fire
	Communicate information	Move to correct radio channel	Become tactical or ensure someone is	Treat if no gunfire	If solo, wait for another officer & start to clear/evaluate	Communicate information
	Move to the gunfire		Communicate to Rescue Group Supervisor if at Tactical Group Supervisor	Coordinate & Communicate the treatment of victims		
				Update LCAN Treat victim unless stop killing exists		

* = LCAN: Location, Conditions, Actions, Needs

Figure 15. Expected Responses to Driving Forces

The first exercise resulted in common driving forces for which each would provoke a responder to react. SMEs expected these driving forces to be recognized by responders and generate a high-priority reaction at an actual ASHE incident. These high priority driving forces and reactions would be categorized as either tactical or task functions. In the second exercise, the SMEs provided the acceptable actions that responders may take for each specific driving force. These driving forces can be simulated in large-scale, multi-agency training evolutions to expose responders to them and increase the likelihood that a specific driving force would be recognized and generate another action in the mitigation action chain. As each agency learns to recognize driving forces and outcomes that serve as driving forces, they will begin to build on actions taken by others, which is the foundation of shared action points. Focus group participants generated three tiers of expected actions that might be taken in response to a driving force. A review of the actions placed in Tiers 2 and 3 found that some of those would fall into the strategic response component. The finding implies that driving forces are found throughout all

components of an ASHE incident. However, those experienced in the strategic component are significantly different from those in the tactical or task components. This reinforces that RPDm and driving forces are tightly coupled and suggests that understanding and harnessing RPDm theory could affect all response components.

Finally, a force field exercise was used to determine whether focus group participants felt that the findings of this research — including RPDm theory and concepts, outcomes as driving forces, and shared action points — should be incorporated into ASHE incident training. For this exercise, participants were asked to write down reasons, or forces, for incorporating the findings on blue sticky notes and reasons against it on yellow sticky notes. Participants were also directed to write the strength of their force, reason, or obstacle on the note using a scale of 1 to 5, with 1 being the lowest strength; 3 medium strength; and 5 the most potent. They were directed to place sticky notes in columns based on their strength and the correct side of the board, either for or against. Figure 16 shows the results of the force field exercise, with a score of 84 for incorporating the findings in training and 34 against.

Force Field Analysis: Should we incorporate what we have learned about RPDM in to training for ASHE incidents?									
For					Against				
1(weak)	2	3	4	5(strong)	5(strong)	4	3	2	1(weak)
ICS and how it should be used	Better understand every position in an active shooter incident	Will allow decision made to be closer to a chassromm model and allow others to recognize when the decision varies from model	Creates better communication amongst agencies	Create mental blueprints for success	The use of limited training time	Money	Cost	Can take a lot of time and effort to coordinate the training	Trying to be a master of everything; how many things can we do; medic, HM, USAR
	The right thing to do	Better decision making	Improve communication & coordination at FD & PD (all levels)	Reduce failures at command level decision making	Getting everyone trained	Staffing	Time		
	Better understanding of everyones needs		Consistency for all departments Fire/PD/Dispatch	Reduce decision making time for officers/first line supervisor		Money	Is there sound science for how to build this into training or are we missing the mark?		
			Smooth coordinated response	Bleeds over into other areas of our job that is not ASHE					
				Cuts down on decision making options					
				Can help save lives					
				Will allow 1st responders to react faster to tough circumstances					
				Has an emotional context to the learning that will/may allow the training to be retained longer more effectively					
				Saves lives					
				Improve communication if this breaks most others do also					
				RPDM reflects reality of response - necessary for tasks to be accomplished					
1	6	6	16	55	10	12	9	2	1
				84	34				

Figure 16. Force Field Analysis

8. SMEs' Parting Thoughts

SMEs provided their final thoughts on focus group discussions. When comparing the findings of the focus group discussions to the agency's actual ASHE experiences, SMEs related the findings regarding law enforcement and law enforcement interactions to those from the case and policy analysis. One focus group participant specifically stated that law enforcement interactions were a problem based mainly on communications. Another participant related that continued training that embraces the theories and concepts of RPDM could increase positive outcomes provided the training is consistent and frequent. One SME stated that he felt portions of what the focus group found related to RPDM were evident in agency experiences; responders recalled previous training evolutions from the agencies involved, and decisions and actions were based on previous training and policy. Additionally, SMEs agreed that previous training helped create a recognizable analogue with emotional value and meaning for responders, which they could later use to make rapid decisions. Focus group participants also felt that training grounded in RPDM theory would improve other response components, particularly the application of incident command.

Focus group SMEs believe that responders can be trained to recall specific reactions to a stimulus during an ASHE if trainers focus on specific critical points. For example, trainers could concentrate on ensuring that responders recognize that there is a transition from "shooter down" to rapid casualty care and evacuation. The need to recognize the transition point is one thing but communicating that transition point to others on the scene is another critical action. Communicating the transition point to all other agencies on the scene is a shared action point that all responders need to identify. At this point, the incident has shifted, and driving forces have changed from driving forces provided by the shooter to driving forces provided by the victims. Just as the incident has transitioned from one phase to the next, different parts of policy will now govern responders' actions at the incident. The policy actions carried out by responders who have been trained to recognize various driving forces and take appropriate action will keep the mitigation action chain intact and continue to drive the incident forward toward mitigation.

C. SUMMARY OF FOCUS GROUP FINDINGS

1. Stalls in Action Do Occur

SMEs agreed that stalls in action did occur in the training session previously witnessed by focus group participants. They also agreed that the same stalls were possible during actual ASHE responses. SMEs posited that some stalls were caused by the responder having either limited or no experience with the situation they were in, therefore requiring more processing time to make decisions. However, they believed some stalls may be purposeful and intended to gather more information or clarity. SMEs discussed that purpose driven stalls are not necessarily bad and may lead to better decision making. In contrast, stalls based on a lack of experience were more likely to be detrimental.

2. Stalls in Action Can Be Reduced

There was consensus among the SMEs that stall time could be shortened or eliminated by exposing responders to simulated situations in training environments. They agreed that responders would likely run the mental simulations of the RPDM process more quickly as they gain experience from the training scenarios. Additionally, SMEs concurred that each training scenario would likely create an analogue situation that responders may recall later in an actual ASHE response. Finally, SMEs agreed that RPDM theory and the findings of the focus group should be included in future training exercises to reduce or eliminate stall time.

3. Driving Forces and Outcomes Connect to Create Chains

Actions taken in response to driving forces create outcomes. The outcomes of each action create new “actionable intelligence,” which is how ALERRT describes a driving force.²²¹ Following this logic, the outcome serves as the next driving force, but only if it is recognized as such. This process starts with the first driving force encountered and forms an action chain that flows through the incident until it breaks or the incident is mitigated. I

²²¹ Advanced Law Enforcement Rapid Response Training and Federal Bureau of Investigation, *ALERRT Train-the Trainer*, INST 2–26.

refer to this process as the mitigation action chain or mitigation action chain. I elaborate on the mitigation action chain in Chapter VII.

An example of an outcome becoming the next driving force is neutralizing the perpetrator. In this example, the mitigation action chain might develop this way:

1. **Driving Force 1:** A law enforcement officer arrives at an ASHE incident and hears shots fired inside a building.
 - RPDM Process: To decide what to do, the responder runs a mental simulation or finds a suitable analogue.
 - Decision: Law enforcement officer moves to engage the shooter.
 - **Outcome 1:** Law enforcement officer neutralizes the shooter.
 - RPDM Process: Law enforcement officer again runs a mental simulation or finds a suitable analogue to determine the next action.
 - Decision: law enforcement officer reports over the radio that the shooter is neutralized
2. **Driving Force 2:** Command hears radio transmission of shooter neutralized
 - RPDM Process: command runs mental simulation or finds a suitable analog
 - Decision: Recognizing the area is now a warm zone, command deploys RTFs to begin rescuing victims.
 - **Outcome 2:** RTFs enter and find multiple victims in need of assistance and transport them to the hospital.
 - RPDM Process: RTFs run a mental simulation or finds a suitable analog to decide on an action.

- Decision: RTF personnel begin treating patients and the RTF leader transmits a radio report of multiple victims in need of assistance and transport.
3. **Driving Force 3:** Medical personnel hear the radio transmission of multiple victims and establish triage, treatment, and transport functions within the incident command system.

Each series of driving forces, processing, action, and outcome creates a new link until the incident is mitigated or the mitigation action chain is broken. The reason for a break in the mitigation action chain could be because there is no resulting driving force, a failure to make a decision, or a failure to take action.

4. **Interactions On Scene Are Different from Those Expected in Policy**

SME participants in the focus group discovered that the on-scene interactions described in policy and those observed in AARs were different from one another. In comparison to the agency policies that were examined as part of this research, law enforcement was involved in considerably more interactions in AARs. This finding is not necessarily indicative of a policy issue, given the law enforcement–focused character of an ASHE; this is probably because law enforcement and fire rescue agencies worked together to write the policies. Additionally, the policies were mostly based on training exercises and other agencies’ policies because the agencies involved did not have experience with an ASHE at the time they were written.

5. **Actions of One Agency Affect Decisions and Actions of Other Agencies (These Are Shared Action Points)**

In the previous example, each driving force caused someone to take action. The outcome of that action then served as a new driving force for someone else to take another action. In this way, outcomes create driving forces for different people or agencies, as long as they are known to and recognized by those people or agencies. Additionally, the example demonstrates that actions by one agency affect the decisions and actions of other agencies. This is the basis for shared action points.

A shared action point occurs whenever an agency or person can build on a different agency or person's actions. Each agency and person must recognize that their decisions, actions, and outcomes will drive other decisions by other agencies or people. The collective effect of all decisions, actions, and outcomes is shared across all responders. As responders recognize the opportunity to build on the actions of another responder, the mitigation action chain grows and should eventually lead to full mitigation of the incident. However, if a shared action point is not recognized or communicated, the mitigation action chain breaks.

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VII. CONCEPTUAL MODEL

In this chapter, I discuss the mitigation action chain conceptual model, where each individual link is made up of driving forces, processing, actions, and outcomes. The links connect to each other to form the mitigation action chain, which moves the incident toward mitigation. The research was conducted through the lens of RPDM. The RPDM framework was used because it specifically relates to decisions being made under severe time constraints similar to those encountered during an ASHE.²²² Klein specifically relates eight factors that RPDM addresses:

- ill-structured problems
- uncertain dynamic environments
- shifting, ill-defined, or competing goals
- action/feedback loops
- time stress
- high stakes
- multiple players
- organizational goals and norms²²³

Arguably, each of these factors can come into play in every emergency response, particularly ASHE responses. After considering the policy and case analysis findings, a panel of SMEs from law enforcement and fire rescue agencies concluded that action taken in response to driving forces is a manifestation of RPDM.

Driving forces can be considered an overall group of stimuli that responders may encounter during an ASHE. They may be generated by the perpetrator, victims, or

²²² Klein and Crandall, *Recognition-Primed Decision Strategies*, 4.

²²³ Klein, *Decision Making in Action*, 134.

responders. SMEs also concluded that driving forces do not only apply to law enforcement, who originated the concept.²²⁴ While fire rescue agencies may not react to shots being fired as law enforcement would, they may react to certain radio transmissions or victims requiring treatment. Finally, as the incident progresses, driving forces may change.²²⁵ For instance, if the perpetrator is neutralized or contained by law enforcement, the primary driving force changes to victim care and evacuation.²²⁶

Furthermore, the specific driving force encountered will require a particular type of response. For example, the reactions that occur to shots being fired are different from those in response to someone screaming for help. When a driving force is recognized by a responder, the RPD process begins. In terms of this conceptual model, I refer to the process of recognizing and responding to each driving force as the ASHE recognition process (Figure 17). At this point, immediately after a driving force has occurred, there is potential for a stall in decision making and action. As the responder processes the driving force, another driving force may occur within seconds. That driving force also needs to be processed by the responder. As described by Boyd in his OODA Loop model, the responder observes the driving force and begins to orient to it, but before arriving at a decision, the responder observes a new driving force and reverts back to orientation.²²⁷

²²⁴ Advanced Law Enforcement Rapid Response Training and Federal Bureau of Investigation, *ALERRT Train-the Trainer*, INST 4–3.

²²⁵ Advanced Law Enforcement Rapid Response Training and Federal Bureau of Investigation, INST 7–21.

²²⁶ Advanced Law Enforcement Rapid Response Training and Federal Bureau of Investigation, INST 7–21.

²²⁷ Chet Richards, “Boyd’s OODA Loop,” *Necesse* 5, no. 1 (2020): 147.

ASHE Recognition Process

DRIVING FORCE THROUGH ACTION TAKEN

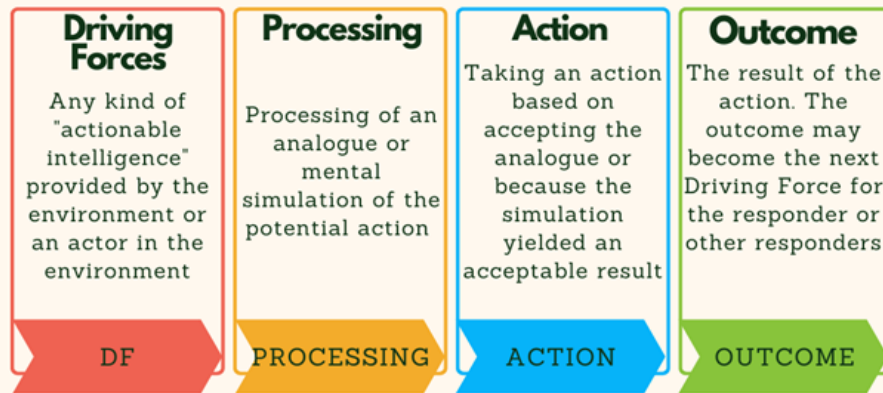


Figure 17. ASHE Recognition Process

After a driving force has occurred, the responder contemplates what action should be taken. In explaining his RPDM theory, Klein relates that the responder will either run a rapid mental simulation of a single option or recall an analogue situation that provides a workable solution.²²⁸ If either of those processes yields an acceptable outcome, the responder will act on it. When the responder takes action, the outcome of that action may then serve as a driving force for another action by a different responder or agency.

A. MITIGATION ACTION CHAIN CONCEPTUAL MODEL

The review of agency policy yielded several shared action points responders should recognize. Furthermore, the case study of the actions taken during actual ASHE responses demonstrated that responders do recognize those points and often respond appropriately to them. In many cases, the actions taken in response to a driving force generated an outcome that served as another driving force. Each of these driving forces and outcomes is a potential shared action point. Each iteration of driving force, processing, action, and

²²⁸ Klein and Crandall, *Recognition-Primed Decision Strategies*, 2.

outcome, where the outcome serves as a new driving force, causes another action. Every time the ASHE recognition process runs its course, it forms a new link in the mitigation action chain and sets a course toward mitigation of the incident. However, the chain is broken when an action is not taken in response to any single driving force. The fracture of this chain may either slow or completely stop the march toward mitigation. Figure 18 shows the components of a single link in the mitigation action chain.

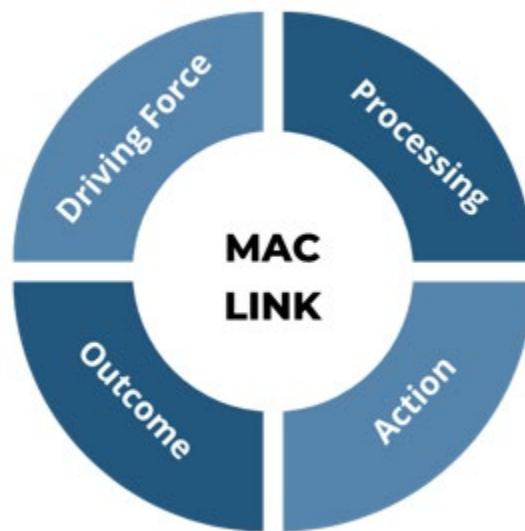


Figure 18. Mitigation Action Chain Link

B. THE MITIGATION ACTION CHAIN

If responders recognize that outcomes of certain actions provide the opportunity for another action, then each action functions as a shared action point. In turn, as the actions build new mitigation action chain links, they form a chain of actions that leads to the mitigation of the incident. This chain is the mitigation action. The process is not rigid or linear and may be messy and circuitous, like a chain that is not under tension. The chain may even develop branches similar to a tree, but all eventually come together again. Regardless of how the chain looks, if it remains intact, it leads to mitigation. If stalls in decision-making time are reduced or eliminated, the time to mitigation will likely be shortened. Figure 19 shows an example of the mitigation action chain developing.

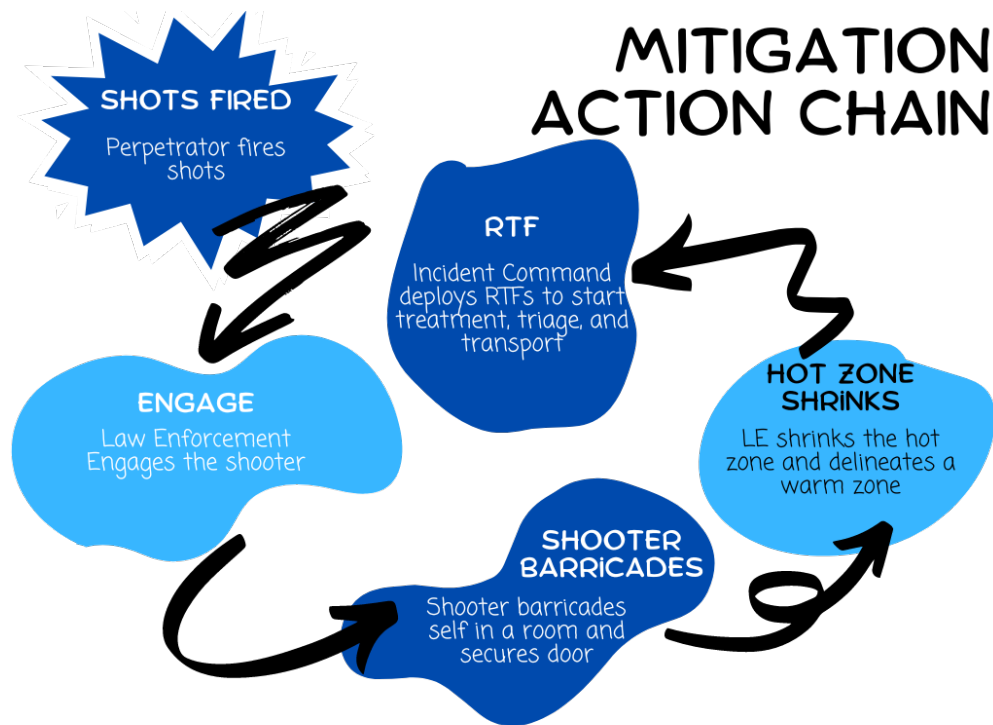


Figure 19. Mitigation Action Chain

If the responder does not recognize the shared action point, the next link in the mitigation action chain does not form. In Figure 20, if responders do not recognize the shared action point of the shooter barricading themselves in a room, then the hot zone does not shrink, and the RTF is not deployed. The stall increases the time that it takes to rescue victims in this situation. It should be noted that every situation is different, and a barricaded shooter may not always result in the hot zone shrinking.

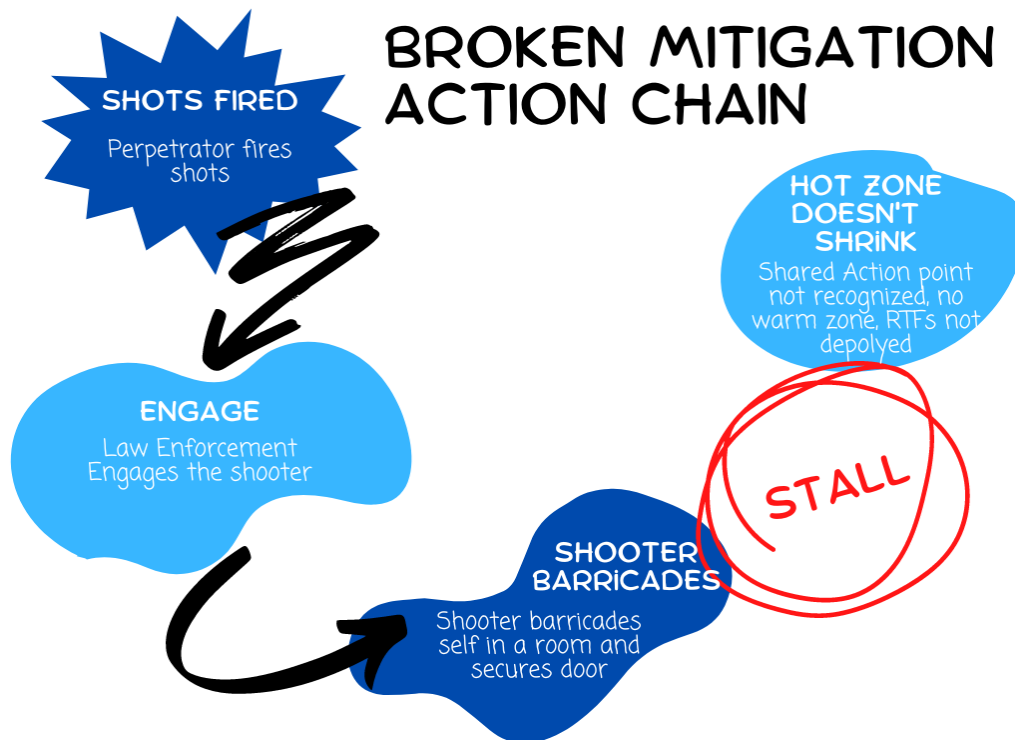


Figure 20. Broken Mitigation Action Chain

C. SHARED ACTION POINTS

Why are shared action points important? Shared action points at an ASHE are similar to the tactical benchmarks used in the fire service. Benchmarks serve as an indicator of progress and incident status to all firefighters on the scene.²²⁹ When the incident commander announces a benchmark over the radio, it signals a transition phase in the incident where different priorities develop and different actions are required. The critical element of benchmarking is the shared understanding of what they mean and what actions are expected in the new phase of the incident. Similarly, law enforcement commanders rely on progress reports from officers to understand the direction the incident is heading and prioritize or re-prioritize efforts and resources.²³⁰

²²⁹ Coleman, *Incident Management for the Street-Smart Fire Officer*, 298–99.

²³⁰ National Incident Management System Consortium, *Law Enforcement Incident Management Model Procedure Guide for All Hazard ICS and Large-Scale Incidents* (Kansas City, MO: American Public Works Association, 2017), 12.

D. SHARED ACTION POINTS THROUGH THE LENS OF RPDM

The RPDM process only refers to the decision being made by an individual. However, ASHE responses require a high degree of collaboration and coordination between multiple agencies. The RPDM process can also help responders recognize and act on shared action points during an ASHE. Once recognized and acted on, shared action points and outcomes must be communicated to and understood by other actors and agencies on the scene to ensure that continued actions in the mitigation action chain occur. When all actors and agencies understand the shared action points resulting from the decisions made, the time lag or stall between one action building on another is decreased. The decrease in lag time directly results from an understanding of why the decision to take a particular action was made and how it opens the door for another action to build on it. The stall is essentially the same as getting stuck in Boyd's OODA Loop.²³¹ Whether the responder cannot process the driving force because they do not recognize it or because it is occurring too rapidly, the result is a stall in decision-making and action. Training that explains RPDM concepts and theories may help responders understand what action points to look for so they recognize them more quickly and decrease the likelihood of a stall in decision making.

²³¹ Boyd and Hammond, *Discourse on Winning and Losing*, 384.

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VIII. CONCLUSION

This thesis sought to understand what shared action points law enforcement and fire/EMS personnel could identify, before an incident, to improve response coordination and collaboration during an ASHE incident. The research consisted of three phases: policy analysis, case analysis, and focus group discussions. The policy and case analysis were designed to determine if policy commonalities or common occurrences at an ASHE could be identified and used as shared action points. The policies were related specifically to ASHE responses and from three agencies that respond cooperatively to an ASHE in our jurisdiction. I analyzed ASHE AARs from the Inland Regional Center, Harvest Music Festival, Pulse nightclub, Marjory Stoneman Douglas shootings. The focus group discussions consisted of six SMEs who validated my findings, contributed to the research, and identified ASHE response commonalities and expected responses. The SMEs also evaluated whether agency training exercises should be modified based on the research findings and conclusions.

A. SUMMARY OF FINDINGS

There are a multitude of driving forces that occur at an ASHE. The number of potential driving forces is unknown and likely incalculable, meaning that constant review and revision of shared action points will be required going forward. The shared action points derived from the policy analysis, case analysis, and focus group findings are summarized in Table 19. The list of shared action points established from this research is not exhaustive but rather representative. More shared action points could probably be identified as training occurs or when analyzing future ASHE responses. The list is likely to be constantly evolving.

Many of the shared action points from each phase of the research had common elements which only appear in this list once. For example, several of the shared action points involved the responder recognizing that they have a critical piece of information, so the shared action point of “responder has critical information” is listed once. It should also be noted that the action taken for each shared action point may be different depending on the agency or other circumstances specific to a given ASHE incident. Finally, a shared action point may

have multiple potential responses that will again be specific to the agency involved or the incident circumstances.

Table 19. Shared Action Points

An ASHE incident has been dispatched
An ASHE incident is actually occurring
Shots fired by perpetrator
Viable victims are present
A need to increase coordination
Triage area is too close to the hot zone
Rescue/mobility is limited by some condition
Equipment is not working
Equipment is missing
A suspicious object or package is present
A suspected explosive device is present
A responder has critical information
A responder is wounded/injured
A role or function is already filled or completed
A role or function is not already filled or completed
A command role or function is not effective
Learning the perpetrator's location or location changed
The perpetrator is neutralized
Shooting or other mechanism of wounding victims has stopped
The perpetrator is monitoring responder's actions
Communication problems exist
Unprotected personnel are too close to the hot zone
Assuming command
Arriving at an ASHE incident
Transporting a patient to the hospital (LE officer)
Encountering a room of people hiding from perpetrator

Additional findings from SMEs participating in the focus group are that RPDM theory was helpful in understanding the concept of shared action points. SMEs validated the existence of stalls in action during ASHE training and agreed that they could occur during actual responses. Stalls in action increase the time between the start of the incident and its mitigation. SMEs also agreed that stall time could be shortened by engaging in realistic training scenarios, theoretically decreasing the time between the beginning and mitigation of the incident. Focus group SMEs concluded that RPDM would help responders to recognize what actions to take in response to driving forces and that it will also help them to recognize shared action points.

SME participants in the focus group found that the on-scene interactions described in policy and those observed in AARs were different from one another. This finding is not necessarily indicative of a policy issue, given the law enforcement-centric nature of an ASHE. Additionally, the agencies' policies were written collaboratively between the law enforcement and fire rescue agencies involved, which likely contributed to the difference. I am not aware of how the policies of the agencies involved in the AARs were developed.

Finally, the outcomes of actions taken can serve as a new driving force during ASHE incidents. The new driving force may cause a different agency to act, thereby creating a shared action point. As agencies involved in an ASHE response build on one another's actions, they form new links in the mitigation action chain. As the mitigation action chain continues to grow and branch out, the incident moves closer and closer to mitigation. However, some actions or the failure to recognize a shared action point may break the mitigation action chain.

B. RECOMMENDATIONS

Based on the research conducted for this thesis, I make the following recommendations:

1. Evaluate current policies.
 - a) The agencies involved in this research should evaluate their current policies on a regular basis to determine if updates are needed.
Given that ASHE incidents are rare occurrences for specific

agencies, policies should be evaluated regularly to consider new ASHE AARs. More importantly, if the agencies respond to an ASHE, their actual experiences should be used to evaluate policy.

- b) This research found that the on-scene interactions that were expected in policy were not representative of the interactions that occur on ASHE scenes. The policies should be evaluated to determine if changes are needed to more accurately reflect the interactions that occur.

2. Create a cross-discipline training plan that incorporates shared action points and introduces the mitigation action chain conceptual model.

- a) Develop learning objectives as the basis of the training program:
 - i. Responders will be able to explain a stall in action and how it affects the incident.
 - ii. Responders will be able to explain how driving forces and RPDM are related and how they lead to the decision to act.
 - iii. Responders will demonstrate recognition of various driving forces frequently found in AARs of ASHE incidents.
 - iv. After identifying several driving forces, responders will demonstrate the ability to prioritize them accurately.
 - v. Responders will demonstrate the ability to generate an appropriate response to driving forces, including from their actions or the actions of another agency or actor.
 - vi. Responders will demonstrate an understanding of how the outcome of an action transitions to a driving force.
 - vii. At the conclusion of the training, responders will demonstrate an understanding of how the actions taken at a scene influence or affect other actions by either breaking or continuing the mitigation action chain.

- b) The training should introduce the concept of stalls in action and explain how they affect incident outcomes.
 - c) The training should introduce shared action points and explain how they decrease stall time and aim to improve incident outcomes
 - d) Training should focus on recognizing driving forces during ASHE incidents by introducing the ASHE recognition process. The agencies involved in this research should use these findings to establish a list of common shared action points to be used in training evolutions.
 - e) Training should aim to explain how driving forces are recognized and acted on through the RPDM process and build a chain of outcomes that lead to incident mitigation. The training should explain how responders from one agency must recognize the actions taken by other agencies and how they present an opportunity for follow-on action. To reinforce these points, responders would be introduced to the mitigation action chain. Following the mitigation action chain concept, responders will better understand how actions build on other actions to move toward mitigation. The synthesis of the ASHE recognition process and the mitigation action chain would demonstrate to responders how stall times can be eliminated or decreased through interdisciplinary shared action points.
3. Test the effectiveness of the training program.
- a) To test the effectiveness of the training program, trainers simulate an ASHE incident in a training environment prior to introducing the concepts developed in this research. During the simulation, trainers will observe trainees for stalls in decision-making and recognition of shared action points.

- b) Trainers will time the exercise from start until the first patient is moved to an ambulance. If possible, trainers will document the time of specific stalls.
 - c) Trainers will then introduce the concepts developed in this research and run another simulation. Trainers will again observe for stalls and time the exercise. If the training is effective, a decrease in or absence of stall time should be noted and overall time should be reduced. Trainers should work with exercise design practitioners to eliminate variables to the extent possible to achieve the most accurate results.
- 4. Develop a feedback mechanism to identify new shared action points.
 - a) The agencies should develop a system that allows responders to provide feedback at ASHE training exercises or after an ASHE occurs. As responders continue to train for ASHE responses, they may identify new shared action points that could be incorporated in to training exercises. Furthermore, as ASHE responses occur throughout the country, responders may recognize new shared action points based on AAR's or other reports.

C. FUTURE RESEARCH

Future researchers should conduct action experiments to determine the effectiveness of shared action points during all phases of an ASHE incident. The experiments should include timed exercises before the training outlined in the Section B3b recommendation. The time between a driving force occurring and a resulting action and the total time from exercise start to finish should be noted. The total time of the exercise is important because it likely relates to the total time that it would take to neutralize a perpetrator and begin rescues during an actual ASHE incident. Following the “golden hour” concept in emergency medicine, the total time to neutralize a perpetrator, begin medical care in the field, and transport the patients to definitive medical should be as short

as possible.²³² Training on the ASHE recognition process and the mitigation action chain should then be provided to participants in a separate timed exercise to determine if decision time and mitigation times are improved. Because this research is specific to the agencies involved and not generalizable, researchers would need to establish their own shared action points based on their policies. The process used in this research could be replicated by other agencies to establish their own shared action points.

This research resulted in 26 shared action points that may occur at an ASHE. It is unlikely that a training program could effectively focus on such a large number of specific points. Additionally, it could be argued that some shared action points are more critical for positive outcomes than others. Evaluating the criticality of each shared action point could be another area of future research. The findings of such evaluation might help responding agencies focus more intently on these critical points during training exercises.

D. CLOSING

ASHE responses are complex, chaotic events that require significant coordination between law enforcement and fire rescue responders to ensure the most positive outcome possible for victims. The ASHE recognition process will help responders recognize shared action points that allow responders to build on each other's actions without delay. As responders act in response to driving forces, the mitigation action chain forms a path toward mitigation. Responders who are trained to recognize shared action points and seize the opportunities they present will likely increase effectiveness during ASHE responses and thereby increase the likelihood of victim survivability.

²³² The “golden hour” concept in medicine states that the first hour after a traumatic injury occurs is a critical window of time where the patient must reach definitive medical care, including surgery and treatment for shock, to prevent death. ASHE incidents are likely to result in traumatic injuries to patients, including gunshot wounds that will likely require surgical intervention. While there is some disagreement over the actual time that a patient may survive without definitive medical care, the “golden hour” is still frequently used as a measure of the effectiveness of an EMS response. Kundavaram Paul Prabhakar Abhilash and A. Sivanandan, “Early Management of Trauma: The Golden Hour,” *Current Medical Issues* 18, no. 1 (2020): 36, https://doi.org/10.4103/cmi.cmi_61_19; E. Brooke Lerner and Ronald M. Moscati, “The Golden Hour: Scientific Fact or Medical ‘Urban Legend’?,” *Academic Emergency Medicine* 8, no. 7 (July 2001): 759–60, <https://doi.org/10.1111/j.1553-2712.2001.tb00201.x>.

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APPENDIX A. FOCUS GROUP 1 QUESTIONS

When might a stall in action ever be acceptable or reasonable?

What other types of actions directed in policy are not reflected here? (After sharing 7 types of actions found during the policy analysis)

What stimulus at ASHE incidents should cause a reaction? (whiteboard sticky note exercise)

What stimulus at ASHE incidents should not cause a reaction? (whiteboard sticky note exercise)

Based on policy direction, the agency most responsible for ____ is ____:

- Initiating Direction of Personnel: EMS
- Initiating Medical Care for Victim: EMS
- Initiating Communication with Other Agency: Tie: Dispatch/Fire & EMS
- Initiating Resource Coordination: Fire/EMS
- Initiating Communication with Victims: law enforcement (solely)
- Initiating Direct Action: Fire
- Initiating Communication with Hospital(s): Fire/EMS

What does this tell us about our policies?

Policy directed actions are categorized as 55% tactical, 35% strategic, and 10% task. What does this tell us? Where should we focus our efforts?

What does this show us? Are some of these more difficult than others? (after showing a graphic depicting the interactions found in policy between different agencies or actors)

What does this tell us? (after showing the word cloud analysis of AAR excerpts)

How do these findings relate to our own experiences during training and at our ASHE incident?

How what we have learned here influence or change our training for ASHE incidents?

APPENDIX B. FOCUS GROUP 2 QUESTIONS

What are your thoughts or observations on my findings from the AAR analysis? Did they make sense? Did I miss anything?

What is the difference between tabletop training discussions and hands on scenarios based training and why is it important?

Is there a relationship between driving force and RPDM?

How can responders be trained to recall certain reactions to stimulus during an ASHE incident?

How can the concept of recognition primed decision making be incorporated into training scenarios to reinforce response policy and maintain driving force?

What is your biggest take away from the two focus group discussions?

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